Economics & Competitiveness Information

Alberta Agriculture, Food and Rural Development

Report Two

Competition for World Honey Markets: An Alberta Perspective

Competitiveness
Porter's Five Forces Model
Honey Industry Review

Competitive Intelligence Unit

Alberta—Argentina—China—United States

April 2001

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Prepared by: Competitive Intelligence Unit

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1998 Premier's Award of Excellence

Alberta
AGRICULTURE, FOOD AND RURAL DEVELOPMENT

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Executive Summary

Key Research Findings

1. A new retail environment exists where honey buyers are pushing for ever-lower prices while pressing suppliers to be more efficient and reliable.
2. There are competitive threats to honey from new health food types of sweeteners; there are opportunities for new uses of honey.
3. There are both concerns and relief over the state of global competition and the looming threat of emerging competitors.
4. Turmoil and uncertainty in the US market is due to (1) the ongoing dumping and countervailing cases against Argentina and China and, (2) the country's 2000-crop Loan Deficiency Payment (LDP) Program.
5. Alberta's honey industry can be competitive in the global context.

This report, *Competition for Word Honey Markets: An Alberta Perspective*, is the result of a project that was initiated after Barrie Termeer, then president of the Alberta Beekeepers Association, submitted a study proposal to the Competitive Intelligence (CI) Unit of Alberta Agriculture, Food and Rural Development. In his proposal, Mr. Termeer outlined specific concerns of the Alberta honey industry about competition from Argentina in the US honey market and more general concerns regarding heightened global competition in world honey markets.

An industry team of six members was assembled to represent all facets of Alberta's honey industry: three producers, one processor, one marketer, and one broker. Every two to three weeks a newsletter of research updates was e-mailed to team members who communicated monthly via conference calls to assess research findings and guide future work. During the research phase of the project, over 70 industry, government and academic experts were consulted or interviewed by the CI Unit. One aspect of competitive intelligence work is to report on weak market signals, events and relationships that can provide warnings of future changes and trends for competitors, markets and technology. For this reason, some data and information analyzed in this document were derived from rumours, opinions and unsubstantiated information.

This study provides a comprehensive analysis of the competitiveness of Argentina, China, the United States, and Alberta in global honey markets. The research has been organized according to the effect and impact of six competitive forces including:

- The bargaining power of buyers (packers, food processors, and retailers);
- The bargaining power of suppliers (input suppliers of feed material, bee packages and queens, barrels, etc.);
- The threats of substitutes (like jam or corn syrup);
- The opportunities posed by complements (tea, breakfast cereals, and health foods); and lastly,
- The rivalry among existing global competitors and the threat of new entrants or competitors.

Based on this approach, the study team arrived at the key research findings summarized above and elaborated upon below.

1. A New Retail Environment

The relationship between retail buyers and honey packers/processors has been changing rapidly with the advent of Internet buying and retail consolidation. Traditionally, bulk industrial honey contracts were negotiated between buyers and packers over what could amount to a month-long period; today, they may be resolved in a 30-minute bidding process via the Internet. Furthermore, retailers have increased the number of discounted private label products for the obvious purpose of expanding revenues and the less obvious purpose of countering the rising power of heavily consolidated food processors. Relatively fragmented and in a weak bargaining position in the retail environment, some packers expend ten percent of total costs on various fees to keep their honey on grocery shelves. The focus now is on low price and high volume buying with documented food safety assurances. The pressure that the new retail environment has exerted on packers is inevitably passed on to beekeepers who may be unaware of the changes their customers, i.e., the packers, have endured.

2. Substitutes and Complements Provide Both Threats and Opportunities

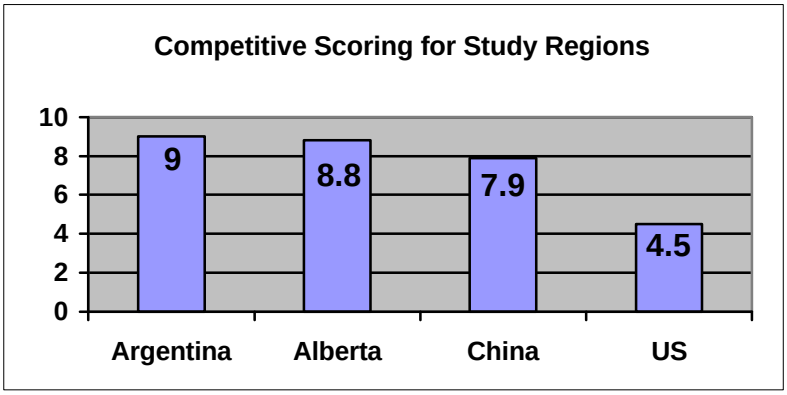
The market share that honey maintains in the *sweetener* category is always under threat. Studies have shown that when honey prices increase, consumers purchase more substitute sweeteners such as syrup, molasses, sugar, and corn syrup. Furthermore, sweeteners like blackstrap molasses, organic brown rice sweetener, and grape juice concentrate are currently available in the health food section of major supermarkets in Alberta while honey is conspicuously absent. The US National Honey Board has funded research that indicates a promising outlook for new market options for value-added honey products.

An additional concern exists in the *industrial honey* category (i.e., honey that is used as an ingredient in processed foods or medicines). Just like consumers, buyers of industrial honey are also very sensitive to price. Fortunately, new opportunities exist for Alberta's high-end white honey, which is well-suited for cough syrup and other cold remedy products. Also, ponder the possibilities and potential for increased honey use if North American coffee drinkers, who currently sweeten their coffee with sugar, switched to honey as their sweetener of choice -- a three billion pound market could emerge (roughly eight times the existing market).

3. Global Competition

There is no doubt that global competition is fierce in the honey industry. Argentina and China lead the way in exports with low-cost honey that fits well with the current retail environment. An estimation of costs for honey delivered to the US market for the four study regions was calculated to be $0.45 (US) for China, $0.50 for Argentina, $0.54 for Alberta, and $0.67 for the US. Quality- based adjustments to prices (based mainly on honey colour and buyer perception) give Argentina a slight lead over China with Alberta in the running to competitively sell premium honey. Many producers in Alberta are able to squeeze a thin margin on their sales; however, many US producers appear to be selling into their own market at a loss. The main advantage Alberta has over US producers is their significantly larger yields (lowering per-unit costs) arising from an expanse of floral material and long summer days that generate better nectar flows. Having a strong US dollar also strengthens our export positioning.

This study also provides an assessment (scoring) of over-all competitiveness evaluating cost, quality, and marketing capabilities. The scores, shown below, reflect future direction in competitiveness. While China is extremely cost competitive today, its prominence in global honey trade appears set for decline owing to labour supply limitations and costs, increasing costs in accessing floral sources and a host of other issues. Given the competitive disadvantages in the United States, further reductions in the number of beekeepers and hives remains likely unless government subsidies or anti-dumping and countervailing duties compensate their cost disadvantage. Conversely, US beekeepers may become increasingly competitive in niche markets. Alberta has the advantage of cost-effectively producing high quality white honey with the US, its main export market, nearby; strategic marketing could further enhance competitiveness. Argentina is cost competitive, produces good quality honey, and markets honey reasonably well, ensuring it a continued position of dominance in world trade. Other countries to watch in the future are Uruguay and India and to a lesser extent, Australia, Vietnam, and Mexico.



4. Turmoil in the US Honey Industry

The United States 2000-Crop Honey Non-recourse Marketing Assistance Loan and Loan Deficiency Payment (LDP) Program is currently providing US producers with a 13 to 14 cent per pound (US) subsidy. The non-recourse aspect of the program holds the threat that honey could be forfeited to the government if producers do not market their own honey to pay off their marketing loan. In the early 1980s, a massive 100 million pounds of forfeited honey reentered the US marketplace with extremely negative market consequences for North American prices and Canadian honey exporters. With the LDP program coinciding with possible anti-dumping and countervailing levies against China and Argentina, there is a chance for elevated market prices to limit the potential damage to the market.

The current US dumping case against Chinese honey exporters, along with dumping and countervailing cases against Argentina, could lead to a gap in the market which would be of short-term (possibly medium term, i.e., 5 year) benefit to US and Canadian producers along with other global exporters. Given the large size of the US market, the risks are that prices may rise to levels that encourage many new competitors to produce and export honey. An increase in the number of hives around in the global honey industry could result in an over-supplied market and pressure for lower prices in the future.

A lesson can be drawn from the recent price spikes that occurred in the aftermath of the 1995 China Suspension Agreement that limited China's export volumes and pricing options in the US market. With excellent profit margins in the 1996 to 1998 period, many producers invested heavily in new hives, extraction equipment, and facility or honey house improvements. Reducing the bottom line (by replacing relatively expensive labour with equipment and other

capital investments) may have improved the survival prospects of some producers in today's low-price market. As a result, however, the opportunities for retailers (in their strong bargaining position) to further edge prices down may be a key force that will cause North American beekeeping operations to exit the industry.

5. Competitiveness of Alberta's Honey Industry

The key factors in providing unique value for customers (packers) and consumers for honey include taste, colour, purity, crystallization, drum quality, and food safety along with the ability to commit to contracts and maintain reliability of honey supply. Quality and perception of quality in these areas matter. While Alberta honey may be recognized in certain parts of the world, on a global scale, our small size may limit potential for market recognition. Alliances and common marketing approaches may help in this regard.

Alberta beekeepers are globally competitive with a quality product that positions them at the upper-end of commodity honey markets. Therefore, efficient Alberta producers are well-positioned for the future. There are, however, some concerns including the LDP program, the possible impact of impending US trade sanctions against Argentina and China, and the threat of new global exporters that are able to live with low prices for the long-term.

Alberta beekeepers have the potential to increase their long-term profitability by combining the fundamental advantages of cost and quality with a strategic approach to the market. An approach to efficient and cost-effective production is a basic requirement in today's market and, therefore, is not a strategy. Strategies in the honey industry are forged in making trade-off decisions such as which customers to focus on and how quality and food safety will be addressed. Long-term profitability seems more likely where the value of Alberta honey is elevated above the price-market crowd.

Strategic Considerations

North American markets are becoming increasingly polarized between high-end niche and low-cost categories. Wholesale and retail buyers are developing new demands in terms of contracting, quality and food safety. New products emerge on grocery shelves that compete directly and indirectly with honey. New competitors are emerging, particularly in developing countries where labour is relatively cheap and floral sources are available. Yet there is no script as to how strategy can be developed to address these new business realities. The script must be developed by companies and possibly supply regions and industry organizations.

Understanding the competitive business environment is the first step in developing a strategic approach to markets and competitors. While this document addresses this first step, industry follow-up should address strategic considerations in areas such as market development, operational efficiency, quality assurance and food safety programs. Success in these avenues will play a key role in seeing the Alberta honey industry prosper in the years to come.

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Chapter 1. Introduction

A. Purpose

This document, *Competition for World Honey Markets: An Alberta Perspective,* is a comprehensive competitive intelligence report that addresses the opportunities and threats confronting Alberta honey producers and marketers in the European and the United States markets. Its purpose is to provide information that assists Alberta beekeepers, packers, marketers, and exporters of Alberta honey in making important business decisions. Key decision areas include investment, inventory management, and marketing strategies.

There are many questions and issues that this document addresses. Is Alberta's honey industry in a position to grow? Will the United States protect its honey industry and, in doing so, harm our industry? Will Argentina squeeze Alberta out of the US market or will anti-dumping levies keep both Argentina and China at bay? Can Chinese and Argentine producers live with lower prices? Should we pay attention to other honey-producing countries such as Vietnam and Australia? Do we look at these competing countries and forget that consolidating retailers provide another "competitive force?" And what about sweet spreads like jam and alternate sweeteners like sugar that compete with honey for consumer dollars? Even suppliers provide a form of competition. Producers need suppliers, but if suppliers consolidate or somehow increase their bargaining power in the market, they become yet another "competitive force." Because these competitive forces can affect the profit margins of producers, packers, and exporters, they are worthy of analysis.

B. Background

The Project Team

In November 1999, Barrie Termeer (Honeybear Apiaries Ltd.), then President of the Alberta Beekeepers Association (ABA), drafted a proposal for the Competitive Intelligence (CI) Unit* of Alberta Agriculture, Food and Rural Development (AAFRD; also referred to as the Department) to study the global honey industry. At that time, the main concern was the threat of Argentine honey exports to the United States and the possibility this could affect Alberta's share of the US market. To address this issue and other arising concerns, an industry group was formed in February 2000 to partner with the Competitive Intelligence Unit in doing the study. Along with Mr. Termeer, the team included Alberta beekeepers Grant Hicks (current ABA President), Jean Paradis (Paradis Honey Ltd.), Roy Sterling (General Manager, Alberta Honey Producers Co-op packing plant), Gordon Marks (Director of Market Development, BeeMaid), and Elise Gagnon (Odem International). In studying Alberta's competition in the honey industry, this industry team helped maintain a focus on useful, relevant industry information.

> **** Note:** The CI Unit was initiated in 1998 to serve both industry and the Department. Intelligence refers to information that is brought together, analyzed, evaluated, and used in the decision-making process. Competitive intelligence refers to the current, relevant, business information about competitive factors that have an impact on decision-makers. Intelligence provides a reality check. In contrast to conventional research, CI often places more emphasis on current primary sources of information, opinions, Internet material, and unique analysis of the competitive environment.*

The State of the Honey Industry

Is the global honey industry changing? Recent newspaper articles and economic data suggest that the honey industry is in a state of decline particularly in the United States. The only way to make money on honey these days is to make a lot of it.[1] With 43 percent fewer hives in the United States in 1999 compared with 1989 figures, the honey industry has clearly been going through a significant transition. In Alberta, the total number of beekeepers in 1990 was about half of what was documented in 1982. However, from 1991 to 1999, the number of colonies in Alberta increased by about one-third.

The transformation of the honey industry is similar to that of many other agriculture industries. These transformations relate to price reductions, rising input costs, and strong global competition. While some beekeepers, packers, and buyers may exit the industry, those who remain must find a way to navigate the new competitive environment to prosper now and in the future.

C. Focus

This study is focused on the following:

- factors that influence honey prices, exports, and imports;
- beekeepers, their suppliers and buyers, new and existing honey supply competitors, retailers, industry organizations, and relevant government bodies;
- products that compete with honey such as sweeteners and spreads (e.g., high fructose corn syrup and jams);
- products that help honey compete (e.g., high-energy foods and drinks, coffee, and tea where honey is used as a sweetener);
- the honey industry in China, Argentina, the United States; and,
- bulk white honey in the US and European honey markets, with attention to a variety of container formats and floral sources.

Information and analysis provided in this report may address some information gaps and possibly provide a new way of looking at the honey industry and its future. However, the potential for change, in light of current realities and trends, rests with the five decision-making groups within the industry: beekeepers, packers, marketers, exporters, and industry organizations.

In a general sense, this report attempts to provide a "reality check" for the honey industry by asking these questions:

- What changes are taking place in the honey industry and how are they affecting Alberta and our global competitors?
- What is causing the changes?
- What is Alberta's competitive position in the industry?

D. Framework

Developing a useful framework or approach to this study is important because it shapes the way the information is developed and presented. The framework, therefore, may influence the conclusions drawn by researchers and readers alike. The approach adopted here incorporates thoughts from business writers with considerable experience in the area of competitive analysis: Michael Porter, Barry Nalebuff, Adam Brandenburger, Liam Fahey, and Ben Gilad.

Basic Competitive Environment

What is a "competitive environment"? There are many ways of looking at it. Figure 1.1 shows the links between the honey industry and other industries that are viewed either as competitors or allies. Ultimately everyone depends on the consumer to buy honey, but before honey (or a product containing honey) is stocked on a grocery shelf, many different people, companies, and industries become involved. Each exerts a different degree of power in deriving profits from the honey industry.

Figure 1.1 is a simple model of a very complex competitive environment. For example, companies that supply chemicals or extraction equipment have an impact on beekeeper profits. Food processors that use an electronic bidding system for honey supply contracts affect the industry. Companies, governments, and unrelated industries, like oil and gas, also are factors in the competitive environment. This or other industries may offer workers higher wages than beekeepers can afford to pay. This creates a problem in Alberta; it becomes harder to attract and keep people working in the industry. Mapping the complex web of variables that affect the competitive environment is a time-consuming task. What is more realistic and strategic is to forge a big picture perspective of the key factors that affect the honey industry.

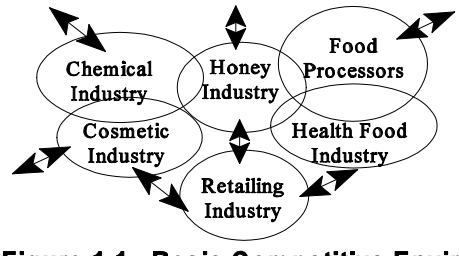


Figure 1.1. Basic Competitive Environment

Key Factors Affecting Competition

A generic big picture approach to investigating the competitive environment is presented in **Figure 1.2**. There are six basic forces at work that determine the degree of competitiveness, and ultimately, the profits that industry groups might expect today and in the future. These key forces include buyers, suppliers, new entrants, substitutes, complements, and internal rivalries. Other factors that have a significant impact on the honey industry — like industry organizations and governments — can be viewed in terms of their impact on each of the six key forces. The following overview of these forces provides the background for more detailed discussion in subsequent chapters.

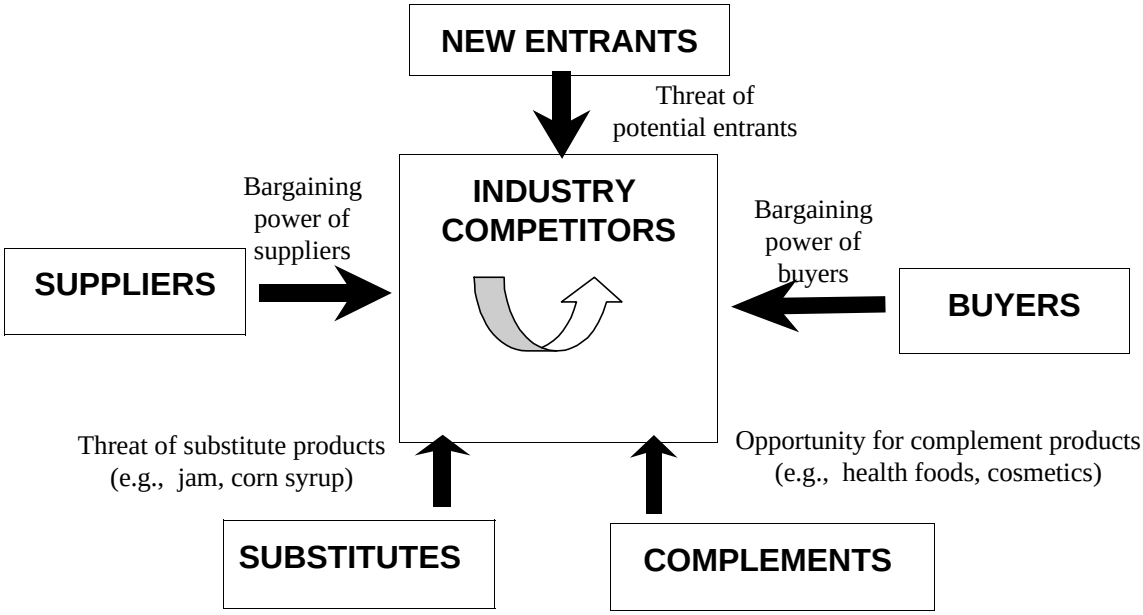
Buyers

Honey buyers may be exporters, packers, retailers, wholesalers, or others. The size and relative importance of honey sellers often determine the bargaining power of buyers. According to Michael Porter, "buyers compete with the industry by forcing down prices, bargaining for higher quality or more services, and playing competitors against each other—all at the expense of industry profitability."[2] When buyers have more information than sellers, and a choice of many suppliers, they will have power in the market.

Suppliers

Suppliers, who can provide equipment, feed, chemicals, and other supplies, are important to beekeepers. Where only a limited number of companies are able to supply materials (i.e., those materials or supplies that beekeepers cannot construct or mix themselves), these suppliers exert fairly significant bargaining power in the market. They can potentially increase prices charged to beekeepers (i.e., squeeze producer profits). At the same time, if their products can only be used by beekeepers, they are interested in a prosperous beekeeping industry and may take this into account in setting prices.

Figure 1.2. Six Forces Affecting Competition



New Entrants

If costs to enter the beekeeping industry were several million dollars, price increases wouldn't likely be followed so quickly by supply increases. But, the beekeeping industry is not capital intensive (i.e., you don't need to spend a lot of money to get started or to add hives to your operation). Therefore, price increases, like those triggered by the Suspension Agreement that limited exports of Chinese honey to the US (see p.60) can lead to rapid supply responses (as they did in Argentina) either through expansion of existing operations or new entrants to the industry. This growth can be accelerated when governments see benefits in a growing honey/pollination industry and support growth of the beekeeping sector.

While it is easy to understand why honey producers like to see price increases, it is a reality that a price increase stimulates increased supply that in turn triggers a collapse in future prices. Even in the United States, some individuals in the honey industry are concerned that anti-dumping charges against China and Argentina could lead to a short term price increase with a negative consequence — new competitors will enter to meet the demand in the US. Who would the new entrants be? Some people believe that countries like Vietnam, and possibly India, may increase their shipments of bakery grade honey, while eastern European countries may be able to capture some of the lighter honey markets, along with Australia, New Zealand, and Canada.

Substitutes

Substitutes for honey include products like jams or jellies (as breakfast spreads) and corn syrup, sugar, and molasses (as sweeteners). When the price of honey rises, the consumption of honey may drop as consumers turn to jam. However, many observers suggest that consumption of table honey changes little as prices rise or fall because, in part, honey is purchased infrequently making consumers less sensitive to pricing.

While consumption of table honey has been relatively stable, industrial honey (i.e., honey that is used as an ingredient in processed foods and beverages) appears to be going through a period of expansion. It is not surprising that this coincides with recent drops in world honey prices suggesting that the market for industrial sweeteners is highly price sensitive; processors are shifting from one sweetener to another based primarily, although not exclusively, on price.

Complements

Complement products are the opposite of substitute products — rather than providing competition, they provide opportunities. For honey, a product that goes well with so many different foods, complements are particularly important. For example, using honey in health food snacks can create an opportunity for expanding the honey market. White honey may be the perfect sweetener for use in clear beverages that are sugar- and Aspartame-free, or, in medications such as cough syrups. Coffee and tea are also complements for honey. The per capita daily consumption of coffee in Canada and the US is about 1.7 cups — 63 percent of these coffee drinkers sweeten their java. If only honey, not sugar or any other sweetener, were used by these coffee drinkers, then about 1.3 billion kilograms (or close to 3 billion pounds) of honey would be required annually.[3] Looking at it this way, we can see that complements may be as important to the honey industry as honey itself.

Internal Rivalry

Buyers, suppliers, new entrants, substitutes, and complements are competitive factors that affect the honey industry and the profits of the individuals in its ranks. Beekeepers, packers, marketers, exporters, or honey industry organizations such as the ABA can benefit from taking these factors into account when they develop their marketing or production plans. What is usually more obvious and time-absorbing for industry members is the state of competition inside the industry (i.e., the rivalry between beekeepers, packers, marketers, exporters, and honey-producing nations).

As major exporters attempt to cultivate markets overseas, their actions may affect the industry at large. Industry organizations like the American Beekeepers Federation or American Honey Producers Association may get involved when they perceive their domestic market is under attack.

The increasingly global orientation of the honey industry and the changes that are occurring in different countries and related industries make it more difficult to perform a reality check on the industry. Given this situation, it is no surprise that a variety of opinions exist in the industry.

The six competitive forces can help beekeepers and others in the honey industry to piece together a complex puzzle and develop business strategies. The forces also provide a way of looking at the industry as it evolves.

E. Perspective

Our perspectives influence the way we interpret information. For example, for many years the North American automobile industry did not recognize that Japan was a serious competitor —the mind set or perspective was that Japan's automobiles were of poor quality and styling; therefore, they posed no competitive threat. By challenging our assumptions, we become more objective in evaluating new information. Unfortunately, the more experienced we become, the more difficult it is to adopt a new perspective. Among the factors that may affect perspective, two emerge as particularly important: *value chains* and *blind spots* or *mind sets.*

Value Chains

For industries, a value chain is the concept or general approach of adding value to a product, such as honey. Producers are the first link in the chain. They are linked to honey processors who are linked to buyers and retailers or food processors. For companies, a value chain is a flexible but formal initiative on behalf of individuals and companies seeking to shrink costs and address quality or market development issues by coordinating their efforts (e.g., shipping logistics, inventory management, bulk group purchasing, etc.) and sharing information and risks. Producers, who occupy the first position in the value chain, can get closer to, and hence understand more clearly, the retail and consumer end of the chain. They can then set up their operations accordingly. Industries can develop and survive in an increasingly competitive environment through the application of value chains with shared risks, investments, and growth opportunities.

Jan Van Roekkel, a government representative from the Agri Chain Competence Foundation in the Netherlands, believes that in the future, companies won't compete with one another, nor will countries. Instead, future competition will be between a few global value chains. Clearly, this is becoming a reality in some sectors of the economy where heavy consolidation trends persist.

This general trend to consolidation is found in many primary agricultural industries and the food processing sector. In the retail industry, bankruptcies, mergers and acquisitions are signals of heavy consolidation. An indication of this trend in the retail industry is found in a document [4] that reports:

> *Shopping center owners alone have lost over $800 million in profit from 1990 to 1997 due to retailer bankruptcies, liquidations, mergers, and acquisitions. By year-end 1998, the total value of retail mergers and acquisitions was over one trillion dollars, and consolidation has brought the competition down to two or three players dominating each retail category nationally.*

Food processing industries have also been consolidating. In the United States in 1992, four leading food processors accounted for 85 percent of breakfast cereal sales, 75 percent of chocolate and cocoa product sales, and 56 percent of cookie and cracker product sales.[5] The implication of this massive consolidation is that retailers and processors have increased their bargaining position with vendors and suppliers. This will put increasing pressure on packers and producers who market their own honey to position themselves in the new retail environment. Food producers and processors will have to decide whether their operations are going to cater to niche or volume markets as they develop their approach to the evolving marketplace. The USDA provides the following relevant thoughts in a recent document.[6]

> *Grocery suppliers will be challenged to meet the needs of retailers that adopt [value]-chain management practices. Many smaller grocery suppliers may conclude that by forming joint ventures and cooperatives of their own, they are better able to meet the procurement and marketing demands of large retailers. Other small supplier firms are seeking niche markets for a limited range of product offerings.*

Kraft Foods offers the following approaches to supply chain management. Partnering with retail grocers, Kraft provides "proven solutions such as Advanced Shipment Notification, Vendor Managed Inventory, and Order Pattern Analysis...[With Kraft]...you can maximize efficiency and implement best practices throughout the store".[7] In other words, Kraft has found a way to integrate its operations with that of retail outlets. Through "category management", Kraft helps stores manage whole sections of products (e.g., the salad dressing section) by providing ways to analyze consumer data and evaluate the effect of both in-store and external promotions. In the words of Kraft, "at the heart of all our category management efforts are Kraft's local, customer-focused information teams that specialize in knowing your business and uncovering insights to drive your business."[8]

If food retailers, processors, and service companies continue to consolidate and forge links with suppliers, how will this affect the honey industry? The answer may be unclear at present. However, if the honey industry is fragmented (as industry insiders claim), retailers (e.g., Walmart, Kroegers, Safeway, Carrefour) and food processors (e.g., Nestle, Kellogg's, Heinz) will likely maintain the upper-hand in negotiating contracts. In a sense, they will be in the best position to extract profits out of the honey *value chain*. For honey producers and other agricultural suppliers to benefit from the value chain economy, they will have to either pursue smaller, niche markets, or organize and consolidate in ways that may be difficult for competitive and independent-minded producers.

Producers could either become integrated into efficient supply operations or marginalized as a supplier of cheap honey. For example, in recent on-line Internet bidding contracts for large shipments of honey, buyers were able to get low prices for honey by partnering on massive contracts (thus raising the stakes for bidders), keeping the information flow between competing bidders to a minimum (they had only 30 minutes to complete the bidding), and maintaining an arms-length interaction with the industry. Honey buyers seek to drive down their purchase cost for industrial honey and perhaps in the future, on packed honey as well.

The honey value chain, therefore, begins with bees and boxes, and ends when honey is purchased by consumers as a spread, as a sweetener for tea or coffee, or as an ingredient in a health food product or cereal. To consider how retailers add value, evaluate the worth of a one-kilogram jar of honey in a warehouse compared to its value on a shelf at eye-level in front of a consumer with cash in hand. Value chains exist regardless of the nature of the companies and industries involved in them. However, some chains are more cohesive, harmonious, organized, and efficient than others. Other chains may be fragmented, antagonistic, disorganized, and possibly counterproductive. Based on the discussions undertaken for this study, the honey industry appears to be a relatively fragmented value chain with elements of antagonism and disorganization.

A futuristic vision of the honey industry could reveal a few global honey value chains supplying packed and industrial products to a consolidated group of retailers and beverage and food processors. Beekeepers might negotiate flexible contracts (necessary with yield variability) weeks or months in advance of shipping dates. This would offer some degree of stability allowing for investment and increases in efficiency. Obviously contracting already exists, but it is generally executed on a spot or short-term basis as opposed to a multi-year basis. Under a longer-term contracting scenario, greater certainty for producers may coincide with slimmer margins and larger volumes.

Carrot producers in California provide an example of this phenomenon.[9] Two major California companies account for over two-thirds of the total carrot production in the United States. Massive and expensive field and packing machinery is viable because the packers own and contract vast fields of carrots. The cost-saving aspect of consolidation rings clear in California where an individual harvesting machine might tend to 5,000 acres of carrots while in regions of western Canada, harvesters are more typically applied to less than 100 acres. State-of-the-art

cooling and transport equipment to ensure product quality, along with consistent year-round shipping and efficient marketing make these companies highly successful. When a carrot producer has the right soil conditions and good management skills, they tend to prosper. When they do not, they get out of carrot production. The industry operates on thin margins that limits the number of competitors in the market, but with larger volumes, viable profits are generated. The only options to this approach appear to be found in significantly smaller niche markets.

In looking at the reduced numbers of individuals involved in the honey industry, it appears that a transition is still underway. When stability returns, the overall health of the honey value chain will have to provide a reasonable level of prosperity for each participating industry group (i.e., suppliers, beekeepers, packers, and marketers). Looking at the far end of the chain, it is obviously in the interest of beekeepers to see retailers prosper on honey sales. If they don't (i.e., if honey margins aren't sufficient compared to other shelved goods or if turnover is uninspiring), retailers may suffer temporarily, but this suffering will quickly be transferred to the front end of the honey value chain (i.e., beekeepers and honey packers).

While competing interests and a lack of consensus in industry may, to some degree, lead to fragmentation, industry associations (i.e., Alberta Beekeepers Association, American Bee Federation, and packer organizations) demonstrate that business is not just about competition; it is also about cooperation, collaboration, and collective progress. "Business is cooperation when it comes to creating a pie, and competition when it comes to dividing it up."[10]

A value chain perspective may be a necessary approach in building trust and value in the honey industry. Stronger value or supply chains in the honey industry may be needed to compete more effectively *for* customers and consumers and *against* products like high fructose corn syrup and jams. However, solutions to existing problems can only be arrived at through industry input and action that goes far beyond the scope of this paper. The purpose of this paper is to interpret the state of the industry and to evaluate the competitive forces that are shaping it (i.e., the reality check). Through an improved understanding of the industry and the factors that influence it, it becomes more feasible to exploit opportunities, minimize risks, and envision ways in which industry leaders can work towards a healthier local, and possibly global, honey industry. In short, it becomes possible to expand the pie while continuing to compete for pieces of it.

Blind Spots and Mind-Sets

In a car, the blind spot is the viewing space that goes unnoticed (between the side and rearview mirrors). In business, blind spots lead to business errors either because decision makers feel comfortable with their level of understanding or, for some reason, they can't get the information they need when they most need it. Decision making always entails risks; in general, the less information the decision maker has, the higher the risk of making a wrong decision.

Intuitively, decision makers that are suspicious or aware of blind spots try to get rid of them by learning more. An open mind helps; a mind-set that one knows all things important does not help. For example, in the honey industry, mind-sets evolve by observing the honey market over a long period of time and coming up with fixed attitudes of the industry's situation and fate. Mind-sets can assist beekeepers and packers, who know the industry well, to quickly interpret "the situation" based on only a limited amount of available information. But mind-sets can also be

liabilities.

In short, blind spots and mind-sets work together. Mind-sets create the opportunity for blind spots to exist. Avoiding the potential pitfalls requires an open mind and an awareness that *we do not know it all*. This applies to corporate decision makers, entrepreneurs, and industry analysts alike.

F. Report Organization and Metrics

This introductory chapter serves to orient and introduce the reader to the subsequent sections of this report. Chapter 2 presents data on the global honey industry and information relevant to the US, Canadian, and European honey markets. A more detailed statistical review is presented in Appendix II. In Chapter 3, we examine consumption patterns and look at substitute products for honey, such as sugar and corn syrup, that can potentially reduce the overall worth of the honey industry or value chain. Chapter 3 also looks at complement products like health foods, cereals, and cosmetics that can expand the worth of the honey industry. Chapter 4 shows the impact of honey buyers and suppliers on competition in the global honey industry. A detailed survey of buyers and packers in North America and Europe is presented in Appendix I. In Chapter 5 we investigate competitive rivalry that exists among different production and marketing regions of the world. The final section of the report, Chapter 6, provides a comparative perspective of the competitiveness of Argentina, China, Alberta, and the United States.

Weight measurements, used extensively throughout this document, are generally reported as they are in the honey industry. In speaking about production costs, pounds are the standard unit of reference while in global trade, metric tons (MT) are used. As most readers are aware, one kilogram equates to 2.205 pounds while one MT equates to 2,205 pounds. Lastly, one hectare (ha) is equivalent to approximately 2.5 acres.

Chapter 2. Honey Industry Review

This section reviews honey consumption, global production, and trade. A more detailed global statistical overview is provided in Appendix II.

A. Honey Consumption

Consumption of honey appears to be price inelastic — as prices rise, consumption doesn't decline significantly.[11] Economic research also indicates that consumption is income elastic — as people earn more, they spend proportionately more on honey — which is a positive note for the prospects of honey consumption in China. Less fortunately for producers and packers, when wholesale prices drop, retail prices don't seem to follow the same downward trend.[12] This relationship is discussed in chapter 4.

Honey consumption in industrialized countries such as Canada and the United States appear to be fairly stable with some expansion in the industrial market that includes portion packs and bulk honey used as an ingredient in processed foods. Consumption in the US has been at or near one pound per person since 1966 while Canadian consumption was closer to two pounds. Consumption in the UK, at 0.6 pounds, appears to be slowly declining.

Recent and continuing trends towards healthier eating may have a negative impact on the consumption of sweeteners, with the possible exception of honey and a few sweeteners maintaining a relatively healthy image. Public perceptions of honey as a natural and healthy product are reflected in studies that show consumers expect to pay up to 14 percent more for products sweetened with honey over those sweetened with corn syrup.[13] For this reason, some food processors may turn to honey to replace refined sugar in their products in a bid to portray their products in a healthier light. Further increases in honey consumption may be driven by the development of new uses for honey as an ingredient in both conventional and functional foods, or by emerging research that may highlight honey's health benefits.

In a 1985 study[14], 33 percent of Americans used honey at least once a week, 23 percent used honey once every two to four weeks, while 18 percent used honey once every two months or less. The study also indicated that:

- honey use increases with household income and with education level,
- female shoppers tend to buy honey more often than male shoppers,
- married consumers use honey more often than single consumers,
- seventy-four percent of table honey is purchased in supermarkets,
- liquid honey is the most popular type consumed in the US,
- consumers prefer gold-coloured honey over amber or yellow-coloured honey,
- clover and orange blossom honeys are the most recognized types, followed by sage and alfalfa honeys.

The same study found that roughly one in four Americans do not consume honey because they:

- have no use for it and/or haven't thought about it,
- don't like the taste,
- avoid it because of medical advice (concerns not stated in report).

A 1998 study of consumer preferences examined the premiums consumers would pay for various honey characteristics.[15] Results from the study reveal "that honey products are highly differentiated and that consumers are willing to pay substantial premiums for particular honey characteristics, especially unique floral sources...The small market share of these floral sources may indicate the need to promote their special flavour characteristics to a larger group of consumers. The study reported the following conclusions:

- larger container sizes do not carry a significant discount,
- compared to a glass container, consumers pay $0.24 less for a squeeze bottle, $0.22 less for a plastic bear, and $0.20 cents less for other plastic containers,
- compared to liquid honey, consumers will pay $1.45 more for comb honey and $0.45 more for creamed or spun honey (however, markets are smaller as noted below),
- consumers will pay $0.26 less for generic or store brand honey versus major brands,
- versus regular blended honey, consumers will pay 9 percent more for clover honey, 11 percent more for orange blossom, $0.55 percent more for unique monofloral honey, $0.08 more for clover honey, and $0.10 more for orange blossom honey.

In the 1994/95 Nielsen Retail Scanner Data, the following findings were stated[16]:

- 54.2 percent of total dollar volume of honey is sold in glass containers, 19.1 percent in squeeze bottles, 15.5 percent in plastic bears, and 11.2 percent in other plastic containers,
- 90.4 percent of total dollar volume of honey is sold as liquid while just 8.9 percent is sold as creamed and 0.7 percent is sold as comb honey,
- 27.6 percent of total dollar volume of honey is sold under generic or store brands,
- 47 percent of total dollar volume of honey sold is from clover, 3.4 percent is from orange blossoms, 1.1 percent from unique monofloral sources, and 2.7 percent is from other floral sources (presumably the balance of honey is marketed as a generic product).

B. Statistical Review

Table 2.1 indicates the average annual shipments of honey (covering the five-year period from 1994 to 1998) for the ten largest world exporters of honey.

Table 2.1. Average annual honey exports from 1994 to 1998 for the ten largest honey global exporters

Exporting Country	Honey Exports [in thousand metric tonnes (MT)]
1. China	just over 102.2 (about 225 million pounds)
2. Argentina	62.4
3. Mexico	30.3
4. Germany	14.3
5. Australia	13.6
6. Hungary	13.5
7. Canada	8.5
8. Spain	5.5
9. United States	3.9
10. Turkey	2.7
11. All other countries not included in the top ten	51

Although honey exports from China increased fairly steadily between 1989 and 1994, they have since been decreasing to levels close to those incurred in the early 1990s. China does, however, maintain dominance in the Japanese market with an average annual export volume of nearly 27 thousand MT reported between 1994 and 1998. Argentina, on the other hand, has experienced fairly consistent growth in export volumes from 1989 to 1999. China and Argentina have therefore established themselves as the leaders in honey exports and will receive considerable attention in this report.

Other countries with smaller export volumes may not appear to be a threat based on figures in Table 2.1. However, certain growth figures suggest otherwise. Vietnam, for example, has shown explosive growth. In 1989, it exported 290 MT; in 1998, it exported over 2,400 MT. These figures are questioned by many in the industry who believe Vietnam's potential as a honey exporter is greatly limited. Some suggest that sales from Vietnam may be derived from Chinese sources. Furthermore, the country's mainly bakery grade honey does not compete directly with Alberta's white honey table or medicinal honeys.

The top five honey-importing nations are Germany, the United States, Japan, the United Kingdom, and France. While Canada has a relatively small import market, a fairly significant jump in imports was experienced between the 1989 to 1993 period and the 1994 to 1998 period. The actual percent increase, calculated at 248 percent, may have been skewed by the imposition of the 1995 Chinese Suspension Agreement. Over the same period, the United States experienced 95 percent growth in imports while France's import volume grew by 62 percent. Growth was less significant in Germany (33 percent) and the United Kingdom (22 percent). Japan actually imported less honey (-2 percent) in the 1994 to 1998 period than it did for the earlier 1989-1993 period.

Canadian honey exports continue to favour the US over the European marketplace. In 1999, the US imported 9,800 MT of Canadian honey in contrast with 33,000 MT from Argentina and 17,300 MT from China. Mexico recorded exports of 3,150 MT of honey to the United States in the same year. Mexico's declining shipments in the US are partly explained production problems related to tracheal mites and Africanized bees. Their increased export volumes in Europe arise from a favourable exchange and lower tariff rates that improve their price competitiveness.

The major suppliers to the German market, in order of volumes exported in 1999, were China, Mexico, Argentina, Turkey, Uruguay, and Hungary. Reliable volume figures for individual countries exporting to the United Kingdom and France were unavailable. Dollar values, however, reveal that China has dominated the UK honey import market since 1992. In 1998, China delivered approximately $10 million US worth of exports; Australia, Mexico, and Argentina each shipped between $2 million and $3 million US. Top exporters to France in 1998 were Germany, Spain, Hungary, Belgium, and Argentina (ranked in descending order relative to the value of shipments). Germany's exports to France totaled just over $7.5 million US, Spain shipped $6 million US, with the remaining exporters sitting below the $4 million US level.

In terms of colony counts, China had the largest number in 1998 at 6.3 million. Chinese beekeeping operations are very small compared to other major exporters with many beekeepers maintaining between 40 and 100 hives. Paralleling a decline in exports, the number of colonies in China slid from a reported 7.4 million in 1989 to 6.3 million in 1998. The number of commercial operations involved in export is believed to be considerably less than this figure. Over the same period, the number of hives in Argentina increased from 1.5 million in 1989 to 2.2 million in 1999. The increase from the first to the second half of the 10-year period amounts to a significant 23 percent. Mexican colonies declined from 2.4 million in 1989 to 2 million in 1999.

Colony counts in the United States and Germany have been declining fairly significantly over the 1989 to 1999 period — from 1.6 million to 910 thousand in Germany and from 3.4 million to 2.6 million in the United States. Over this period of time, Canada's colony count has held fairly steady around 550 to 575 thousand colonies.

Chapter 3. Substitutes and Complements

When honey producers or packers think of competition, they often think of fellow producers or packers vying for the same contracts. Competitors, however, come in a variety of formats. Knowing all the competitors and the threats they pose can provide advance warning and valuable insights at an enterprise or industry level. A grocery shopper, for example, may pass on a jar of honey to purchase a discounted jar of jam. Bottlers may want to put honey in a ginger beer soft drink, but a high price may steer them towards high fructose corn syrup. A political decision in the United States may lower the price of sugar and increase the threat it poses to sales of honey products. On the other hand, a grocery shopper may pick up a box of tea and then, if prompted appropriately, think of purchasing honey to sweeten it. Consumers seem to be increasing their purchases of cereal sweetened with honey. In a recent investigation conducted for this study, 20 to 25 percent of dry cereal in a major food retail outlet contained honey. The idea that honey producers or packers only compete with other producers or packers is a limited vision of what competition entails.

While subsequent parts of this report expand on other aspects of competition, this section focuses on substitutes and complements. Honey substitutes are products that compete with table and industrial honey. As the term implies, these products can be substituted for one another depending on factors such as price, taste, availability, and quality. Jellies, jams, high fructose corn syrup, and grape concentrates are all potential substitutes for honey.

Complements are products that can be used or combined with honey to add value. These products could be tea, cereal, sweet-and-sour sauce, cough syrup, etc. Complements, therefore, forge an alliance with honey in the competitive environment.

A. Substitutes for Honey: Industrial and Packed Products

A 1986 economic study involving over 3,000 households revealed that consumers consider syrup, molasses, jelly, jam, and honey to be items that can substitute for one another.[17] The study calculated that a price rise in any of these sweet spreads leads to a drop in consumption of that product and an increased consumption level of the other sweet spreads. Therefore, in general, honey appears to compete with other products in satisfying consumer cravings for sweetness. There will always be a selection of people that can only be satisfied with honey, but currently, this appears to be the exception rather than the rule.

There are a number of scenarios that may unfold when there are changes in the price or demand for products that can be substituted for honey such as:

- If a new technology lowers the production cost of a substitute sweetener, then honey becomes a relatively costly and less appealing product.
- Although government protection maintains high prices for sugar in the United States, there is always the concern that if changes are made to lower barriers (as described below), the price of sugar would decrease, and, then, so would the price of sugar-based products like jams, jellies and sweetened cereals.

- Changes in exchange rates can change the price of products from different countries.
- Scientific research could lead to increasing consumption levels of honey by uncovering its health attributes. When this is not achieved, the competition posed by alternate sweeteners and spreads is more intense.
- Scientific research could lead to developments that have, in the past, created new substitute products such as aspartame (e.g., Nutrasweet). Scientific research could also increase the appeal of sugar, for example, by fortifying it with Vitamin A.[18]

Clearly, there are many factors and issues and public perceptions that can hinder or help the entire honey industry. Monitoring these issues and developing responsive strategies is the concern of the industry at large. It may also be an area of interest for joint action at the international level. The remaining discussion on substitutes for honey will concentrate on sugar, corn syrup, jam, and jelly as competing products.

Industrial Markets: Focus on Sugar and Corn Syrup

In developed or industrialized countries world-wide, the per capita consumption of refined sugar and other sweeteners is declining while consumption of corn sweeteners (e.g., high fructose corn syrup or HFCS) is rising. Figure 3.1 depicts this decline in per capita consumption of sugar in the US from 1966 to 1998, and shows the steady rise in consumption of corn sweeteners during this period. Honey consumption, on the other hand has remained stable.

Other global data show a wide range in per capita consumption of sweeteners. In the United States, each person consumes, on average, more than 71 kilograms (157 lbs) of sweeteners per year; Canadians consume 44 kg (97 lbs); and Chinese consume a meager 8 kg (18 lbs). The US consumption of high fructose corn syrup, first used in manufacturing soft drinks in the late seventies, has skyrocketed to its current level of 27 kg (60 lbs) per capita annually.

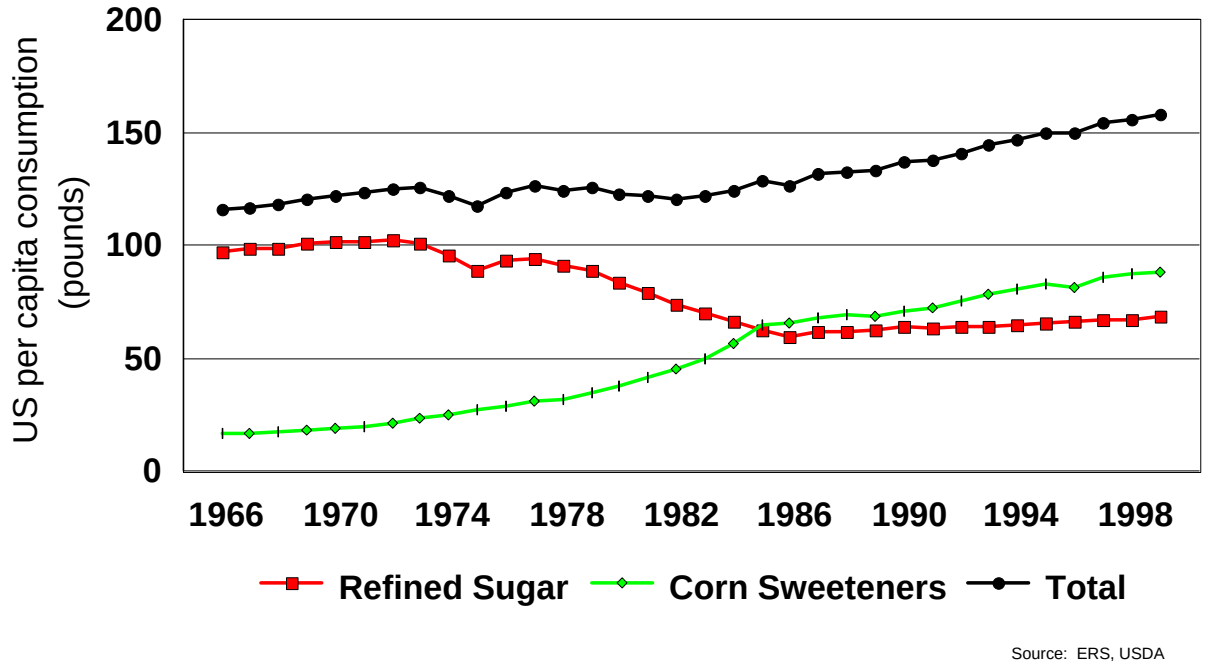
Studies conducted from 1992 to 1995 suggest that in the United States, beet sugar and HFCS producers have the lowest production costs in the world.[19] High fructose corn syrup is the lowest cost sweetener on the market. This fact, along with the increased consumption levels makes HFCS a formidable competitor for honey as an industrial sweetener.

With the price of sugar maintained at artificially high levels in the United States through tariff rate quotas, the current threat that sugar poses to the honey industry could grow in the years to come because of the potential for sugar prices to fall. At present, however, these high prices may help honey sales where consumers substitute honey for sugar. The future outlook is that US sugar prices will decline in the coming years because of pressure from the World Trade Organization on the US sugar program and increase in world sugar production.

A 1993 General Accounting Office (GAO) report estimated that the sugar program cost US domestic users of sugar and other sweeteners about $1.4 billion US (1991 dollars) annually and found that the program primarily benefited US sugar producers and manufacturers.[20] The GAO recommended that Congress gradually lower the loan rate for sugar and directed the USDA to adjust import quotas in order to achieve a lower US market price.

A further threat to US sugar prices exists in the form of cheap sugar imports from Mexico. Under the terms of NAFTA, Mexico has unlimited, duty-free access to the US sugar market in 2008 and increasing access until that time. Assuming Mexico maintains its current export markets and volumes, it could potentially export up to 1.5 million MT to the US by 2008.

Figure 3.1. US Consumption of Sugar and High Fructose Corn Syrup



An over-abundance of sugar on the world market is putting further downwards pressure on sugar prices as indicated in Table 3.1. Total world raw sugar production reached 133.1 million MT in the 1999/2000 crop year, an increase of two percent over the 1998/1999 season. Production increased for the sixth straight year, the longest recorded period of consistent growth since the late 1960s. Production and high stocks have prolonged the world oversupply situation which helps explain low world sugar prices.

World sugar production for the 2000/2001 crop is forecast by the USDA at 124.4 million MT, down 6 percent from the record level set last year and the lowest amount in four years. Consumption is forecast at 129.5 million MT, up one percent from the previous year. The decrease in supply should allow both exporters and importers to bring down some of the severely high stocks that accumulated last year.

Table 3.1. World production, supply, and distribution of sugar.
('000 MT)

Year	Beginning Stocks	Production	Domestic Consumption	Ending Stocks	World Price (US¢ per lb`)
1993	21,570	109,731	112,054	19,247	10.03
1994	19,228	116,145	112,883	22,490	12.13
1995	22,490	122,304	118,455	26,339	13.44
1996	26,339	122,921	122,875	26,385	12.24
1997	26,385	125,239	125,832	25,792	12.06
1998	25,792	130,669	125,818	30,643	9.68
1999	30,643	133,143	130,793	32,993	6.54
2000(est.)	32,993	124,386	131,965	25,414	6.1

SOURCES: USDA and Australian Bureau of Agricultural and Resource Economics
NOTE: Domestic consumption statistics include an allowance of roughly 2 percent for unrecorded trade.

Some experts estimate that world sugar prices could rise by 40 percent if trade distorting policies in the US, the EU, and elsewhere were eliminated. Using a ten-year average of $0.2355/kg ($0.1068/lb) as the world price for raw sugar, a 40 percent increase would result in a price of $0.3296/kg ($0.1495/lb). This would mean a 32 percent drop in US sugar prices from their ten-year average of $0.4858/kg ($0.2203/lb).

The bottom line is that US sugar prices will continue to face downwards pressure as a result of both low world prices and the pressures brought on through the US sugar program reform and the impending increase in Mexican imports. Prices may drop as much as 10 percent in the next few years and perhaps even further after 2008.

Analysis of historical sugar and honey prices indicates that there is a strong positive correlation between average honey prices and the prices of US refined beet sugar. Although there has been some lag, honey prices generally follow the trend set by US sugar prices. While there are many factors determining the price of honey, a predicted decline in sugar prices may lead to pressure for future honey prices to also decline in the US market. As Canadian sugar prices are already at lower world prices, relatively less downward pressure should unfold in the domestic honey market.

Packed Markets: Focus on Jams and Jellies

As mentioned earlier, honey competes on the grocery shelf for consumer purchases alongside other sweet spreads like jam, jelly, and preserves. The International Jelly and Preserves Association reports the following[21]:

- The number of new jam, jelly and preserve products introduced in 1997 was 240.
- The market for preserve products has been stable for more than 20 years.
- In the US, approximately one-half billion kilograms of fruit spreads are produced annually

with per capita consumption at approximately two kilograms per year (compared to consumption of honey at just under one-half kilogram or one pound).

- There are 54 calories per tablespoon (15 mL) of jam (compared to 50 calories for sugar and 64 for honey). However, on a volumetric basis, honey is sweeter than sugar.

In 1999, US sales figures of fruit spreads (comprising jams, jellies, preserves, and fruit butters) experienced a two percent decline over 1998 figures. However, jam and marmalade sales were both up at 2.1 and 0.5 percent above 1998 figures, respectively.[22]

In 1999, approximately 30 percent of US households purchased jam, 37.5 percent purchased jelly, and 33.3 percent purchased preserves. Each household was reported to spend, on average, $4.34 on jam and $3.60 on jelly. More than 20 percent of these purchases involved a "deal" (e.g., coupons, or displays).[23] Approximately 95 percent of jam, jelly, and honey (as a category of spreads) was purchased at supermarkets in 1998 with sales of $808 million US.[24]

In contrast with large multinational brand names on jams and jellies, honey labels are generally those of national or regional packers. Multinational food companies have, on some accounts, taken a close look at investing in the honey packing industry but viewed the profit potential as too low to warrant sufficient interest. It is possible that such companies consider the competitive state of the honey industry (resulting in low profit margins), the difficulty of differentiating honey products, and the problems packers are currently facing as reasons for not entering the industry. These problems may inhibit vertical integration of the industry.

B. Complement Products for Honey: Industrial and Packed Products

Most of the food products that can be sweetened with honey, like tea and cereal, can also be sweetened with sugar, corn syrup, etc. With considerable competition from other sweeteners the honey industry may have to go out of its way to gain inroads into new consumer markets. If, for example, the industry can convince grocers to place honey next to teas and coffees on grocery shelves, it is no longer in competition with peanut butter or syrup. And consider the future of the honey industry if all North American coffee drinkers who sweeten their coffee with sugar switched to honey: a 1.3 billion kilogram (just under 3 billion pounds) honey market would emerge. Under this scenario the North American honey market (excluding Mexico) would expand eight-fold. Unrealistic as this is, it nonetheless conjures interest in examining some potential complementary relationships for honey.

For Alberta, the focus will be on finding products that go with high quality white honey. A major cough syrup product currently on the market uses quality white honey as an ingredient. Among large retail grocers, it would seem natural that the growing health food section should contain some complementary products for honey. However, during a recent trip through the health food section of a major Edmonton-area food retailer, a number of “healthy” alternative sweeteners (like fruit sweeteners and barley malt) in glass jars were stacked on the shelf while honey was not. In most cases, the sweeteners were packaged in jars resembling the old standard containers for honey.

Clearly, there are many opportunities for honey products in unique formulations, in health food sections, and in unique positions on retail shelves. Individuals and organizations from the honey industry are in the best position to stumble across, invent, or popularize different uses and promotional avenues to increase honey consumption.

C. Honey and Honey Substitutes and Complements in an Edmonton-Area Supermarket

A recent visit to a major grocery retail store in the Edmonton area created some interesting observations. A similar outing was undertaken by Alberta Agriculture, Food and Rural Development's apiculture specialist Kenn Tuckey in February 1995. Some comparisons between the visits of 1995 and 2000 are included in the following key findings (all values are in Canadian dollars):

- Honey in the deli department is used to add value to ham luncheon meat. It seems to elevate the price $0.10 to $0.20 per 100 grams (more when compared to lower-valued "cooked ham") bringing it into the price range of other specialty hams like black forest ham.
- In the salad dressing section, honey is found in roughly 10 percent of dressing. Honey mustard being the most popular format.
- While there are a number of sauces containing honey, Chinese sauces like Szechuan and Sweet 'n Sour all had honey listed as an ingredient. Among BBQ sauces, about 10 percent contained honey, again mostly in honey-mustard combinations. The mustard section was not reviewed, however, when Kenn Tuckey went on his 1995 trip, he found three mustard products containing honey.
- The particular store visited for this analysis had a large health food section with 74 organic or health cereals that covered one section (6 rows, roughly 10-12 feet long). Eleven of the cereals had honey as an ingredient (15 percent). Among the health food drinks on display, most were flavoured with sugar cane juice. Fruit concentrates were the second most used sweeteners. Only one was sweetened with honey. Honey was either not clearly visible or present on any remaining shelves in the health food section of the store although some honey substitutes were available including blackstrap molasses (priced at $15.80 per litre), black cherry sweetener ($54.00/litre), barley malt ($15.46/litre), organic brown rice syrup ($15.50/kg or $7.00/lb), grape juice-concentrate sweetener ($14/kg or $6.35/lb), and a granulated cane sugar ($7.25/kg or $3.30/lb). This observation suggests that growth in the health food area may give rise to both opportunities and threats for honey.
- In 1995, Tuckey found five cereals with honey in the title. Today there are almost six times as many. In the 2000 supermarket analysis, twenty-nine out of 120 to 150 mainstream cereals (20-25 percent) on the grocery shelf were sweetened partially with honey. Most of the cereals advertise "honey" in the name or convey a graphic message that links the cereal to honey. Granola cereals are typically sweetened with honey. However, in most cases, honey is found far down the ingredient list, below a primary sweetener like sugar or high fructose corn syrup.
- In the bulk food section (an area that seems to be experiencing growth), consumers could scoop jam, jelly, peanut butter, mincemeat, and pickles from large buckets at discount prices. There was also a honey dispenser where the price of liquid unpasteurized honey on

sale was $0.29 per 100 grams ($1.32/lb). The regular price was $0.49 per 100 g ($2.22/lb).

- Jams and jellies occupied a full section (six or seven shelves). Peanut butter took up just over four shelves while honey occupied just under three.
- Of particular interest in the honey section were three small private labels branded as Australian honey. In discussions with honey buyers and through observations at the grocery store, it seems that Australian honey is considered a quality, niche honey growing in popularity in Germany and England, and possibly in Canada. The cost of these "Australian" honeys was $9.30/kg or $4.22/lb while generic private label honeys being sold for between $5.50/kg and $6.00/kg ($2.49 to $2.72/lb).
- With generic honey available at low prices, it may be increasingly difficult to sell niche floral honeys. If the price gap between niche and commodity-type honeys, consumers may be more apt to purchase costlier varieties.

Chapter 4. Buyers and Suppliers

Honey producers, packers and marketers negotiate with *buyers* for sales and with *suppliers* for equipment and input purchases. Honey buyers and industry suppliers have bargaining power that can affect honey industry profits. This bargaining power may include:

- negotiating honey prices down or delaying payments,
- having packers or producers maintain honey inventories at their own expense,
- increasing the quality standards for honey without increasing prices (e.g., demanding implementation of food safety systems like HAACP that may be costly to implement or specifying reductions in permissible maximum residue levels), and
- increasing the price of input supplies (or reducing the quality of supplies).

Buyers of honey include consumers, retailers, wholesalers, and packers. Suppliers to the honey industry may include manufacturers of honey-producing and packing equipment, bee packages, chemicals, or feed supplies, etc. Some buyers focus solely on honey, such as packers and honey wholesalers; others purchase a broad range of goods. On a similar note, some suppliers deal only with the honey industry providing items like bee packages or extraction equipment; others focus on a broad range of customers such as barrel suppliers. In general, companies whose profits are closely tied to prosperity in the honey industry (e.g., those supplying extraction equipment) are more limited in their ability to push their prices up as this lowers the producers margin and ability to purchase inputs.

Power of Negotiation

Before examining honey buyers and suppliers in the industry, a brief focus on the power of negotiation may help clarify the issues subsequently discussed. Nalebuff and Brandenburger provide a perspective on the issue of power in price negotiation.[25] Although their illustration of economic "game theory" appears basic, beekeepers and packers may find it reflects some real life experiences.

> *A teacher distributes a 52-card deck to his 27 students. One student named Adam gets 26 black cards; the remaining 26 students each get one red card. With $2,600 in his hand, the teacher tells Adam that he will give him $100 dollars for each pair he brings to his desk. However, each pair (for example, two jacks) must comprise one black card from Adam's pile and one red card from a student. Adam, therefore, must negotiate a price for each of the red cards held by the other students before he can proceed to the teacher's desk and get $100. Repeated attempts of this experiment generally result in a 50-50 split of the $100 between Adam and each student. When Adam negotiates, the students know Adam needs them as much as they need Adam and they can hold out until Adam gets to what is believed to be a "fair" price.*

> *In a second experiment, the teacher removes a few black cards from Adam's stack. Now, when the students holding red cards negotiate a price with Adam, they are uncertain that their card will find a matching black card (they can no longer simply wait for a better price if they don't see Adam's initial offer as fair). The uncertainty works in Adam's favour. Adam can now bid the amount paid to each student down to a much lower level ($10 to $20 was the price range in actual experiments), netting between $80 and $90 for Adam when he hands each pair to the teacher.*

In the second experiment, Adam may have initially believed that paying $40 or even $30 for a red card was a good deal. If he faced a weaker negotiator who went as low as $20, his expectations may have been revised so that $20 became the going price. With a $20 benchmark, he may have tried to increase his gains, pushing the price down to $10. With the supply of red cards exceeding the demand and with uncertainty among the students, Adam gained the upper hand in negotiations.

In the real world, there are many factors affecting the balance of bargaining power, but the principles of negotiation remain the same. While the way Adam is "playing the game" may bring up some issue of ethics, he is, like the "red-carded" students, simply attempting to maximize his gains. There is, however, one significant difference between the game example and the real world. The total pay-out for the card game remained constant regardless of the result of the price negotiations. In the real world, price negotiations can affect the value or total pay-out of an entire industry. Profits can be transferred from the honey industry to outside buyers such as retailers and food processors, or to suppliers.

Also, in the real world, there are costs to be dealt with which include depreciation on assets, debt payments, unpaid labour and the more obvious direct input costs. The cost of production puts a floor on price discovery that may be breached in the short but not the long-term unless governments intercede. The issue of cost-competitiveness is discussed in chapter 5.

A. Buyers

Real world business negotiations have been changing rapidly with the advent of the computer and online Internet bidding processes. Traditionally, bulk industrial honey contracts may have been negotiated between buyers and suppliers over a month-long period; today they may be resolved in a 30-minute period. In the process, the old personal relationship approach to business has, by industry accounts, been cast aside. With a new type of buyer in both retail packed and industrial markets the game has a new set of rules. This section of the report discusses factors that are causing change among consumers, retail buyers, food processors, and packers.

Consumers Concerned with Price

Consumer habits and trends are changing in North America and around the world. For example, income is rising, meal preparation time is declining, and leisure activity is changing. Although consumers appreciate quality, many of those surveyed for this report said that price was the single biggest issue related to buying groceries. There are conflicting reports about whether niche honey markets are in decline. One observer stated that shelf space devoted to orange blossom honey in Texas has declined significantly. This suggests that consumers may be opting for lower-priced honeys over niche honeys owing to a significant price differential. If the price difference were not so large, it could be viewed as more likely that consumers would shift to niche honey as appears to be the case in Europe. Current discussions with buyers and packers indicate that price is invariably the critical issue in negotiating sales in the US marketplace.

Large Versus Small Chain Grocers

Retail buyers aim to secure the best (lowest) prices along with the highest possible quality. However, an interview conducted for this study uncovered other considerations of the retailer buyer. For example, a 300-store grocery chain in the northeastern US faces competition from Kroger, a larger chain grocer with 3,500 stores (2,319 supermarkets) nation-wide. To compete for customers, the smaller chain has been forced to renovate existing stores and open new ones every five years or so, incurring high costs in the process. To cover these costs, along with rising leasing rates and wages, the store relies on product margins and fees such as those for slotting products on grocery shelves.

Getting a Product on the Shelf

In general, slotting fees are reported to be between $10,000 and $50,000 per product (i.e., stock-keeping unit or sku) per year; honey is at the lower end of this range. Getting a food product on the shelf, however, is not just a matter of paying a fee. There is competition in getting products listed and those products that do make it still face the risk of being replaced by another food product.

The issue of the gap between producer and retail prices (and whether they move in tandem) warrants some investigation as it appears to be a source of animosity for the honey industry. One observer commented that while shifts in retail prices once paralleled shifts in wholesale prices, this no longer appears to be the case. US citrus growers provide an interesting case in point.

A recent US government study [26] revealed that while US citrus growers experienced an economically devastating season in 1999, it was one of the most lucrative years for the retail industry. Retailers were able to manipulate the prices paid for produce and control the inflated profits that were ultimately charged to the consumer. The same study revealed that:

> *Retailers practice what is called value-based pricing...This means they charge what consumers are willing to pay. Thus, retail prices are only partially driven by wholesale costs, and only one-fifth of increases in those prices may be passed on at the retail level...The bottom line is that rises or declines in the price received by the farmer usually do not immediately result in corresponding shifts*

> *at the retail level.*
>
> *...understanding how agricultural products are priced at the retail level is not to condemn retailers. Rather it reveals that they, like many producers, are operating in a climate of increased competition and consolidation. Retailers, on the other hand, are not totally unsympathetic with producer concerns and are seeking to use programs such as Fresh From Florida[27] and Farm Bureau's Good Check Out Day to more actively move Florida produce. The study has led to potentially valuable long-term dialogue between producers and retailers. In the meantime, it concludes that producers must acquire more power within the marketplace.*

While the Alberta honey industry has many distinguishing characteristics that contrast it from Florida's vegetable or fruit industry, the importance of gaining power within the marketplace is a theme that bridges many agricultural industries. With less money and the fragmented nature of many agricultural industries, strategic pursuits in agriculture tend to lag behind the strategic moves of large food processors and retailers.

The global coffee industry provides an example of an agricultural industry that could be characterized as generally cohesive and strategic in dealing with buyers. More skeptically, the coffee industry is referred to as a cartel seeking to control global production levels through a national quota system not unlike OPEC's approach to the oil market. Three years ago, production levels expanded significantly after a break-down in the quota system (Brazil, the largest producer, is known for its quota-busting tendencies), leading to significant reductions in price. As the 14-member Association of Coffee Producing Countries (ACPC) works to resolve current over-production problems, some buyers are not overly concerned as witnessed by comments from an American buyer:

> *The US imported 22 million bags of coffee last year and retail sales brought in about $18 billion. Roasters and importers can rest relatively easy, says Hank Dunlop, president of Atlantic (USA) Inc., a New York coffee merchant: "As long as everyone pays a similar market price, they're all in the same boat together." It's java addicts who are more likely to feel the squeeze of global price supports, when they have to fork over more cash to pay for their morning fix.[28]*

Private Label Products

In contrast to coffee, the honey industry faces a number of distinct challenges. Coffee arguably faces less competition from substitutes and has larger revenues to fund international initiatives than the honey industry. However, like the coffee industry and virtually all other food industries, the honey industry is dealing with the competitive challenge of growth in private labeling (i.e., retail store brands).

Private label products reflect a strategic move on behalf of retail buyers to increase their power in the market. The significant increase in discount-priced private label grocery products appears to

be the retailer's strategic response to a competitive situation and price-consciousness amongst consumers. According to *Progressive Grocer*, market share of private label products in US grocery sales is currently 19 percent and could become as high as 30-35 percent in the next five years.[29] According to one source, the private label market in Canada is likely to exceed US figures by five to 10 percent. In Europe, a 1999 Nielsen report revealed that private labels accounted for a 44.7 percent share (by volume) of the retail market in the UK, followed by Belgium with 34.8 percent, Germany with 33.5 percent, France with 22.2 percent and the Netherlands with 21.1 percent. One sign that the private label industry is still in a growth phase is the annual attendance at the Private Label Manufacturers Show which had 2,508 booths in 1999, a 20 percent increase from the previous year.

Recent observations, however, reveal a change in the nature of private label products. While these products are generally discount-oriented, many stores have been trying to elevate the quality and perception of private label brands in order to reap the premiums associated with creating a unique image (i.e., product differentiation) while producing lower-cost items than national brands. The USDA, for example, reports that "Not only do consumers buy the basic economy line products, but they often opt for private label premium lines of specialties and delicacies".[30]

Selling private label products can help retail stores achieve the following:

- improve their margins,
- create favourable in-store displays such as eye-level or end-row shelving and promotion opportunities,
- access superior industry information (close link to consumers and consumer data and better knowledge of production and promotion costs can help in price negotiations), and
- be less dependent on brand name suppliers to keep grocery shelves stocked.

In discussing retail buying power, it is important to reiterate that intense competition in the retail sector forces stores to keep their buying costs as low as possible (a pressure that is subsequently passed on to suppliers). Take for example, a recent news article[31] that reports on the demise of the Ontario-based Knob Hills grocery stores (pioneers of the no-frills grocery warehouse concept in Canada). Although the stores' declines were related to numerous factors, it was *competition* ultimately, that forced the 47-year-old grocery chain out of business. Similarly, Ro-Jacks, a small US food retailer, recently cited competition and rising labour costs as the rationale for their departure from the retail market. With margins narrowing, the industry has gone through a consolidation as described in chapter 1.

Packers and exporters, the more immediate "buyers" of honey, also play a role as a competitive force. Perhaps slightly more than a dozen honey packers in the United States could be considered major (US National Honey Board monitors 14 in its honey volume tracking study conducted by Research Dimensions, Inc.). Canada, on the other hand, has three major packers.

These buyers purchase honey from a number of different producers. In 1999, there were 29 Alberta beekeeper operations with over 2,000 hives; 12 had between 1500 and 2000 hives; and, 61 had between 500 and 1500 hives. There were 722 registered beekeepers in Alberta for that same year with more than 620 of these considered to be small-scale operations. According to industry accounts, these small scale operations rely on honey for only a fraction of their total income. These small producers can intensify competition when they pay less attention to their bottom-line in honey production than to their overall household income. However, small operators who pursue niche markets (e.g., farmers markets or specialty variety honeys) probably pose little threat to producers targeting larger retail or industrial markets.

Packers and wholesale honey buyers differ from retail buyers in that their prosperity is more closely linked to the prosperity of the national and global honey industry. When packers are "cooperatives," as is the case for major groups in the US, Canada, and Argentina, the rules are generally changed. Because of the prominence of cooperatives in these countries, a brief review of their production and marketing advantages and disadvantages is warranted.

Cooperatives

The advantages of being a committed cooperative or "coop" member include being able to purchase discounted beekeeping supplies (as the coops tend to purchase in bulk and pass the savings on to members) and avoid direct marketing costs and the effort of finding buyers. Large coops are formidable suppliers to retail and industrial markets and hence may have increased bargaining power. (Note: some independent packers also maintain large production volumes.) Furthermore, bargaining power for the coops is theoretically improved in the short term because the cost of honey (i.e., price paid to producers) is linked to the selling price for retail and industrial buyers. Under the coop framework, when selling prices drop, the coop's marketing agency is able to pay coop members less for their shipments (on final pay-out over an extended period), improving the coops bottom-line relative to independent packers whose costs are generally fixed. Theoretically, one could assume that with costs linked positively to selling price, the coops are in a position to be more aggressive in the market than independent packers, at least in the short run. With this potential advantage, and depending upon factors such as the coop's capital base relative to that of their competitors, member loyalty, the financial situation of its membership, cost competitiveness and marketing savvy, the coops could assume the position of price leader in the market.

However, if a coop continually undercuts its competitors, its members will realize a lower price than independent sellers unless they "meet" them in the market at the lowered price. In this scenario, over the long term, there would be little reason to maintain allegiance to the coop. In a declining market, the price that members receive may appear to be competitive because the pay-out is associated with the previous year's crop. In an appreciating market, the opposite holds true: final payments appear below existing market prices because of the time lag in payment and the rising market price.

It should be pointed out, however, that coops and independents alike can engage in price competition (or cannibalism as it is referred to elsewhere) in an effort to increase market share. The problems with this approach, as discovered with airlines in North America, and with other

industry sectors, is that it can lead to a lose-lose scenario. On the other hand, price competition may lead to consolidation which may thin the ranks but increase the size of producer and packer operations so they can compete more successfully in the retail and industrial environment. The potential for broader injury to the industry exists when consumers become accustomed to (i.e., demand) lower honey prices and when price-sensitive industrial markets revert to alternative sweeteners.

Having discussed some of the advantages and caveats of coops, a brief mention of one disadvantage relates to the coop's lack of control over honey shipments. The shipments they receive are typically on a quota basis, so they have limited ability to grow or shrink their inventories.

In Canada and the US, honey coops are the subject of constant debate. The issue appears to be more polarized in the United States than in Canada. While some rely on coops to market their honey production, others look at the coops as the reason the price of honey has sunk as low as it has recently. The ultimate beneficiary of this debate may be retail and industrial buyers who are able to negotiate better prices and terms among competing segments of the industry.

Current theory on competitive behaviour suggests that the greater the differences among competing organizations in the honey marketplace (i.e., coops, importers and exporters, individual producers and packers, and large and small independent packers), the greater the negotiating power for buyers (in this case, retail and industrial buyers of honey).[32] Differences amongst various marketing groups are observed in the following areas:

- pursuit of objectives—one company's objectives may be to maintain a family; another might be concerned with joint membership; a third might address market share or return on investment;
- structure of costs and payment, and
- distinct risk perspectives.

Factors Affecting Buying Power

Having briefly discussed honey buyers, it is time to discuss the factors that affect their degree of power in the industry. When honey inventories are very low, many of these factors will be reduced or muted. This aside, retail and industrial honey buyers are likely to have considerable power in pushing prices down under the following circumstances[33]:

- ***Where the buyers of honey are large but few, or when buyers purchase large volumes relative to what a honey producer, packer, or marketer supplies to the market***. This is the usual case for honey sales.
- ***When honey makes up a large proportion of what a buyer purchases***. In such cases, it becomes increasingly important for buyers to shop around for favourable prices.
- ***Where honey products are undifferentiated or commodity-oriented***. When honey is an undifferentiated commodity, it matters little who the supplier is (e.g., when honey is categorized on basic criteria alone, such as colour and moisture content). In such cases,

buyers have the advantage of being able to purchase from the lowest-cost supplier. Products can, however, be differentiated by the status (name) of the supplier, by floral source (clover, orange blossom, and Tupelo especially for diabetics[34] are consumer-recognized honeys) and possibly by region.

- ***Where there are few problems associated with switching from one honey supplier to another.*** One of the recent changes among retail buyers and food manufacturers is that, given the large volumes they maintain, they have distanced themselves from a buying relationship. In niche marketing, high quality and supplier name is important; in generic or private label marketing, price is the big issue although quality must be acceptable. This type of buying makes electronic bidding possible and switching from one supplier to another less problematic.
- ***Where there are low margins on sales***. When honey prices at the retail level results in slimmer margins (recall the low price for bulk honey in chapter 3), then buyers have greater incentives to lower the purchasing price.
- ***Where there is a threat of backward integration***. This refers to a situation where retailers supply their own private label brands. In this position, they can compete with branded products and effectively push industry prices down.
- ***Where buyers have full industry information about the demand for honey, actual market prices, and supplier costs***. Buyers who have this information can use it to drive producer's price down closer to their variable costs of production.
- ***Retailers have increased bargaining power because they are in a position to influence consumer purchasing decisions***. Product-positioning tactics such as end-of-aisle and eye-level shelving displays are used by retailers. Promotion opportunities and joint advertising specials are among the other tools retailers have to influence the amount and types of honey consumers may purchase.

These factors that affect the negotiating power of buyers help explain why beekeepers might see their selling prices pushed closer to their variable costs of production. However, where beekeepers sell products with some, or all of the characteristics of a niche product, then the bargaining power of buyers can be somewhat lessened. Of course, as with all niche products, the size of the market is greatly reduced.

In the last few years of the 1990s, a shift in the bargaining power of retailers and industrial buyers in Alberta and possibly North America was observed. Initially, as Chinese honey was limited in the US market through the Suspension Agreement of 1995, prices rose considerably. The large margins that Alberta beekeepers enjoyed (coupled with large yields in 1998) helped provincial beekeepers to increase their income, modernize their production facilities, and increase their hive counts.

By all expectations, the benefit of such a change should increase gross margins for beekeepers while making their operation more efficient through investment (i.e., more capital intensive and less labour intensive). On a less positive note, as beekeepers reduce their variable costs (with fixed costs likely to be rising), buyers with considerable bargaining may be in position to push prices down towards the beekeeper's lower variable cost level (i.e., the money required to pay for

inputs like labour, feed, repellents, etc.). Buyers usually find themselves in the power seat when supplies expand (i.e., when prices rise); however, when supplies contract, bargaining power shifts to the beekeepers, at least in the short term. If wholesale prices are high in the medium to long term, consumer and retail buyers can switch to alternative sweeteners.

The above discussion implies that as beekeepers rationally expand their operations (for business and tax reasons) and take advantage of high prices, they may sow the seeds for future price declines, especially under conditions of adequate or excess supply. However, beekeepers that do not invest and increase their efficiency may find themselves selling below cost and unable to compete with larger, capital-intensive operators. This reasoning suggests that, if the United States is successful in its dumping and countervailing allegations against China and Argentina (i.e., September 2000 filing), the longer term outlook may actually call for lower prices with more beekeepers exiting the industry. What is important is how global producers and traders respond to likely short term price increases.

B. Input Suppliers

The potential for input suppliers to raise prices or reduce the quality of supplies means that they are also in competition for industry profits. The key suppliers to the beekeeping industry provide packaged bees, queen bees, repellents, sugar, hive and packing equipment, and so forth. For suppliers, the honey industry is their *buyer group*. Suppliers will gain an advantage in competing for industry profits where the following factors are in place [35]:

- ***The suppliers are larger but fewer in number than the honey producers or packers they supply***. This provides market strength because an individual producer needs the supplier more than the supplier needs an individual producer (or possibly packer).
- ***The supplier's goods are important to the honey industry and difficult to substitute with other goods***. When beekeeper chemicals can be switched for generic active ingredients, as appears to be the case in Argentina and perhaps China, these costs will remain low and suppliers will lose a degree of market power.
- ***The honey industry is not a key sales group***. When the industry is the key or only sales group, as it is for products like bee repellents, packaged bees, or queens, and extraction equipment, then the supplier's prosperity is closely linked to the prosperity of producers and packers. Such suppliers are actually a part of the honey value chain and therefore cannot turn to other industries for product sales. Two good examples include honey extraction equipment companies like *Cook and Beal* and *Cowen*. Given the difficult state of the honey industry at present, orders of equipment from these companies have been reportedly postponed or canceled. Because of their personal and economic involvement in the honey industry, they are unlikely to put pressure on producer profits, especially during lean years. On the other hand, barrel suppliers may be able to increase prices because of increased demands from the fruit or oil industries. They are, therefore, freer to increase their barrel prices to honey producers without worrying too much about the effect of higher prices on sales.

- ***Government regulations give market power to certain suppliers***. Where governments legislate the use of certain chemicals or other inputs, they may be conferring a measure of market strength on certain companies, especially where patents provide such companies with protection from potential competitors (e.g., terramyacin).
- ***Labour is in short supply***. Although labourers are rarely thought of as suppliers, they actually are. They will supply their efforts where they consider it worthwhile for personal and economic reasons. Finding skilled workers is a major problem for beekeepers because they command a high wage level (especially when competing with other sectors for labourers in a booming economy) and are scarce in rural areas. Government policies and programs dealing with migrant labour can potentially help ease this problem.

C. Buyers and Suppliers

It can get confusing discussing buyers and suppliers because honey packers, for example, are both buyers of honey (from beekeepers) and suppliers of honey (to retailers and food processors). Nonetheless, buyers and suppliers represent two competitive factors that have significant impact on the prosperity of the honey industry. The value of looking at buyers and suppliers as separate groups is that individuals and organizations in the honey industry can work to develop specific strategies for dealing with them.

The fragmentation that may work against the honey industry in negotiating prices with buyers may also work against them as they negotiate prices with input suppliers. Consolidated enterprises (like retailers) have considerable power of negotiation in dealing with buyers and suppliers. One benefit that highly consolidated coops enjoy, as mentioned earlier, is their ability to purchase inputs in bulk.

Is there a limit to how far retail and industrial buyers can push down the sale price of honey? While circumstances differ between industrial honey and table honey markets, both markets desire a viable supply of honey. In the short run, company buyers may continue to see how far the price push can go; however, in the long run, it is *not* in the best interests of a honey-buying company to see honey prices fall to a point where honey production and processing enterprises no longer remain viable. Could buyers simply turn to foreign honey supplies (assuming that their prices still have downward potential)? Although possible, the urgent supply requirements of industrial buyers create a demand for honey that can be shipped within 24 hours. This creates some advantage for US honey suppliers, particularly those near large population centres.

Numerous reports indicate that US honey buyers often prefer purchasing honey imported from Argentina, Canada, or China because of lower prices (arising from lower production costs), animosity between US producers and buyers (packers and industrial bulk customers), and the inclination for many US producers to engage in spot selling rather than signing contracts for larger long-term agreements often facilitated by brokers. For additional buyers' perspectives, see Appendix I.

Chapter 5. Competitive Rivalry and New Entrants

Chapter 5 discusses the final two forces driving industry competition: rivalry between competitors and the possibility for new competitors (new entrants) to emerge. The objective is to create a broader understanding of competition in the global honey industry and to gain some insight into the future of global competition for honey markets.

Competition can drive beekeepers, packers, and marketers to lower costs, improve quality, and be innovative. Conversely, competition can lead to a reduction in the value of an industry, especially when price becomes the preferred competitive tool. When this happens, competition can become a personal affair because, ultimately, people determine how fierce competition is to become. Competitive rivalry, in this sense, can pit individuals, companies, and countries against each other, and as expressed by many individuals in the honey industry, lead to bitter feelings at the local and international level.

There are, however, a number of forces or factors that affect the degree of competitiveness in any industry. By considering these forces, competitive rivalry can become less personal and may lead to constructive industry dialogue and a stronger value chain approach (i.e., a whole industry approach to sustainable income or profit). In the honey industry, this is a formidable challenge because of the changes in global markets and competitors who span four continents. This section helps explain the intense competition in the honey industry from a theoretical and observational perspective rather than a corporate or personal perspective. The chapter also discusses Alberta's honey industry competitors from China, Argentina, and the United States with a brief look at some up-and-coming nations that are potential new entrants to global honey markets.

A. What Drives Competitive Rivalry in the Honey Industry?

The intensity of rivalry in any industry has a strong bearing on the profit potential of the individuals and organizations that comprise its ranks.[36] Rivalry tactics include price competition, advertising battles, introduction of new products, and improved customer service. Rivalry occurs when companies see a threat or an opportunity related to their position in the market. When packers, producers, or exporters compete intensely on price, the resulting action and reaction often leads to instability and squeezing of profits with an overall reduction in the value of the industry. Initially, the winners are those outside the honey industry: wholesalers, retailers, and consumers. However, with industry value and investment reduced, new products and service opportunities are less likely to occur (a lose-lose scenario).

By other avenues of logic, price competition today could eliminate some packers and producers from the market tomorrow, leaving the "winners" or survivors with fewer competitors, a greater market share, and an increased ability to elevate prices. The problem with this pattern of thought in a global context (as history informs us) is that price increases give rise to new competitors,

possibly from different corners of the globe such as Australia, Hungary, Vietnam, or India. Years of observing and studying competition in industries led Michael Porter to conclude the following:

> *Some forms of competition, notably price competition, are highly unstable and quite likely to leave the entire industry worse off from the standpoint of profitability. Price cuts are quickly and easily matched by rivals, and once matched they lower revenues for all firms...Advertising battles, on the other hand, may well expand demand or enhance the level of product differentiation in the industry for the benefit of all firms.*[37]

Twelve Factors Affecting Competition

Beyond price competition, competitive rivalry in the honey industry is largely shaped by the following twelve factors:

1. ***The number and location of competitors.*** World-wide, there are many individuals and companies that are capable of supplying honey to retailers or wholesale distributors. With a large number of suppliers to the market, there is an increased chance that there will be individuals or companies that will approach the market aggressively in terms of pricing and contracting. Where many suppliers are balanced in terms of their costs and supply capabilities, the chances for long term battles are increased. Bulk suppliers or packers that are in an isolated location may have the advantage of servicing local contracts (especially spot or urgent orders) with reduced competitive pressures. This is, however, more likely to occur in the industrial rather than in the retail supply market.

2. ***The diversity of competitors.*** In the honey industry, there are a number of different types of companies serving the market. As noted in chapter 4 the diverse objectives and strategies that companies pursue increase the potential for market instability. For one large cooperative operating in Argentina, for example, honey represents only a fraction of the goods it markets. With large capital reserves and established food marketing channels, one would anticipate that this cooperative would operate differently in the marketplace than competitors solely committed to the honey industry. Divergent competitors play with different marketplace "rules" and it becomes difficult to guess how the competition will act or react. What is sacrificed is stability in contract relations and pricing.

3. ***The nature of honey supply.*** Regardless of the hard work, hours, or investment that beekeepers sink into their operations, honey crop yields are strongly influenced by natural factors. Increased competitiveness among producers and possibly packers can take root when large supplies enter the market over a relatively short period of time. When producers are suffering from cash flow problems, competitiveness is likely to increase. In periods of severe production shortfalls or when disease and pest problems become more extreme, the opposite situation is likely to arise. However, now that honey has become a globally traded product, this scenario is less likely to arise as shortfalls in one region can be balanced off with high yields in other production regions. Nonetheless, weather and disease problems can affect supplies and thus influence price levels, profits, and competitiveness.

4. ***Cultural issues.*** Why was the threat of the Japanese automotive industry not picked up by the big three US car-making giants? Many believe it had to do with cultural divides: Americans did not understand the seriousness of the Japanese threat because they did not thoroughly understand Japanese industry. China is often viewed in the same light. What is the Chinese threat? One of the reasons we know so little about China is because of the extreme linguistic and cultural differences distinguishing it from Western cultures. This poor understanding of the competition can lead to increased rivalry simply because of a lack of communication and comprehension of the market. This document reflects a partial attempt to develop a better understanding of Chinese honey production. From a different angle closer to home, a cultural barrier can often be observed between producers on one hand, and processors, packers, and marketers on the other. A producer's world often involves dealing with production challenges that have little to do with the issues that confront marketers or packers. The different pressures confronting these two broad groups, along with different knowledge and experience, create fertile ground for the formation of barriers to communication, understanding, and appreciation of one another. Distinct mind-sets and diversity, as noted in chapter 4, increase competitive pressures and the opportunity for other external industries (like retailers and wholesalers) to win in price negotiations.

5. ***Entry barriers.*** There are a variety of reasons why it may be relatively easy to start up a business enterprise in one industry compared to another. Where fixed costs and other entry barriers are low, the level of competitiveness is expected to be high and potential for a company's profits are expected to be low. The reason is obvious: if there were large profits, many would enter into the business, rapidly bidding prices and profits down. This is one of the problems faced by the labour-intensive honey industry and one of the obvious reasons why production has been shifting to developing countries. Even within industrialized nations like Canada, one expert points out that small producers can still get started relatively cheaply and soon be in competition with larger producers as long as variable and fixed costs are kept to a minimum. Small producers that are not aware of their total costs (i.e., depreciation, shared portions of fixed costs, etc.), may price their honey (or pollination fees) below levels that are viable in the long run. Entry into the market is obviously more difficult for packers who face considerable up-front fixed capital costs.

6. ***Exit barriers.*** While it is likely to be more difficult for packers to enter the market, it is also more difficult for them to exit. The specialized assets of packers are possibly difficult to sell or be integrated into other packing lines. Producers and packers may find it emotionally difficult to exit the industry especially given the attachment many have to the industry and the family operations that transcend many generations. When producers and packers stay in the market despite extreme economic hardships, they may become more desperate to make sales and thus drive market prices down further. Furthermore, the increase in supply these producers bring to the market could have a dampening effect on prices.

7. ***Quality differences.*** Quality differences in the honey industry exist and prices take some of this into account. However, today's buyers may be less likely to take product quality and reputation of the supplier into account than buyers did historically. Thus, low-priced, lower-quality honey can set a benchmark price or have a dampening effect on the price for all honeys, even those of higher quality. Prices for dark and light honeys tend to move together. With relatively cheap dark honeys on the market, it becomes less likely that white honeys produced in industrialized regions like Alberta will see sharp rises in price; the exceptions are niche opportunities that are fully exploited or trade barriers that are successfully erected.

8. ***Cost of production.*** Over the long run, cost of production (and delivery) is at the root of price level determination for the honey industry. As global trade expands in volume, the differential costs of producing honey in industrialized versus developing nations can change relative competitiveness and production and trade patterns. Lower production costs for countries such as China and Argentina have arguably played a role in lowering global honey price levels. Because of the importance of production costs on competition in the honey industry, a portion of this and the subsequent chapter is devoted to cost of production analysis for each of the key competitors analyzed in this report.

9. ***Slow industry growth.*** When an industry grows slowly or becomes static, much like the honey industry, competitors begin vying for market share in order to grow. Obviously, in a static industry scenario, gains for one competitor usually result in losses for another. Competitive rivalry is increased in this situation because companies are competing for the same markets.

10. ***Lack of differentiation.*** Products with little differentiation compete head-on for consumer dollars. Retail or wholesale buyers have little problem switching from one product to another because cost and quality are similar. If new or unique honeys or honey products are developed, the degree of competitiveness among suppliers may decrease, leading to potentially larger industry volumes and profits with better market segmentation (recall the value chain concept presented in chapter 1).

11. ***Storage costs.*** Honey, in contrast to many other agricultural products, is relatively easy and cheap to store, but there is still pressure to move old honey. While producers can hold out for higher prices, honey inventories can build at any time. In this situation there is an increased risk that honey could flood the market and depress prices. The honey loan and deficiency program in the United States may contribute to the problem of a sudden supply shock if producers hold onto and then simultaneously sell or forfeit their honey.

12. ***High strategic stakes.*** Large food processors and honey packers may make important strategic decisions. A food processor may lower its selling prices by reducing procurement costs; a honey packer may open a new processing plant or enter a new market. When companies undertake a strategic position in the market, they may be willing to accept some degree of reduction in profit which could affect the industry as a whole.

B. Understanding China as a Competitor in the Global Honey Industry

When price is the key competitive tool used in global honey markets, China appears to have a critical cost advantage over many of its competitors. In this section, we will address this issue as well as study honey production and marketing in China. Because China has a distinct economic and social history, this section will offer a review of relevant socio-economic and political factors.

Background on China

To many North American beekeepers, Chinese honey producers pose a challenge to the honey industry because of their low cost production and large trading volumes. The range of honeys that China supplies to world markets typically, but not exclusively, enters the industrial market. Production of water-white honey from black locust and rapeseed competes, to a relatively minor extent, with prairie white honeys (e.g., clover and canola).

Chinese Politics, Economics, and Society

China has gone through tremendous economic and political changes over the past few decades. The approach China has taken to change its economy can be considered an evolutionary approach in contrast to the revolutionary approach adopted by many Eastern European nations. Under Deng Xiaoping's "Chairman" leadership in 1978 and 1979, the government increased the prices it paid for agricultural outputs. Many commentators suggest that 1978 marked the beginning of China's transition from a planned to a market economy. The command-style economy, however, remained in place in the rural economy from 1980 to 1984, when agricultural communes were replaced with the so-called 'responsibility' system. At that time, food prices were freed (except for grain) and farmers were allowed to market what they produced beyond the amount the state required for its own procurement in a quasi-market scenario. Free market prices generally exceeded the prices set by the state for its procurement purposes. Chinese producers now had a significant incentive to produce as much as possible beyond the procurement levels.

The responsibility system that created incentives for farmers and resulted in dramatic changes in the rural economy is described as follows:

> *Under the responsibility system, plots of land were leased to households. While land remains state-owned, each peasant family essentially had its own plot of land. Other than a certain quota required to be produced for the state, households could decide themselves what crops to sow or animals to raise. Household income, therefore, depended on the household's efforts. The linking of effort to rewards resulted in spectacular increases in production...Since the 1950s, farming output per head had stayed level, at best. Freeing food prices and allowing market activity immediately resulted in a significant rise in output and productivity. Three-quarters of China's population were rural peasants, and the net effect of making them richer was to generate wealth that was used to finance industry in the countryside.*[38]

As noted, the responsibility system lead to the distribution of relatively small plots of land to household agricultural producers. This has had one particularly negative impact on the beekeeping industry: with this small-plot orientation, fields and orchards with suitable floral sources were often widely dispersed, reducing potential honey yields and increasing the need for beekeepers to move around the countryside.

Since 1978, China has become more open to other countries in the global economy. In 1978, foreign domestic investment in China was reported to be $300 million US; by the year 2002, this figure is forecast at $60 billion US, a 20-fold increase (current values are about $40 billion). Along with foreign investment to fuel growth, in 1999 China's government spent heavily on a variety of projects. These expenditures are possible because the Chinese population save a large proportion of disposable income. Under this scenario, however, serious problems could arise if bank account holders become uneasy with the situation and attempt to take out their savings *en masse*.

State-owned enterprises (SOEs) in China are inherited from the country's command economy era. China's inspiration for nationalizing industry (i.e., state ownership of enterprise) in the 1950s was drawn from the Soviet Union which had expanded its economy through heavy-industry or large factory production in the 1930s, an era of *Depression* among Western economies. Soon after 1952, the Chinese government was concerned that private enterprises were not serving the interest of China: "The attempt to secure profits for the heavy-industry projects was the motivation for the government's change in position toward private enterprises".[39] In short, the Chinese believed that the market was failing them. One difficulty in industrializing China's otherwise rural economy in the 1950s and onward, was having an adequate urban labour supply to staff the new factories. The result of government attempts to provide inexpensive food, housing, medical care, clothing, etc., was that the country's agriculturalists would receive little economic incentive for their efforts. In the beginning phases of China's heavy-industry growth, however, the purchase of foreign machinery was necessary. The need for foreign currency was therefore critical. In 1970, it was estimated that 60 percent of foreign currency came from primary and processed food production.[40]

To ensure that agriculture could contribute to industrial growth, the Chinese government had to increase the productivity of this sector. The government felt that the collective approach — where large work forces were charged with building irrigation canals, reclaiming land, and improving agricultural practices in general — was the best way for agriculture to contribute to industrial growth without competing for scarce investment money. Between 1953 and 1985, while more than three-quarters of China's population were producing agricultural products, the agriculture economy received less than 10 percent of state investment. During the same period 45 percent of investment went into heavy industry. Given that the industry was depressed by the government over this period, it comes as no surprise that agriculture has grown dramatically since 1978 when incentives were introduced.

Honey production is unlikely to be considered "critical" to the Chinese economy and for this reason is unlikely to receive significant financial support from the government. However, it appears that some honey packing enterprises are still state-owned.[41] It is believed that if these operations were financially troubled, they would not be supported by the government. This has been the case for the sugar industry based on the following report from China on September 15, 2000:

> *Based on their findings, the government decided to force 150 sugar plants—or about 30 percent of the country's 539 sugar mills—to file for bankruptcy because their losses for the 1998 to 1999 crushing season reached Rmb 1.9 billion ($229.7 million US).*[42]

The transformation of China's economy can be witnessed in the heart of the beekeeping industry, Zhejiang province. There, the number of SOEs comprised 31 percent of all business enterprises in 1990, while collectives accounted for 60 percent and private enterprise eight percent. By 1998, SOEs were down to seven percent, collectives accounted for 32 percent and private enterprises jumped to 61 percent. The transfer of state-owned to privately-owned honey processing plants has been driven by the government's policy to rid itself of money-losing factories, and by private sector interest in purchasing plants that are making money.

The nature of China's modern day economy stems, to a large measure, from the countryside where farmers had initially gained control over their land and began to funnel profits into small businesses. A recent Economist Intelligence Unit article comments:

> *As such enterprises moved up the value-added ladder to manufacturing, however, they faced attempts by the central government to control them and by local government to tax them. Interventionist policies continue to stunt the expansion of individually owned businesses and to convince entrepreneurs to keep their accounting records hidden.*
>
> *Its agricultural origins have shaped today's private sector. Most enterprises are individually owned - there were 961,000 registered private enterprises in 1997, compared with an estimated 68 million individually owned businesses, or 'getihu'. And 75 percent of private sector activity is in the countryside, kept away from meddlesome authorities.*[43]

While China still maintains a unique economy with significantly more government control than what is experienced in North America, it is obvious that the country has made major strides towards a free market economy. Understanding this economic transformation in China, and considering its enormous human, agricultural, and financial resource endowments helps explain China's rise to power in the global agricultural economy.

Given the size of the Chinese economy and its ability to compete on global markets, trade will always be a critical issue for China. Recent steps towards membership in the World Trade

Organization will improve China's access to global markets and the opportunity for countries to export to China. On May 25, 2000, the United States Congress voted in favour of offering Permanent Normal Trade Relations (PNTR) to China and on September 19, 2000 the Senate passed this bill (approximately 85 percent supported this legislation). This should result in improvement in US-Chinese trade relations. Passage of the bill was seen as the biggest stepping stone for China's entrance to the World Trade Organization (WTO). If, or when China enters the WTO, the door will be open to the world at large for increased trade with China. China's membership in WTO subjects it to standardized rules with trade disputes resolved at the international level.

The view of US agriculture businesses on free trade with China is decidedly split into two distinct *for* and *against* camps. Like Canada, agriculture in the United States is very dependent on trade. Some free trade advocates in America's agriculture industry believe that freer trade with China would increase US farm sales by $2 billion US.[44] Others, including one US honey group, oppose trade with China, believing that it would be damaging to the US economy.[45]

At present, all is not well with China's economy. The country's banking situation is worsened by a focus on public rather than private enterprise. In 1999, China's largest lender, the Industrial and Commercial Bank, issued only 0.5 percent of its lending to individually owned and private enterprises. Credit managers at the big four state-run commercial banks are still pressured by the government to lend to state-owned enterprises.[46] With bad debts in China close to $200 billion, it is understandable that the country's banking system prefers to lend money only to the safest of private sector projects.[47] While China's entrepreneurs still find it difficult to access the capital necessary for growth, there are signs of change: five years ago, the first private bank was established in China.

China faces other economic problems as it makes strides toward a free market economy. For the sake of long term economic growth, the government has allowed state-owned enterprises to be sold or to slide into bankruptcy. Then, there are the rising unemployment concerns and other immediate social costs.

China's relationship with Taiwan is another concern. To many, this is considered the wild card of China's future. Tensions have recently decreased; however, if China were to wage war with the tiny but prosperous Taiwan, its economy would suffer greatly as trade with western nations would cease or go into a sharp decline.[48]

Brief History of Beekeeping in China[49]

In China, prior to 1955, the ownership of bee hives was primarily in the hands of private owners (along with some state-owned operations). With the agricultural cooperative movement starting at this time, the situation changed dramatically. Apiaries became mainly managed and administered by the State and collectives. Under this system, workers tended apiaries of 300 to 1,000 colonies and were paid by the Chinese government. A change in government structure in 1958 resulted in a split of apiaries into three levels including communes (several hundred to

1,000 colonies), production brigades (100 to 300 colonies), and production teams (100 or less). Reforms undertaken in the 1980s led to the transfer of responsibility for land use from collectives (communes) to households. Local governments took the initiative to transfer production decisions and profits from communes to households. At this time, state-owned colonies and beekeeping equipment were sold off or rented to beekeepers. Once again, as was the case before 1955, most beekeeping activities involved private ownership. In 1993, there were still some reports of state-owned apiaries engaged not only in production, but also in processing and selling bee products. While there is still talk of production quotas and wages paid by state apiaries, it is believed that the trend is continuing towards private sector production.

Most of China's 200,000 beekeepers today operate 40 to 60 colonies (some are reported to have more than 100; only a few beekeepers are believed to operate 300 hives). Migratory beekeeping, which began in the 1920s, accounts for 70 percent of Chinese beekeeping operations (some suggest this may be even higher). According to most reports, trains are the common form of transportation; however, trucks are often rented for accessing fields adjacent to train lines or for longer trips into areas not serviced by rail. Many individual migratory beekeepers appear to form loose "coalition groups" of five or six beekeepers to save on the costs of beekeeping. Typically, these roving beekeepers live in tents, keep well-informed, and employ an average of four employees.[50]

Migratory and fixed-address beekeepers may join forces in supplying packing plants. Possibly more common is the sale of honey to peddlers (also known as middle-men) in the trade who consolidate the loads of honey and transport them to processing factories. Much of the growth of processing factories has occurred since the 1970s. According to a 1991 report[51] there are currently about 400 processing factories in China. Of these, about 100 are speculated to be large scale. Many, if not most processing plants apply a vacuum processing procedure to reduce moisture levels. The problem of high moisture levels is believed to be more acute during periods of low world prices when buyers have difficulty sourcing higher quality honeys.

In 1991, China had over 7.5 million colonies, 42 percent more than in 1979; 1999 figures showed China's colony count had been reduced to 6.3 million. One Chinese honey marketer commented that the number of hives may be closer to five million when part-time beekeepers, who tend only a few hives, are excluded from the total. China's top beekeepers are reportedly from Sichuan and Zhejiang provinces (each province accounts for more than one million colonies).

The migratory nature of China's honey industry arises from the seasonal changes in floral sources and the fact that many floral source areas are relatively small and widely dispersed throughout the country. While many fields and orchards in China are on small plots, some fields in northern provinces, like Heilongjiang and Inner Mongolia, may have larger fields of rape seed and other viable floral sources. Cultivation of many of these areas was opened to Chinese soldiers in China's command-economy era. These state-owned fields have reportedly not been partitioned like many of the other fields. In the future, these fields may provide expansive areas for honey production from northern floral sources that could compete with Canadian prairie honeys. In Zhejiang, where the apicultural technological level is considered to be the highest in the country, there were 200,000 colonies reported in 1993 with an average colony reportedly yielding 100 to 200 kilograms of honey.

The Life of a Chinese Beekeeper

Many Westerners have little information about China's beekeeping and honey industry. Jonathan Ansfield, a Beijing-based reporter for *City Edition,* has provided a day-in-the-life perspective of a beekeeper in China.[52] Ansfield documented the migratory life of a thirty-year beekeeping veteran, Gao Ming, whose home is in Zhejiang province. Zhejiang may be Gao's home, but his life on the road means that visits home are brief and infrequent: he hasn't been home for over a year. The migratory nature of Chinese honey producers probably distorts provincial honey statistics--honey production seems to be recorded on the basis of beekeeper residence as opposed to the actual province of production.

Gao, his wife, and their Italian bees spend the winter months following the trail of fruit nectar in southern China before working their way north. They stop for two-week periods in the Chinese provinces of Henan, Shandong, and Liaoning (see figure 5.1). Gao and his wife travel with another family team with whom they split costs for transportation and other items. The truck, which they rent at a premium (estimated at approximately $3,600 US per annum), had previously been provided by the government. However, since China began reforming its agricultural economy in 1978, much has changed in the country. In short, the safety net that used to exist is no longer there.

Gao has not had an easy time with his beekeeping operation. There have been three years of drought, price-squeezing middlemen, and taxes and fines which are seemingly imposed at random. Under average rainfall, Gao reports that he could collect about 500 kg to 900 kg of honey from jingtiao (a local bush) every three to five days. This would be worth about 2,000 yuan (about $240 US). Currently, under drought conditions, all that Gao can get from his team's efforts are wax and royal jelly.

According to Wu Tianbin, a beekeeper from Hubei who began traveling the country with his bees seven years ago, the most pressing problem is price deflation. From 1994 to 1997, it was possible to net 34 yuan on a pound of honey; now, beekeepers are more likely to net 1.3 to 1.5 yuan ($.16 to $.18/lb US). Wu acknowledges that most of the reason for the drop has to do with low output levels that make it difficult to harvest honey of exportable quality (defined locally as 41-proof thickness or better). Wu believes that the government does too little to regulate the unstable, often cut-throat pricing that faces small-time beekeepers trading on the grass-roots level. In addition to these grass-roots beekeepers, the Chinese industry also includes small-time buyers, big entrepreneurs, refineries, and exporters.

In good years, migratory beekeepers can gross up to 200,000 yuan ($24,000 US), but in bad years the figure might be less than half this amount. Chinese beekeepers often grumble about the cost of hired labour, vehicle rentals, and frequent fines equivalent to $10 to $20 US. The stoppages that the beekeepers endure at the hands of government officials are said to result in the loss of many bees. However, it may be too early to conclude that Chinese beekeepers have an unbearable life. Jonathan Ansfield notes that for dinner Gao's beekeeping clan had chicken wings and fish. Furthermore, he observed a beekeeper calling home on his cell phone and commenting about a recent purchase of four second-hand motor bikes.

Figure 5.1. Map of China.

Geography of Chinese Honey Production

China has four major honey bee migratory routes: eastern, central, western, and southern. Each of these routes is described by time, location, flora source, and production level (i.e., the amount of honey produced per hectare of land base).[53] These are illustrated in Tables 51. To 5.4

Table 5.1. Beekeeper migration route - eastern route.

1. Eastern Route:			
Starting Time	**Locations**	**Floral Sources**	**Production (kg/ha)***
After New Year	Guangdong, Fujian	[Bee reproduction]	
End of Feb. or Early March	Zhejiang, S. Anhui	Rape	101-500
Middle April	S. Jiangsu	Rape, Chinese milk vetch	101-500, 0-100
Early May	N. Jiangsu, Shandong	Black locust (acacia)	>500
June	Hilongjiang, Jilin	Reproduction	
July	Hilongjiang, Jilin	Linden (small-leafed lime)	100-500
End Aug./Early Sept	Jilin, Liaoning, InnerMongolia	Sunflower	26-50
Middle/End Nov.	Back to Fujian, Guandong	[Reproduction]	

* kg/ha = kilograms per hectare

This eastern route extends for a total length of about 4,000 to 5,000 km.

Table 5.2. Beekeeper migration route - central route.

2. Central Route			
Starting Time	**Locations**	**Floral Sources**	**Production (kg/ha)**
End Nov./Early Dec.	Guangdong, Guangxi	[Reproduction] Rape, Chinese milk vetch	101-500, 0-100
End Feb.	Jiangxi, Hunan	Rape	101-500
End March	Middle Jiangxi, Hunan, Hubei	Chinese milk vetch	0-100
End April	Henan	Black locust (acacia)	>500
End May	Henan	Date	NA
Middle/End June	Bejing, Hebei, Shaanxi	Heterophyllous negundo (Negundo chastetree)	>500
End July/Early August	Inner Mongolia	Sunflower, Buckwheat	26-50, 51-500
	Back to Fujian, Guandong		

On the middle or central route, it is typical for beekeepers to “half-winter” on the Erduos Plateau of Inner Mongolia before returning to their places of origin.

Table 5.3. Beekeeper migration route - western route.

3. Western Route			
Starting Time	**Locations**	**Floral Sources**	**Production (kg/ha)**
Early Dec.	Yunnan	[Reproduction]	
End of Jan./Early Feb.	Sichuan	Rape	101- 500
End March	S. Jiangxi	Rape	101-500
April	Shaanxi, Gansu	Rape	101-500
May	Shaanxi, Gansu	Vethleaf sophora, Black locust, Sweet clover	15-30/kg/colony/year, >500, 101-500
July	Qinghai	Rape	101-500
July (alternate location)	Xinjiang	Cotton	101-200

Along this route, in Shaanxi province (also included in the middle route), summer blossoms provide some of the county's highest-yielding crops. As reported in 1993, between 400,000 and 500,000 migratory bee colonies move to a region around Baoji City beside the 600,000 colonies that are kept locally.[54] This local region is said to produce about 20,000 MT per year. Baoji city is a collection and distribution centre for honey products.

Table 5.4. Beekeeper migration route - southern route.

4. Southern Route			
Starting Time	**Locations**	**Floral Sources**	**Production (kg/ha)**
End Feb.	S. Jiangxi, S. Anhui	Rape	101-500
Early April	N. Hunan, Middle Jiangxi	Chinese milk vetch	0-100
May	Hubei (option one)	Heterophyllous negundo (Negundo chastetree)	>500
May	Henan (option two)	Black locust, Date, Sesame	>500, NA, 26-50
End July	Hubei, Hunan	Cotton	101-200

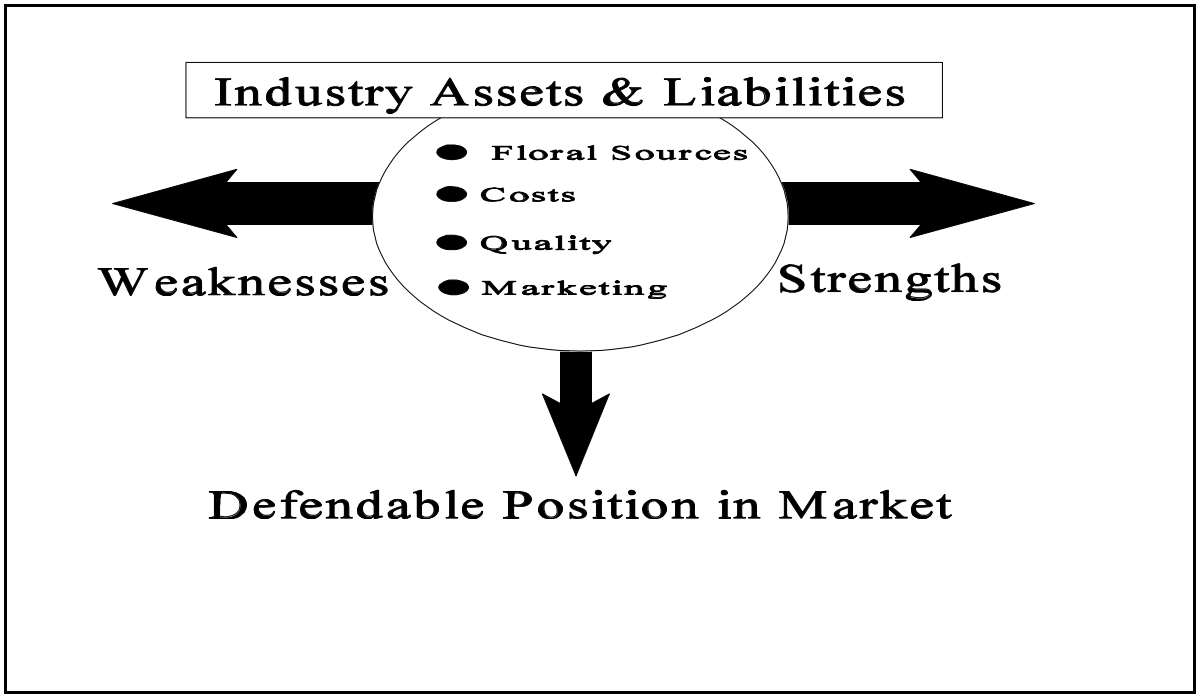
Assessing China's Competitive Strength

How can the competitiveness of China's honey industry (or that of other countries) be properly assessed? China is known for low cost honey; Alberta has a reputation for a distinct quality of honey; Argentina is often considered somewhere between the two. The competitiveness of a country is a reflection of the balance between strengths and assets on one hand, and weaknesses and liabilities on the other. Variables, like weather and disease, have serious effects on global honey production and markets. These are often unpredictable and subject to rapid change. Beyond these variables, which are generally well-monitored by industry networks, there are other factors that are less subject to change and possibly less understood. With this in mind, four variables will be examined to assess China's competitiveness both now and the prediction for the future. (The same approach has been applied to Argentina, the United States and Alberta later in this chapter). The four variables include:

- floral sources,
- production and distribution costs,
- quality, and
- marketing and industry organization.

The strengths or weaknesses of each of these variables combine to determine how each region competes in the global honey market as illustrated in Figure 5.2.

Figure 5.2. Strengths and Weaknesses and Competitive Strategy.



Floral Sources in China

- As noted in the background section, China has a variety of floral sources. Historically, when Chinese collectives sowed large fields, floral sources were more concentrated and beekeepers were not required to reposition their hives as much as is necessary today. The "responsibility system" of the 1980s created a shift towards smaller household plots, thereby transforming the Chinese rural landscape to a patchwork of floral source material Access to floral sources became an increasingly difficult issue because many or most beekeepers had relied primarily on railway transportation. Reportedly, motor vehicles are now required to access scattered fields suitable for honey production.
- While China's responsibility system may have had an impact on floral source availability, the negative consequences are muted by the large variety of flowers and nectar sources that exist year-round throughout China's established migratory routes.
- China appears to be experiencing growth in fruit production which may provide greater and more accessible floral sources for honey production.
- Environmental decline is serious in China. China's bulging population and increasing wealth will put further pressure on arable land; a further decline of existing agricultural land is anticipated through air, water, and land pollution. On the other hand, an urbanizing population may, over time, alter the structure of China's population allowing larger fields to be farmed by a smaller rural population. Consolidation at the farm level is bound to proceed as China's rural population (75 to 80 percent of total) begins to take up urban factory jobs in the industrializing regions of the country.

Production Costs in China

- China's low production costs are likely its biggest competitive asset in global honey markets. Although China is likely to incur cost increases, these are similar to global input cost increases and should, therefore, have limited negative consequences.
- Royal jelly sales appear to make up a very significant portion of income for beekeepers. These sales allow beekeepers to spread their costs over all their products for sale (just as pollinator/producers in North America can stretch their fixed-cost assets). Royal jelly also helps beekeepers endure low honey prices (as pollination does in North and South America) by using their fixed and variable cost inputs for royal jelly production. According to one estimate, China accounts for 95 percent of world production of royal jelly. While 1999 production was estimated at 1,100 MT, China normally produces 1,300 to 1,500 MT of royal jelly. Sixty percent or more is exported annually to Japan, its chief customer, with the remainder sold to the US, Italy, UK, and other Asian countries. Based on a brief analysis of royal jelly which sells on the international market at between $15 and $25/kg US, 1,500 MT of royal jelly would have a value of between $16.5 million and $37.5 million US.
- The article on beekeeping in China included in this section, made reference to some "grumblings" about the cost of hired help. This may provide an indication that the country's changing labour market situation is affecting the beekeeping community. Although China is enduring increasing levels of unemployment (made worse in the short run through privatization), the countryside continues to lose labourers to factories and urban communities. As a result, beekeeping families may begin to splinter as the price for

labour climbs. The beekeeping section of this report also made reference to a number of cost increases that are plaguing beekeepers.

- Chinese beekeepers likely use an active ingredients approach to resolving bee colony health problems. If, as expected, Chinese beekeepers do not purchase brand name products, savings can be expected to amount to two or three cents (Cdn) per pound relative to beekeepers in Canada, the United States, and Europe.
- While the income gap between beekeepers and typical farmers in China may have narrowed in the 1990s, honey producers are still reported to earn more than their rural crop-farming counterparts. Their life, however, is made difficult by the arduous nature of migratory beekeeping and punishing fees and charges imposed by Chinese officials.
- According to one account, beekeepers may have access to bank loans not available to other citizens. While the opportunity to purchase capital equipment may be available, beekeepers in China do not appear eager to expand their operations under current world prices. Another commentator suggested that beekeepers are likely using rudimentary extraction equipment with minimal capital cost requirements.
- Chinese beekeepers may receive some economic incentives for their efforts. In some regions honey falls under a specialty (i.e., low) tax. Beekeepers may also be paid for their bees to pollinate farmers' crops. Beekeepers, however, are reportedly still primarily focused on honey production, not pollination.
- One report stated there is considerable excess capacity among honey packing plants in China. As a result, there may be pressure to reduce the number of packing plants as the Chinese government appears to be prepared to let such operations go into bankruptcy. While processing plants with their high fixed costs are in operation, there is always the pressure to produce to capacity, a pressure that could lead to increased supply and lower prices. A reduction in the number of Chinese honey processing plants could help rationalize supplies in the global honey market. It could also lead to an expansion in the average size of packing plants, and assuming some efficiency increases, a potential to reduce costs. These cost reductions, however, could be muted by increased labour costs.
- Recent unofficial reports (January 2001) of Chinese prices set payments to beekeepers at $0.24 to 0.25/lb US.
- Verbal accounts indicate that about half of China's honey collectors, or middlemen, are government employees while the other half are private sector entrepreneurs. The margins they achieve in consolidating honey and shipping it to processors will vary depending on market conditions. It has been estimated that they may gross about $.02/lb to $.04/lb US. Their net profits have not been evaluated.
- There may be about 10 percent shrinkage resulting primarily from a vacuum process that reduces honey moisture levels from the typical 24 percent down to international or client specifications of 17.6 to 18.5 percent. With shrinkage, processor costs, and margins taken into account, recent prices paid by exporters amount to $0.30 to $0.32/lb US or $660 to $700/MT US using standard metric tonne measurements for international trade.
- Exporters will incur some additional costs in accessing the US and European markets with fees for minor internal transport, ocean freight, and docking fees. These are estimated in US currency based on shipment to the port of Los Angeles:
  - An internal shipping cost of $45/MT is assumed (approximately $.02/lb);

- Shipping to United States (Los Angeles): $2000/20 MT container or $100/MT (about $.045/lb);
- Terminal charges, duty, insurance and drayage: $45/MT (about $.03/lb);
- Broker fees: $33/MT (about $.015/lb);
- Assessment fee: $23/MT ($.01/lb);
- Total transport and marketing fees therefore amount to approximately: $246/MT, or approximately $0.11/lb

- When shipping and miscellaneous costs are added to exporter costs, the total comes to between $900 and $950/MT or about $0.41 to $0.43/lb landed in the US market. This estimate is provided for what is probably considered an average grade of Chinese honey. Naturally there will be different prices associated with different honeys. A rule of thumb that may be extended to honey production is that cost of production figures can vary by 10 percent during periods of normal production.[55] This would imply costs ranging from $810 to $1,045 US per MT.
- The following report (July 2000) suggests that the shipping costs applied above may exceed actual rates.

> *On the Shanghai-Europe route, the price for a 20-foot container was $800 in 1997 but now is $1,400... In addition, 14 foreign shipowners said recently they will hike rates by $350 in August [2000], and some of them also have increased various other charges... Government officials say the increases are hurting many Chinese producers of labour-intensive exports and goods with little value added, such as straw and wicker handicrafts, tea, and honey. Profit per container on these products is only $100 to $200, so higher rates quickly affect margins and exports.*[56]

- The costs calculated by the US Department of Commerce during the 1994 dumping case which led to the 1995 Suspension Agreement against China were said to be $1.70/kg US or $0.77/lb (approximately $1.15/lb Cdn). The Department of Commerce used India as a surrogate model or substitute in calculating production Chinese costs. Under this process, basic cost information from India is superimposed on Chinese production. A brief discussion of Indian honey production and exports is provided in section E of this chapter.

Honey Quality in China

- In many cases, a peddler or middle-man consolidates bulk loads of honey from bee yards for shipment to packers. The peddler distribution system is considered a key area where quality control may be compromised.
- While Chinese containers of honey shipped internationally are given high marks for their appearance and accurate weights, containers used to ship honey within China are reported to be of concern. One concern is the use of poorly painted barrels which means that paint may fleck off, allowing rust to enter the product; another concern is the open-air transport which could lead to other quality control problems such as dust contamination. These problems, however, may be reduced or eliminated through processing.
- China reportedly sells the following niche honey products into export markets: acacia,

milk vetch, and linden (basswood). In China's domestic market, niche honeys include lychee, Chinese date, orange blossom, and Verbenacae (*heterophyllous negundo*), a deciduous shrub.

- China's typical commodity honeys are of the following colours: white 25 and 34 mm, extra light amber, and light amber.
- By negotiating shipment contracts prior to sourcing the necessary supplies of honey, as do Argentine exporters, a quality control problem may arise. Once low price contracts are established, Chinese exporters are increasingly driven to seek lower prices from peddlers or producer suppliers. At low prices, packers are reported to find it difficult to source higher quality honey. As a result, there may be considerable pressure within the internal honey distribution network to provide cheap supplies with two notable repercussions — harvesting of green honey (i.e., with elevated moisture content) and adulteration of honey.
- When China began its emphasis on heavy industry (e.g., steel production and manufacturing industries) in the 1950s, large scale factory production grew rapidly. With the transformation to a market economy, one observer commented that industry has taken a distinctly different course: now the emphasis seems to be on small enterprise growth. The farm unit has been dramatically decreased in size and many factories, including extraction plants, are also small. As noted, there are an estimated 300 small scale plants. Some of the larger plants are reported to house sophisticated, modern facilities and apply high standards in food safety; among the smaller operations, this may or may not be the case. However, some of these operations may slip into bankruptcy, resulting in more larger-scale processing plants accompanied by higher standards of hygiene.
- A number of reports from industry indicate that consistency is a key quality concern for Chinese honey. For example, the inclusion of darker honeys in lighter grade lots has been reported in a number of cases.
- China's Apicultural Science Association of China (ASAC) is the national beekeeper association that manages the whole honey production process and includes producers, packers, and exporters. The ASAC attempts to control the quality of honey produced in China; however, when compared to recent Chinese export figures, it appears to account for about 10 percent of export volumes. The remaining shipments are channeled through scattered collection points to individual companies. In 1999, industry and government officials representing China's honey industry, visited Argentina gathering information on the country's approach to quality control. Argentina may be of particular interest because it has been living up to the technical requirements of marketing to the European Union.
- Corruption at various levels of China's government — an acute problem that has only recently been officially recognized by China's ruling elite — creates an opportunity for cracks to emerge in any national quality control system that is developed.

Marketing and Industry Organization in China

- According to one report from a Chinese honey marketer, the trend in China has been towards cooperatives where 20 to 30 producers work together to share information and production and marketing costs where possible. Coops are perceived as being more successful in marketing their honey than individual beekeepers who use peddlers to sell their honey. Today, coops with significant volumes can deal directly with Chinese factories.
- Prior to the emergence of peddlers, honey was shipped to government-run collectives.

Now, peddlers buy honey from small/individual producers and ship them to factories located throughout the country. They are often beekeepers who have done a good job in marketing, so they have changed to a marketing focus. Those that do both production and marketing make significantly more money with marketing margins reported at about 10 percent.

- With the Chinese Renmimbi pegged to the US dollar, and with falling European currencies, the cost of Chinese honey for buyers (German, UK, or French) has increased about 32 percent from 1995; the same situation applies to Argentina.
- In China, an estimated ten major exporters are responsible for the nation's honey exports. Each year under the 1995 Suspension Agreement, these companies could purchase a set number of export certificates (a measure undertaken by China's Chamber of Commerce to keep records of national honey exports to the United States). It is believed that these certificates could be sold or fulfilled by other companies, but the original bearer of the certificate will presumably be held accountable for these shipments.
- According to one industry official, while most exporters are believed to be state-owned operations, a few are privately-owned. With a few exceptions, China's honey exporters appear to export a wide variety of products.
- China's population consumes about half of China's total production of honey. Per capita consumption has been reported at about 0.1 kg per person per year, much less than the Canadian average consumption level of 0.8 kilograms. In spite of the low level of consumption, shops selling honey exclusively have been noted both in large cities and in relatively small villages. These honey shops market a variety of honeys for sophisticated consumers of honey (honeys are marketed according to floral source). Honey in China is often purchased for its therapeutic value or for gift-giving.
- If per capita consumption of honey in China doubled from the current estimate of 100 grams to 200 grams, an additional 130,000 MT (just under 300 million pounds) of honey would be required domestically.
- Some honey producers and industry associations in China believe that their domestic market is huge and can have significant impact on the sustainability and growth of China's honey industry. With recent low export prices, Chinese honey industry officials are attempting to elevate domestic honey consumption and demand instead of focusing on the export markets. Research findings suggest that China's domestic market favours quality honeys and varietals, perhaps implying that China may continue to export commodity honey, albeit at possibly lower volumes. Demand for honey should increase as consumers' incomes and living standards improve.

C. Understanding Argentina as a Competitor in the Global Honey Industry[57]

As far back as 1973, Argentina was considered to be the world's largest honey exporter.[58] Although China grew sufficiently to become the world's largest honey exporter, Argentina has recently eclipsed China to regain its title once again. Production of quality white honeys puts the Argentina into more direct competition with Alberta than China. Historically, Argentina has been a quality supplier due, in part, to its experience in the European and Japanese honey markets.

Background on Argentina

Argentine Politics and Economics

From a western perspective, Argentina's historical developments are much easier to comprehend than those of China's. Its economic and cultural history has been more similar to ours, and its economic growth has largely occurred in the context of a market economy. While periods of political and economic stability have occurred in Argentina's post-independence period (starting in 1816), political upheavals have destabilized the country and limited its economic growth. Although Argentina became a member of the Latin American Free Trade Association in 1960, the country still pursued protectionist policies (i.e., protecting the local economy from competitive imports) until President Menem was elected in 1989.

Economic reforms beginning in 1989 were targeted at controlling the country's inflation and public sector debt as well as deregulating and privatizing state-owned enterprises. Two years later, to improve the stability of the Argentine economy, the peso was pegged to the US dollar (one peso equaling one dollar). There are weaknesses in the Argentine economy that may be connected to its previously more-protectionist state and high government expenditure levels; however, agriculture and food industries are in good shape, accounting for about one-third of all exports. If current economic and financial problems lead Argentine political leaders towards devaluing the peso (something inconceivable only a few months ago), then Argentine prices on world markets would become more competitive.

Political and economic stability was observed in the 1990s along with a six percent economic growth. This growth, however, was accompanied by high unemployment. In May 2000, unemployment in Argentina reached 15.4 percent. With limited work opportunities, "Argentines are reportedly forced into illegal employment, taking work where they neither pay taxes nor receive health insurance, pension, or other benefits. Around 40 percent of Argentine employees work illegally or 'in the black' with the figure nearer 60 percent among the young".[59] In general, efforts to improve tax collection are thwarted by a culture of tax evasion and avoidance.[60]

Because Argentina's *informal* or *black* economy is reportedly huge, the much needed tax revenues to build the country's infrastructure are not available to the government.[61] For this reason, in 1990, the Argentine government allowed private companies to construct, maintain, or improve portions of the country's road network for the right to collect tolls. While the tolls vary by road and vehicle type, charges range from $.016/km US for automobiles to $0.136/km US ($.20 Cdn) for heavy vehicles.[62] These toll fees are added to producers' costs as they move their hives around or have their honey shipped to Buenos Aires for export.

Argentine Honey Production

Argentina is a major producer of honey, and with only five percent consumed domestically, it is also the leading global exporter. According to Argentina's National Institute of Census and Statistics, from January to November 1999, the country exported 87,000 MT worth $90 million. Argentina's export growth has been impressive: current honey shipments exceed 1989 levels by 122 percent. Argentine shipments are reported to have had significant impacts on global honey prices and market conditions. Because of its unique southern hemispheric location, Argentina's shipments of honey commence in the first few months of the calendar year. This seasonal consideration provides Argentina with some price-setting power in global markets.

Much of Argentine honey is considered polyflora, a product of many floral sources. Clover, thistle, and alfalfa are the main sources of white honey although these may be mixed with other flowers like sunflowers or eucalyptus (extra light amber to light amber). The abundance of varied floral sources in Argentina provides a partial explanation for the growth of the country's honey industry. For example, Argentina has reportedly come from *nowhere* to become the world's largest exporter of lemons.[63] A growing citrus industry provides new floral sources and pollination income for beekeepers.

Between 50 and 60 percent of honey production in Argentina comes from the province of Buenos Aires. Santa Fe and Cordoba account for about 15 and 12 percent, respectively, while Entre Rios and La Pampa each produce just under 10 percent of the total national production.[64]

With only 11 percent of beekeepers maintaining over 300 hives in 1997, the vast majority of Argentina's 18,000 beekeepers (reported figures vary from 16,000-28,0000 beekeepers[65]) appear to approach beekeeping as a sideline affair. An estimated four or five beekeepers operate in excess of 10,000 hives.[66] One unverified account suggests that some of these large operations may be in financial difficulties. The explanation for this may be that these large operators increased their debt levels to finance expansion in the two years following the 1995 China Suspension Agreement when world price levels were high. Regardless, most industry observers believe that recent low honey prices have resulted in larger producers buying out small to medium size operations. One account suggests that viable commercial production now requires 1,000 hives.

The nature of Argentina's honey industry has evolved over the past few decades. Today, most large commercial beekeepers in Argentina extract their own honey. Smaller operators may take their supers to larger beekeepers for extraction. In such cases, a set number of drums or a percentage of the amount extracted can serve as payment in kind. Traditionally, the barrels of extracted honey have been collected primarily through independent middle-man operations and consolidated into truckloads for shipment to exporters based in Buenos Aires. This practice is now in decline. Many Argentine exporters today reportedly buy directly from producers so that they can trace individual barrels to individual suppliers, a quality control requirement of the European Union. Argentine exporters of multiple agricultural products may find direct buying relationships with producers more difficult to maintain.

Over the years, Argentina has been able to maintain a relatively solid record in quality control. Recently, a Chinese delegation visited Argentina to investigate their quality control measures. Long exposure to European markets and their relatively demanding specifications have had an impact on Argentine production. The EU has set a deadline (not confirmed but believed to be 2002) for food exporters to provide food safety plans. Honey supplying countries, for example, are required to reveal their plans for controlling residues and product purity. The Argentine government has been one of the first to respond and has required exporters to fund the necessary studies for this task. They require one analysis for every 250 MT of export. From these analyses, they are building a database that Argentina's animal and plant health authorities (SENASA) will use in developing reports for the European Union.

Argentine Honey Exporters

Argentina is extremely export-oriented with production in the 70,000 to 90,000 MT range and consumption at only 5,000 MT. It has been estimated that in the year 2000 the top exporter, Association of Argentine Coops (ACA), shipped 24,000 MT of honey (up from 19,000 MT for 1999) valued at just under US$23 million (average price: US$960/MT or $0.435/lb). Over the same period, Conagra shipped 9,650 MT (average price: US$989/MT or $0.448/lb) and HoneyMax shipped 8,950 MT (average price: US$975/MT or $0.422/lb). Both Conagra and HoneyMax were down from previous year's shipments of approximately 12,000 MT. Older honey-exporting companies that have small production bases have turned to niche markets in countries like Norway, Sweden, and Switzerland.

The rise of ACA and Conagra as exporters of Argentine honey has undoubtedly caused problems for their national competitors. Previously, Argentine honey exporters dealt exclusively or primarily with honey. Today, the majority of Argentine honey exports to the United States come from multi-product agricultural exporters like ACA and Conagra where honey exports may account for only a few percent of total sales. These types of organizations might be expected to execute different competitive strategies as greater financial resources allow them to pursue markets aggressively. Given the differences between multi-product and honey-only exporters, a lack of understanding in the marketplace can lead to a lack of consensus on market prices and, therefore, a heightened degree of competition as discussed ealier.

Table 5.5 shows the top Argentine exporters to the United States, Germany, the UK, and France based on Argentine statistics from January to July, 2000.[67]

Table 5.5. Top Argentine Honey Exporters in 2000 and 2001

Exporters	Exports to the US (%)		Exports to Germany (%)		Exports to the UK (%)	Exports to France (%)
	2000	2001	2000 / 2001		2000 only	2000 only
ACA (Assoc. of Argentine Coops)	28.7	34.1	23.8	19.3	38.9	94
Conagra	18.3	17.7	2.8	2.9	5.2	-
Radix	10.4	9.3	3.4	3.0	3.4	-
Honeymax	9.2	7.9	15.2	13.4	-	-
Nexco	7.8	7.0	13.3	13.7	5.2	-
CEASA	5.5	6.7	7.4	7.6	-	-
Food Way	5.5	4.0	4.9	5.6	-	-
Mielar	1.8	1.6	8.2	5.6	23.9	-
Times	0.6	0.4	5.4	10.6	-	3.2
Percent of total	**87.8**	**88.7**	**84.4**	**81.8**	**76.6**	**97.2**

Argentine exporters sell an estimated 10 to 15 percent of honey in advance of actual shipments. Therefore, in years of low yields, like 1996, exporters may end up paying producers in excess of their contracted selling prices. In 1996, for example, beekeepers were paid about $2/kg US while their contracted selling price was around $1.50/kg. This marketing approach creates risks for Argentine exporters that other national suppliers (those not forward contracting) do not encounter.

Argentine exporters shipping to Germany have lost an edge because of the declining value of the German mark (DM). Argentine honey has effectively become more expensive for German buyers because the Argentine peso is pegged to the US dollar (which has gained in value relative to the mark). Between 1990 and 1995, the German mark fluctuated between 1.40 DM and 1.70 DM to the US dollar. From 1995 to today, the mark has declined further; today, it takes 2.25 DM to purchase one American dollar. This represents a 32 percent increase in price for German buyers purchasing honey from US dollar-based countries like Argentina. On top of these exchange rate difficulties, an import tariff on honey of 18.9 percent means that European retail prices for imported Argentine honey inch even higher. This tariff has recently been lowered for Mexico, providing it with a selling price advantage. This explains in part why Mexican suppliers have been apparently favouring the EU over the US market.

Assessing Argentina's Competitive Strength

Floral Sources in Argentina

- Argentina's growth in honey production must be viewed in light of the growth of its broader agricultural economy.
- A variety of forces in Argentina leads to consolidation of the agricultural sector which in turn lead to more economical exploitation of floral sources (floral sources are generally

more geographically concentrated than in China).

! Argentine beekeepers produce many lighter honeys based on their thistle, alfalfa, and clover floral sources. Darker honeys are generally derived from eucalyptus. Argentina's floral sources are listed in the Table 5.2..

Table 5.2. Argentine Honey Floral Sources.

Shrub Varieties (common English term)	Latin Term
Abelia	Abelia grandiflora
Cherry Blossom	Chaenomeles japonica
Cotton Easter	Cotoneaster sp.
Jasmine	Plumbago capensis
Oleander	Nerium oleander
Privet	Ligustrum sinense
Honey Suckle	Lonicera fragrantissima
Rosemary	Rosmarinus officinales
Ceibo tree	Erithrina cristagalli

Floral Species (common English term)	Latin Term
Knapweed or Star Thistle	Centaurea sp
Alfalfa	Medicago sativa
Locust bean (also Carob)	Ceratonia siliqua
Local tree (Chile and Argentina); often referred to as El Arbol (simply "the tree" because of its widespread occurrence) or white Algarrabo.	Prosopis alba
Local tree known as black Algarrobo.	Prosopis nigra
Borage	Borrago officinalis
Creeping buttercup	Ranunculus repens
Milk thistle	Silybum marianum
Bull thistle	Cirsium vulgare
Chica (local term)	Flourencia campestris
Sweet acacia	Acacia farnesiana
Perennial Wallrocket	Diplotaxis tenuifolia
Local purple flower (close to Paterson's curse and salvation Jane: Echium plantagineum)	Echium violaceum
Sunflower	Heliantus annuus

Floral Species (common English term)	Latin Term
Lemon tree	Citrus limon
Mandarin or tangerine tree	Citrus reticulata
Lime tree	Tilia sp.
Apple tree	Malus pumilia
Mustard	Hirschfeldia sp
Navel orange tree	Citrus sinensis
Seville orange tree	Citrus aurantium
Pear tree	Pyrus comunis
Rabbit-foot clover	Trifolium arvense
White clover	Trifolium repens
White sweet clover	Melilotus albus
Other sweet clovers	Melilotus sp
Crimson clover	Trifolium incarnatum

Along with these floral varieties are a number of forest species including twenty species of eucalyptus, acacia (Robinia pseudoacacia), white poplar, laurel, elm, and silk floss tree.

Cost of Production in Argentina

- In mid-2000, a gallon of the cheapest gasoline in Argentina was reported to be $3.80 US while diesel cost $1.91US.
- A system of toll highways increases distribution costs for exported Argentine honey.
- Chemical costs are reportedly low in Argentina because beekeepers tend to use active ingredients in concocting their own chemical inputs. One observer speculated that this approach could cut chemical costs ten-fold.
- Drums for honey were reported to cost $26 US (without tax) and $31 (with tax).
- With average income per capita of about $8,500 US (1995 figure), labour costs in Argentina are considerably lower than in the United States or Canada. Also, high unemployment has helped keep labour costs down.
- Detailed cost of production estimates have been conducted using existing government data and beekeeper information from Argentina (a table of cost comparisons is provided in Chapter 6). Beekeeper costs are estimated at approximately $.40/lb ($0.60/lb Cdn). These costs, including export-grade barrels and internal transport, bring the total to $882/MT.
- When incorporating production costs and shipping and miscellaneous expenses (as noted in the previous section on China), the following is arrived at:
  - Shipping costs were reported as follows: $70/MT US (approximately $.03/lb) docking at east coast US ports and $20-$40/MT more for delivery to west coast ports. Northern European shipments were reported to cost $55/MT US ($.025/lb) and for Japan, $80/MT US ($.036/lb);

- Terminal charges, duty, insurance and drayage: $45/MT (about $.02-0.03/lb);
- Broker fees: $23/MT (about $.01/lb);
- Assessment fee: $23/MT (about $.01/lb);
- Total external transport and marketing fees therefore amount to approximately: $160/MT (about $.07/lb).

- Combining production, distribution and handling brings total cost to $1,044/MT or $.47/lb The rule of thumb that cost of production estimates can vary by 10 percent under normal conditions, would provide a range of costs from $940 US ($.426) to $1,150 ($.52). Recent data of Argentine honey exports for 2000, indicate that the average price for honey sold to the United States was $963/MT US or $.437/lb ($.655 Cdn), implying a $23/MT US profit to exporters under the least cost scenario estimate. While the US was Argentina's top export nation with a reported 45,172 MT delivered in 2000, Germany was the second largest export region with just under 25,000 MT delivered at an average price of $986.61/MT US. Deliveries to the United Kingdom, Spain, Japan, Belgium, and France (ranked third through seventh top export regions, respectively) landed at an average price near, or in excess of $1,000 US.

Honey Quality in Argentina

- A long history as a honey exporter along with ideal production conditions have generally helped Argentina establish a favourable reputation as a supplier of high quality honey for selective and demanding European markets.
- A large volume of information for Argentine beekeepers is provided on the Internet (with links to beekeeper courses).[68] While the impact of this was not investigated, it can be assumed that some degree of quality is achieved as a result of this information resource.
- US packers and European buyers believe that Argentine honey is among the safest in the world. (Appendix I)
- The few reported complaints about Argentine honey involved color inconsistencies within some shipment lots. (Appendix I)

Marketing and Industry Organization in Argentina

- Argentine exporters reportedly bid aggressively and competitively in world markets, notably in the high stakes US market. Exporters that sell honey as part of a larger portfolio of other commodities, may develop more aggressive strategies as their financial resources may be greater than exporters dealing exclusively in honey.
- Argentina's honey industry is export-oriented and highly competitive. With its southern location, Argentina's honey is available at the beginning of the calendar year. Because of these factors, Argentina exerts considerable power over world price levels in the beginning of the calendar year.
- The Argentine middle-man, who consolidates honey supplies from smaller producers, creates an additional feature in the distribution system. On two accounts, some of these middle-men were reported to engage in fraudulent tax evasion.
- The shift from a middle-man to direct buyer relations appears underway owing to European demands for product traceability.
- Argentina's beekeeper operations stand to improve as further rationalization occurs in the industry (i.e., smaller beekeepers exit the industry while larger enterprises expand their operations).

D. Briefing on Honey Production and Marketing in the United States and Alberta

As an analysis of the North American honey industry has been outlined in chapters one through four, discussion in this section of the report is limited to highlighting some key competitive issues that are relevant to Alberta beekeepers, packers, marketers, and exporters of honey. The focal issues in the United States are the Loan Deficiency Program payments and the anti-dumping and countervailing cases filed by the American Honey Producers and Sioux Honey Association against Argentina and China in September 2000.

Loan Deficiency Program (LDP)

As this report went to print, the LDP had been put into legislation through emergency payments provisions of the 2001 Agricultural Appropriations Bill. Recently, the American Beekeepers Federation put out the following notice about the LDP[69]:

LOAN DEFICIENCY PAYMENT APPROVED FOR 2000-CROP HONEY

(American Beekeeping Federation; late November, 2000)

US beekeepers will get an income boost via an enhanced honey loan program which is part of the emergency payments provisions of the FY-2001 Agricultural Appropriations Bill. The loan deficiency payment provisions of the program are expected to provide a benefit exceeding 10 cents per pound for all 2000-crop honey – including that already marketed or already under loan.

In many ways, the program will be like the "buy-back" program for honey, which was last in place for 1993-crop honey. However, there are some differences, including the retroactive payments on honey already sold and the conversion of the existing loans. Another difference is that the old marketing loan program had differentials for colors and classes, while it appears that there will be a single loan rate for 2000-crop honey.

While the details of how the program will operate are still being developed by USDA, the legislation contains these key points:

- ***!*** *There will be a loan rate of $.65 on marketing assistance non-recourse loans (honey can be forfeited to satisfy the loan).*
- ***!*** *The loans may be repaid at the lower of the loan rate, plus interest, or the prevailing domestic market price, as established by the USDA.*
- ***!*** *A loan deficiency payment will be available for the difference between $.65 and the market price if the producer will forego taking a loan on the honey.*
- ***!*** *Outstanding recourse loans on 2000-crop honey will be converted to the new loans on the date of enactment.*
- ***!*** *Producers, who have sold or sell 2000-crop honey prior to 30 days after the program regulations are published in the Federal Register, will be eligible for a retroactive LDP*
- ***!*** *The usual farm payment limitations will apply – generally $150,000*

benefit per producer.

A previous US loan program that contained a "buy-back" clause allowed producers to take a loan out on their honey and then buy it back for a rate of about fifty cents. The fifty-cent buy-back took root as the market price (even though it was artificial), and established low market prices for honey in the United States. Honey that was forfeited under the same program, reportedly piled up to a about 100 million pounds, which, when eventually released into the market (through schools and a variety of government institutions), further collapsed prices. The impact of this price support program on Canadian exporters of honey has been particularly damaging.

With the new LDP program, producers will be able to either put their honey up for loan (at $.65/lb) and attempt to sell their honey for as much as possible at a future date, or they can sell their honey immediately (i.e., without the loan) and receive a deficiency payment. This is equal to the difference between the estimated domestic price and the $0.65 benchmark, on top of their selling price. When producers, who put honey up for loan, eventually sell this honey (providing it is not forfeited), they qualify for the deficiency payment at the time of sale, when the loan is to be repaid with interest. It is estimated that this program will supply US producers with a US$0.10 to US$0.15 per pound subsidy in the early stages of the 2000-crop program.

LDP programs are introduced annually, so the 2000-crop LDP will have to be redrafted should a 2001 LDP program be established. There are some signs that the 2001 program may shift from a non-recourse to a recourse loan which would avoid potential forfeiture of honey to the government (to the benefit of market stability). To recap, under a recourse loan, honey cannot be forfeited to cover the loan amount while under a non-recourse loan the government takes delivery of the honey in case of forfeiture.

How the loan program and LDP impacts the market depends on the legislated program details and the nature of the honey market itself. In reviewing the basics of the program, a domestic price will be estimated by the US Farm Service Agency (FSA) based on price reports from larger US packers. Producers are eligible to receive the difference between the established domestic price and the 65-cent benchmark price. Recently, the estimated market price was 52 cents, so producers received an LDP payment of $0.13 when they sold their honey (regardless of the price they were able to secure). If the estimated FSA prices are generally lower than actual market prices, then honey producers will receive a larger deficiency payment than if the opposite is true. Fortunately, producers still have an incentive to obtain the highest market price possible for their honey; however, if a deficiency payment is made, producers may be able to accept a lower market price and still receive the 65 cent benchmark price.

Unless a producer has some degree of financial stress, it would appear logical that producers would put their honey up for the loan and then wait for the best selling price. If this happens, there may be a demand for foreign honeys while American producers wait for a better market. This could lead to another era of inventory-building in the US marketplace. Some industry estimates in mid-December 2000 put the US honey inventory at about 125 million pounds, up 57 percent from 1999 inventory levels. Surprisingly, 1999 inventory levels were reportedly already at

record levels over the 1993-99 period. The volume of the Argentine crop, which has begun making its way into the world market (December 2000 to January 2001), does not appear to exceed last year's crop (about 85,000 metric tonnes). Poorer crops from China may also ease the inventory situation; however, the longer producers hold out as a result of the LDP, the more dangerous the situation becomes.

Anti-Dumping and Countervailing Cases

On September 29, 2000, the American Honey Producers Association and the Sioux Honey Association filed an anti-dumping duty (AD) petition on honey imported from Argentina and China along with a countervailinging duty (CVD) petition against Argentina. The petitions were forwarded to the US Department of Commerce (DOC) to calculate the extent of dumping and subsidization and order the customs department to put levies on the honey to that amount. As procedure dictates, it was simultaneously forwarded to the US International Trade Commission (USITC) to evaluate the case for injury. Just prior to this document going to print, a 6.55 percent preliminary countervailinging duty was assessed for Argentina.

Dumping refers to selling a product in a foreign market below normal domestic prices or below cost. Countervailinging allegations refer to government subsidies that effectively reduce costs and thus give an unfair advantage to subsidized exporters in international markets.

The US petitioners alleged that Argentina and China were selling at 35 and 171 percent below their costs of production; for the countervailing case, there were an estimated 34 subsidy programs that collectively subsidize the industry.[70] While many of these subsidy programs are likely to be inactive or have negligible impact, the common strategy employed in a countervailinging case is to list as many subsidy programs as possible in hopes that some unfair subsidies will be found in at least some cases.

Given the lack of an Argentine home market, petitioners used the figures for honey sales to Germany to calculate the margins and made further allegations that the German sales were made below cost. For China, the petitioners again asked the DOC to use India as a surrogate country, calculating dumping margins of 169 to 184 percent. In the period of January through June 2000, the US imported a total of 22.4 million pounds from China, at a value of $ 8.646 million US.[71]

Preliminary determination on the dumping cases should be finalized by early May 2001 (two weeks earlier for the countervailing case). At this point, if either of the preliminary dumping cases or the Argentine countervailinging case are positive, a levy in the form of a cash deposit or bond equivalent to the preliminary levy is forwarded by the importer of record (typically the importer) as a bond on all imports. The reason the levy is paid as a bond is that the cases will go through to a final determination when the exact amount of the levy will be determined. If it is higher than originally calculated, the importer of record will not have to pay the additional amount. If it is less, the importer will be reimbursed from the account or the bond will be adjusted accordingly.

The outcome of the cases and their impact on the markets is currently unknown. A 1995 dumping

case against China, that according to one report resulted in a 141 percent levy, appears to be an obvious liability for the country's case. However, the case was ultimately suspended and evolved into the 1995 Suspension Agreement. To evaluate the dumping allegation, India was used as a surrogate country because the US considers China to be a non-market economy (i.e., where input prices are unreliable). If India is again used as the surrogate country, China will again be in a difficult situation. For Argentina, market economy costs are available, so no surrogate analysis is required. While it is more difficult to assess the outcome of the Argentina case, statistics on US dumping cases up to 1990 reveal that 68 percent of dumping cases resulted in some disciplinary measures being taken as indicated in the following[72]:

- 45 percent of cases were suspended following an 'arrangement' (such as the 1995 Chinese Suspension Agreement);
- 23 percent of the measures were implemented.
- 13 percent were terminated by a preliminary finding of "no-injury";
- 5 percent were terminated by a finding of no dumping margin;
- 14 percent were terminated by a final determination of "no-injury";

Brief Assessment of Competitiveness of the US and Alberta Honey Producers

Floral Sources in the United States and Alberta

- Alberta has large amounts of floral source material available with clover, alfalfa, and canola predominating.
- New crops are emerging in Alberta with potential for application in niche honey markets.
- The United States has a great variety of floral sources available for mainstream and niche honey production. The National Honey Board reports over 300 different varieties with some of the most common ones being alfalfa, avocado, basswood, blueberry, buckwheat, clover, eucalyptus, fireweed, orange blossom, sage, tulip, poplar, and tupelo.[73] While the competitive advantage of the United States may lie in its niche variety production, sales of such types of honey were reported to be in decline.

Cost of Production in the United States and Alberta

- Cost estimates for large scale honey production in Alberta (as evaluated in this study) were set at $0.50/lb US or $.75/lb Cdn.
- Cost estimates for large scale honey production in the United States were set at US$0.65/lb or Cdn$.98/lb (plus an additional two cents for internal transportation). The main reason behind the different per pound costs were the larger yields recorded in Alberta than in the United States, combined with a favourable exchange rate. Some regions, such as the Dakotas, may receive similar yields and therefore similar costs. Producers in other prominent production areas such as California and Florida may be in a better position to take advantage of pollination opportunities and to reduce per unit costs accordingly.
- Alberta's cost advantage and quality reputation are the major reasons why Alberta honey finds its way into the US (and EU) market. Only top producers in the United States can compete with imports from Argentina, Alberta, China, and other exporting nations. Top

US producers will find further financial gain through government assistance, primarily in the form of loan deficiency payments.

Honey Quality in the United States and Alberta

- Among global honey sources, US packers report that some of the best-tasting honeys come from the United States, with honeys from Alberta and other prairie regions close behind. Some of the taste concerns are found when canola honey predominates. Canola is also responsible for strong crystallization tendencies. When Canadian prairie honey contains a high percentage of canola source material, US packers may reduce Alberta or Canadian content in blended table honeys. (Appendix I)
- To a limited extent, quality problems have been associated with high moisture honeys that come from the Canadian prairies. Discussions with major US buyers uncovered information that these moisture problems were not associated with Alberta honey per se; however, some caution must be taken where Alberta honeys are associated with other Canadian prairie region supplies.
- Packers demand consistency in the colour of honey. Alberta and Canadian prairie honey suppliers were reported to be the best in meeting the standard of colour quality, exceeding the US and other global competitors by about 10 percent.
- Discussions with buyers of global honey supplies indicate that some US honeys have quality control problems relating to debris, with limited problems associated with adulteration (also noted for other world honeys). Canadian prairie honeys were viewed as the most pure among major global production regions.
- Drums from the Canadian prairie region (including Alberta) were reported to be of poor quality. Drums from the United States were reportedly in worse shape.
- In terms of service, reliability is a quality category that concerns producers and packers alike. In this category, Alberta and Canadian prairie suppliers scored about 10 percent higher than other global competitors. It should be noted that packers can transfer problems associated with reliability to brokers when their services are used.
- In terms of reliability, some US producers operate at a disadvantage. On many occasions, US producers were reported to break contracts for honey (verbal or otherwise) when higher-price sales opportunities arose.

Marketing and Industry Organization in the United States and Alberta

- One distinct advantage that US producers maintain is proximity to their own market. When producers require prompt delivery, nearby US suppliers are generally in a position to ship within 24 hours or less. Even though Alberta suppliers are relatively close to the Pacific Northwest (i.e., Washington, Oregon, Montana, and Idaho), this region appears to be focusing more on cheaper Asian honeys destined for lower-margin industrial markets. It is possible that positive business relationships matter as much as location in securing premium-price spot orders.
- Animosity between producers and packers is seen to negatively affect the marketing effectiveness of US producers. Industry articles in a variety of magazines and journals generally contain a producer perspective that does not take into account the problems faced by packers and retailers including competition, price pressures, and financial stress. While this animosity is not unique to the United States (it is noted to a lesser degree in

Canada and Argentina), it creates some problems in addressing value-chain solutions as discussed in Chapter 1.

- A further rift in the US honey industry occurs between the two major national honey producer organizations, the American Bee Federation (ABF) and the American Honey Producers Association (AHPA) that often take opposing views on industry issues.
- Relations are also particularly strained since producer groups have filed trade cases against the Argentine and Chinese honey industries while packers, represented by the National Honey Packers and Dealers Association (NHPDA) and the Western States Honey Packers and Dealers Association (WSHPDA), take the opposing view. The difficulty producers have had dealing with low packer prices and the challenges packers face in retail markets explain the discourse and enmity.
- Given consecutive US administrations standing in favour of free trade, it appears that, over the long haul, the US honey industry will not be able to keep lower cost production from entering the country and threatening marginal producers. As a result, US producers may begin working up the value chain in areas such as niche and medicinal honey products. Research in these areas may be critical for the US honey industry to prosper.

E. New Entrants (Competitors) in Global Honey Markets

Changes in the underlying cost, quality, and marketing capabilities may change the competitiveness of existing global honey exporters. Jockeying among exporters may also take place as new competitors grow in strength. While an indication of the future of existing competitors is provided in chapter 6, the remainder of this section looks at the threat of new entrants to the global honey export market. Referring to countries such as Vietnam and Australia as "new entrants" may be misleading as these countries (notably Australia) have been exporting honey for some time. New entrants, in this case, refers to countries that could see significant growth in their shipments to the US and EU honey market.

Statistics from developing countries such as India, Vietnam, and China are of varying quality because of irregularities in data collection and estimation. While particularly poor data make it difficult to chart Indian honey production and export statistics, some industry sources see the country as a potential future competitor. Others wave off any notion India will emerge as a competitive threat. Using the limited and varying data that is available, we can estimate India's total production at somewhere between 10,000 MT and 15,000 MT (22 to 33 million pounds). [74] Consumption is believed to be around eight grams per capita (the high end of three different estimates).[75] This amounts to about 8,000 MT of domestic consumption. Data from the United Nations Food and Agriculture Organization (FAO) states that India produces over 50,000 MT of honey. This, however, appears to be grossly overstated, given a variety of other data formats (including yield and hive estimates, consumption, and export figures) and their implications. While exports of Indian honey are estimated to be fairly insignificant (between 1,500 and 7,000 MT),[76] recent exports to the EU of specialty eucalyptus and sunflower have fetched prices far in excess of standard polyflora honey (reportedly in the $1,100-1,200 range with one report going as high as $1,400). India also produces rape honey with sale prices significantly below these specialty hones. Reports of Indian rape honey at $800/MT (custom and freight) stand close to lower-end Chinese honey. FAO 1999 export data has Indian export honey at US$0.33/lb (FOB); $0.35/lb honey has also been reported in the EU market.[77] While beekeeper prices appear in the range of US$0.24 to

$0.44/lb, one observation was as low as $0.18/lb.[78]

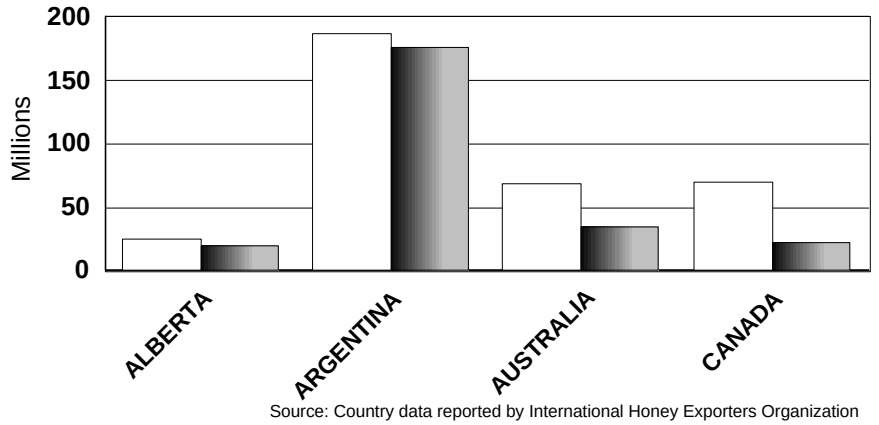
The method used to evaluate the threat of new entrants encompasses the following components:

- volume of exports,
- exports as a percentage of total production (i.e., a measure of export orientation), and
- change in number of hives or colonies over the past decade.

Export Volumes

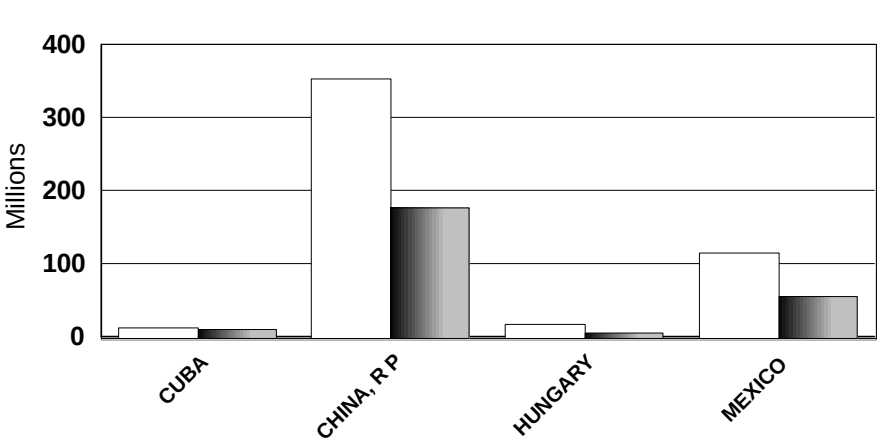
In illustrating production and export volumes, Figures 5.3 through 5.5 demonstrate the dominance of Argentina and China in global honey markets. Alberta, as a producer of light coloured honeys, becomes more of a direct competitor to Australia, New Zealand (especially in the packed EU market), and to a lesser extent, Argentina and Uruguay who produce mainly polyflora honeys.

Figure 5.3 1999 Production and Exports

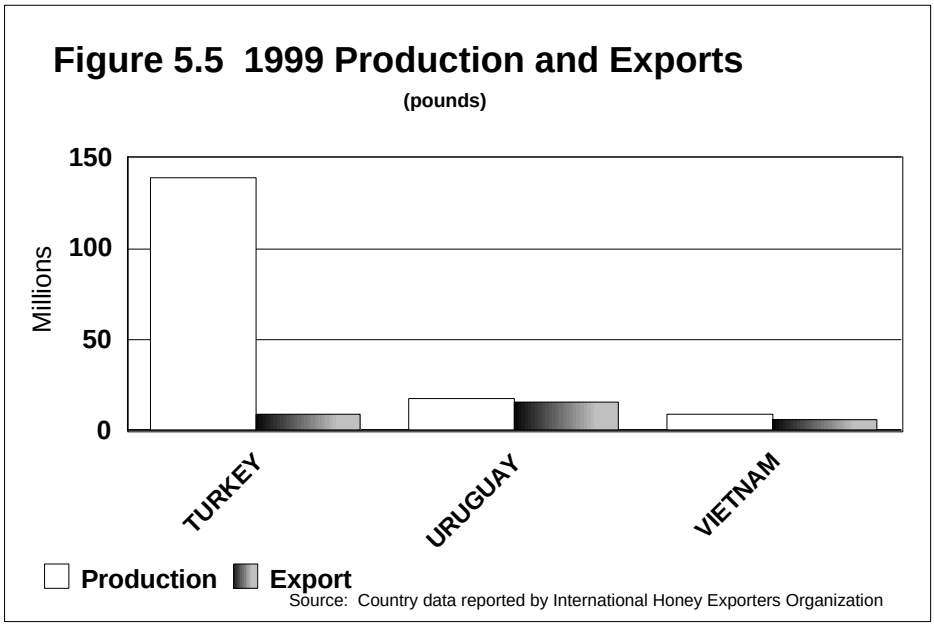


Source: Country data reported by International Honey Exporters Organization
Statistics Canada: Food consumption in Canada, CANSIM population data
Statistics and Data Development, AAFRD

Figure 5.4 1999 Production and Exports

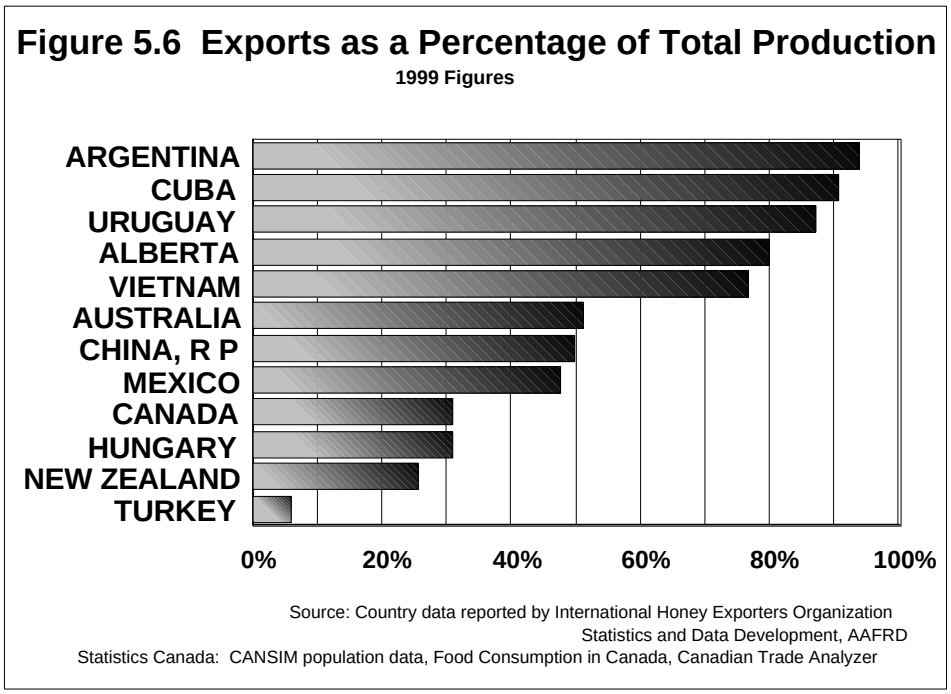


Source: Country data reported by International Honey Exporters Organization



Export Orientation

Figure 5.6 illustrates that Argentina, Cuba, Uruguay, Alberta, Vietnam, Australia, and China all exported at least 50 percent of their total honey production volume (weight measurement). The proportion of Alberta's total production exported was calculated using Canadian per capita honey consumption figures along with total production values for 1999. (Note: inter-provincial trade figures were not available).



Main Factors Affecting Export Orientation

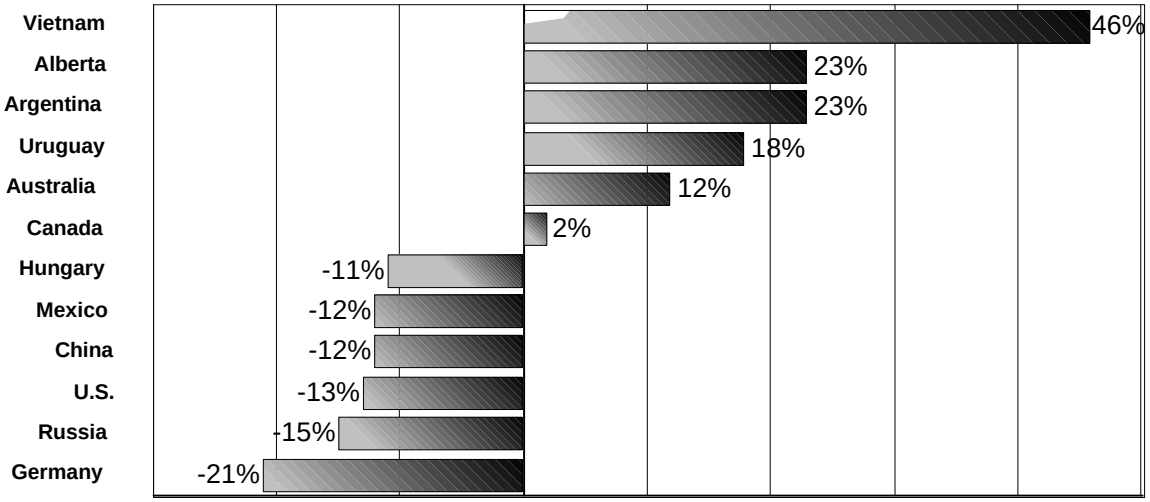
The main factors dictating the ability to export honey include the following:

- the amount of appropriate floral source materials relative to domestic population,
- the income levels and consumption patterns of the exporting nation (i.e., effective internal or domestic demand),
- history and experience as a honey-producing and exporting nation,
- government policy and the need for foreign currencies.

Figure 5.7 reveals growth in Vietnam, Alberta, Argentina, Uruguay, Australia, and Canada. While Vietnam again appears as a major growth area, with total production equivalent to only five percent of Argentina's production base, it accounts for a more distant threat than Uruguay (at 10 percent of Argentine production). Reductions in some regions, such as Mexico, are likely the result of disease problems while China's reduction would appear to be a result of lower world prices and general industry decline. Russia's slowdown is likely a result of the broader economic downturn and problems with domestic transportation that affect both input purchasing and distribution. Another issue is the environment and climatic problems that had a negative impact on Europe's floral source capabilities. This may, possibly explain why there have been reductions in hive counts in Hungary, Russia, and Germany. The decline in the United States is discussed in greater detail in chapter 6.

Figure 5.7 Major Bee Colony Producing Countries in the World

Percent Change Average (1990-94) to Average (1995-99)



Source: FAOSTAT Database
Apiculture Section and Production Economics Branch, AAFRD

Chapter 6. Comparison of Major Honey Competitors

This chapter discusses the degree of competitiveness of honey producers from China, Argentina, Alberta, and the United States. As mentioned in previous chapters, the basic features of competitiveness are cost, quality, and marketing capabilities. In this chapter, section A examines production and marketing costs for delivery into the US market in isolation; section B provides an overall analysis of competitiveness in both the US and EU markets.

A. Comparison of Honey Production and Marketing Costs

Chapter 5 provided some research findings on production and marketing costs (i.e., distribution and market access). This section brings these findings together for comparative analysis. As the purpose of this study was to develop a holistic analysis of competition and competitiveness, the extent to which any individual component of competitiveness can be assessed, including cost, is limited. Furthermore, because this study focused on global competitiveness, only highly competitive producers are included in the analysis. Some cost studies take into account small-scale operations or hobby-oriented producers with results aggregated to determine an average cost of production. For this study, such an approach would be counter-productive. Although small-scale producers may be relatively efficient in producing honeys for niche markets, they are unlikely to produce low-cost honey for a competitive global commodity-oriented honey market.

Assumptions

A number of assumptions underpin the cost analysis that follows (see Table 6.1). The approach to data collection for China was to rely on expert opinions (both internal and external to China) and news articles about the price of honey sold by beekeepers to honey collectors (peddlers) and from collectors to processors. Limited data were available regarding the selling price on transactions between processing plants and exporters. A further complication in determining selling price was that a portion of the margin is lost to shrinkage due to the collection and vacuum (drying) process. External freight and miscellaneous costs were determined in consultation with industry experts in North America.

For Argentina, the cost of production data were determined from detailed government sources and industry input from Argentine producers and exporters of honey. A similar approach was used to estimate the cost of production for Alberta honey producers. Due to a lack of empirical data in the US, a consensual approach to estimating production costs of US producers was taken. Information derived from discussions with industry experts in the US was used to estimate benchmark costs (in cents) for high-yielding, efficient producers in the United States.

Yields, and to a lesser extent input costs, vary from year to year. Therefore, the input costs shown in Table 6.1 should be considered as basic averages for leading producers. Some producers argue that costs are higher; others suggest that costs are actually lower than indicated. Regardless of actual costs, US producers of “non-niche” honey whose costs exceed the 67 cent level, find it increasingly difficult to compete in the world market as it currently exists.

At these price levels (i.e., an industry-rationalization price level), it is believed that some producers will be able to maintain their operations while others will likely be forced to exit the industry. The results of this analysis put the total cost of honey delivered to the US processor at $.45 for China, $.50 for Argentina, $.54 for Alberta, and $.67 for the United States (US currency). As these costs allow for a small payment to unpaid labour, they are slightly higher than values reported in Chapter 5.

Table 6.1. Cost Values in Global Honey Market

Costs	China	Argentina	Alberta	United States
Beekeeper Costs	$0.24	$0.40	$0.50	$0.65
Internal Collection (i.e., middleman)	0.025	0.01	not applicable	not applicable
Barrel Cost Assumed by Exporter	0.04	not applicable	not applicable	not applicable
Dehumidification Shrinkage	0.035	not applicable	not applicable	not applicable
Ocean and Land Freight	0.05	0.04	0.02	0.01
Miscellaneous: terminal fee, insurance, drayage, duty, broker, assessment, exporter margin	0.06	0.05	0.02	0.01
Total Delivered Cost ($US)	$0.45	$0.50	$0.54	$0.67
Total Delivered Cost ($CDN @ 0.65 exchange rate)	$0.69	$0.77	$0.83	$1.03

B. Overall Competitiveness Comparison

The following diagrams, Figures 6.1 to 6.4, present a subjective interpretation of competitiveness for China, Argentina, Alberta, and the United States. The degree of competitiveness is based on three variables: production costs, product quality, and marketing effectiveness. Each variable contributes to competitiveness with scoring as follows: 1 (poor), 2 (moderate), 3 (good), and 4 (excellent) with mid-point scoring (e.g., 2.5) reflecting intermediate scores. Floral sources are excluded from this portion of the analysis as they are accounted for in the cost and quality variables.

Subjective Measurement of Competitiveness

The subjective measure of competitiveness is taken as the area of the triangular shape (see Figure 6.1), using the formula for area of a triangle as:

> Area = ½ x base x height, where the base variables are marketing effectiveness and product quality and the height variable is cost.

Therefore, the formula for determining competitive ranking is:

> Competitive ranking = ½ x [cost x (marketing effectiveness + product quality)]

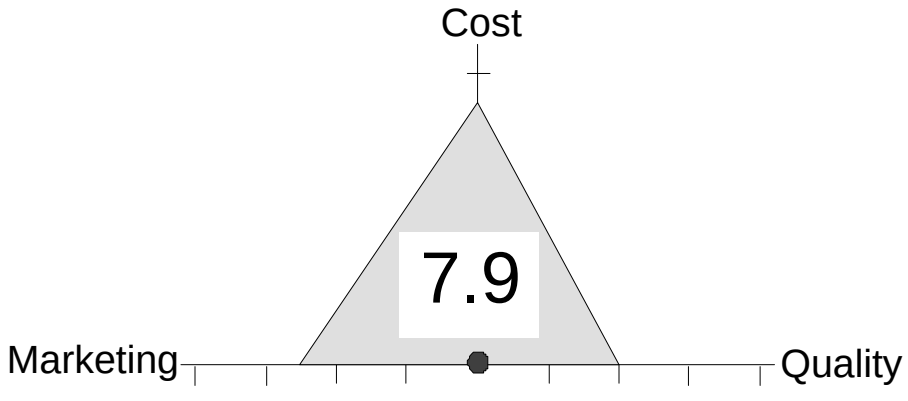
The larger the resulting number (i.e., area of the triangle), the greater the degree of competitiveness. By putting the cost variable on the vertical axis, we can see that it generates greater impact on competitiveness than either the quality or marketing variables. This illustrates the overriding importance of price in today's marketplace. The competitiveness score should be interpreted as an indicator of future growth as opposed to short term competitive standing.

A competitiveness chart is presented for each of the four honey-producing competitors featured in this report (i.e., China, Argentina, Alberta, and the United States). Following each country's chart, a brief rationale of the competitive scoring is given along with some perspective on the future competitive state of each country or region. A general decline in various aspects of competitiveness is indicated with a downward sloping arrow (ú), while growth and positive future prospects is indicated by an upward sloping arrow (ü). For forecasts that suggest no change, a straight arrow is indicated (û).

Briefing on China's Competitiveness in World Honey Markets

Figure 6.1 indicates the subjective competitiveness of China. Production costs are scored at 3.5, product quality at 2.0, and marketing effectiveness at 2.5. The overall competitive ranking for China is 7.9 as illustrated in Figures 6.1.

Figure 6.1. China Competitiveness



China Forecast: Decline (ú) as a World Honey Trader

Cost Score: 3.5

China's cost of production for honey is extremely competitive worldwide. There are, however, some pressures that may lead to increasing costs, namely labour (with proportionately greater rises than in North America), transportation costs, and difficulty in accessing suitable floral source material.

- **Future direction** ú as wealth in China increases.

Quality Score: 2.0

Problems with the quality of Chinese honey have emerged in both the US and EU markets. Some industry experts suggest that high moisture levels at harvest impact negatively on taste. Although processors clean and vacuum-dry Chinese honeys to international standards, a number of buyers have reported off-tastes and off-smells. As a result of low world prices, China appears to be shipping honeys of lower quality grade.

- **Future direction** ü as China responds to international pressures and gains more experience with quality control in its own domestic market.

Marketing Score: 2.5

In general, most Chinese orders arrive according to specifications. Internal distribution involving middle-man collectors (or peddlers) may result in delays or additional costs. Given the small-scale operations that generally exist (with 30 to 100 hives typically maintained by individual families), few alternatives are available to this existing system. If markets increasingly demand traceability of production, China will be at a major disadvantage. As prices remain low, Chinese beekeepers can produce bee pollen, royal jelly, and propolis as alternate sources of income. Also, China can look forward to a growing domestic market with a positive outlook for higher prices.

- **Future direction** ú as a world exporter; as Chinese beekeeping organizations, and the industry in general, begin focusing on domestic markets, there will likely be ü gains in China's domestic honey market. Honey consumption appears to be on the rise with increased income levels. Improvements and efficiencies in domestic marketing may lead to longer term improvements in international trade.

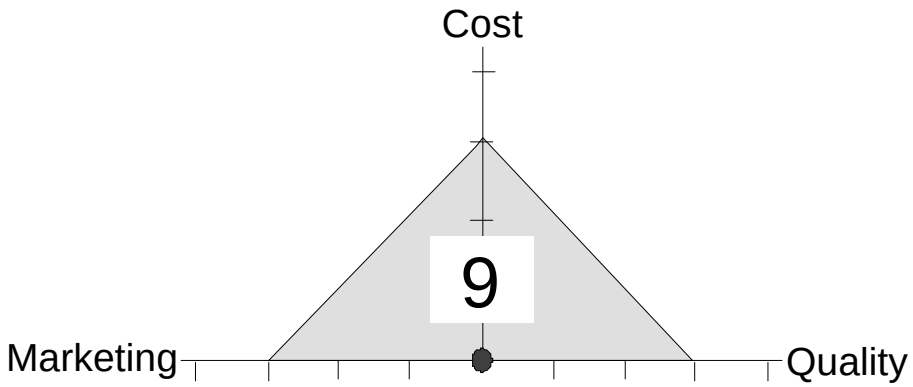
China Assessment

If the United States is successful with its dumping case (initiated with the Sept. 29, 2000 petition), then Chinese honey will be channeled into European markets, depressing prices in the EU. Under a low-price scenario in Europe, Chinese exporters will have difficulty sourcing quality honey domestically with the exception of existing inventories. China has already been disappointed with world markets and a renewed focus on the domestic market is already under way. The competitive threat that China poses to US and EU markets should rescind with new low-cost competitors taking its place such as Mexico, Vietnam, and India (which also have quality control problems) over the next five to ten years (sooner for Mexico). In limited quantities, quality Chinese mainstream and niche honeys are available. With an opportunity to avoid transportation costs, domestic honey can be marketed reasonably well to increasingly wealthy one-child families who are more oriented towards luxury products like honey.

Briefing on Argentina's Competitiveness in World Honey Markets

Figure 6.2 indicates the subjective competitiveness of Argentina. Production costs are scored at 3.0; product quality at 3.0, and marketing effectiveness at 3.0. The overall competitive ranking for Argentina is 9 as illustrated in Figures 6.2 and 6.5.

Figure 6.2. Argentina Competitiveness



Argentina Forecast: Moderate Increase (ü) as a World Honey Trader

Cost: 3.5

Argentina is very cost-efficient in production owing to low labour costs, low chemical input costs (reportedly using home-made alternatives), and excellent floral source material. Wages will likely increase (the Argentine economy has been improving since 1998 and the 1995 recessionary periods and unemployment levels have been declining).

- **Future direction** ú as wages increase, and as more intense food safety measures are ushered in (as encouraged by EU buyers and SENASA, Argentine government's phytosanitary agency).

Quality: 3.0

Internationally, Argentine quality is perceived as very good. During drought years (a possibility for the 2001 crop), darker honeys predominate. Other than a limited number of colour-consistency complaints, Argentina scores high on quality.

- **Future direction** ü as Argentine producers and government agencies learn to cope with demanding European buyers.

Marketing: 3.0

By most reports, Argentine exporters are extremely competitive with one another in US and EU markets. This high degree of rivalry may reduce profits of Argentine and other national suppliers. In spite of a consolidation trend and a shift towards direct supply, middle-man operations exist because there still are many small producers still exist in Argentina. Again, if allegations of tax fraud are valid and the practice is eradicated, an

increase in selling price could occur. If prices rise 15 percent, for example, the price in the US market may move from $963/MT US, (average sale price of Argentine honey exported to the United States in 2000), to around $1,100/MT US or $.50/lb ($.75/lb Cdn).

< Future direction û unchanged.

Argentina Assessment

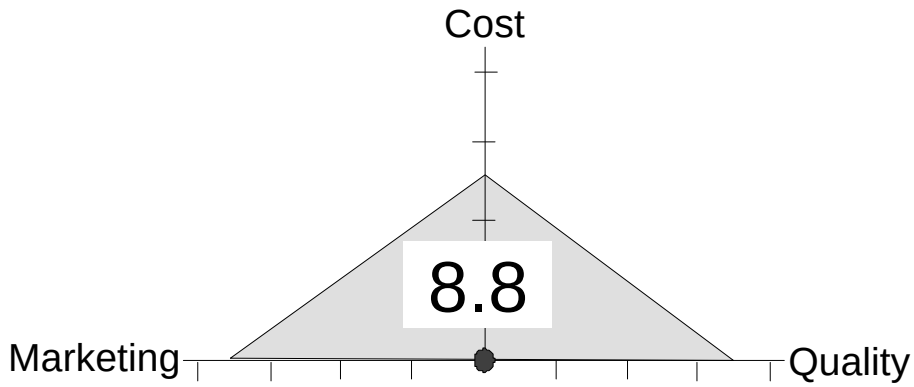
Argentina is the leading exporter of honey due to low cost production, plentiful floral sources, reliable (and internally competitive) marketing channels, and high quality honey. With these fundamentals, Argentina will continue to prosper as a world honey trader, especially where its competitors face rising costs and, in some cases, quality control problems. Reportedly under recent price levels, the incomes of Argentine beekeepers and some exporters have declined significantly. High interest rates and taxation levels have exacerbated this problem.

Consolidation in the beekeeping industry has resulted in the formation of larger beekeeping units with an estimated five beekeepers maintaining in excess of 10,000 hives. Conflicting estimates suggest that between 20 and 80 percent of Argentine hives service the pollination sector (appears likely to be at the lower end of these estimates). With some preliminary reports of beekeepers exiting the industry by abandoning their hives, it remains to be seen how well producers can survive the current low-priced markets. Producers with high fixed costs and substantial debt will likely feel some degree of financial stress with high interest rates prevailing. Argentina is seen as a price leader in global markets, so financial stress on producers and exporters at various price levels provides a good indication of where long term world price levels are headed. The current level of stress indicates that there may be an upward shift in the long-term price outlook. Estimates appear to be in the range of US$0.60 to $0.70 range.

Briefing on Alberta's Competitiveness in World Honey Markets

Figure 6.3 indicates the subjective competitiveness of Alberta. Production costs are scored at 2.5, product quality at 3.5, and marketing effectiveness at 3.5. The overall competitive ranking for Alberta is 8.8 as illustrated in Figures 6.3 and 6.5.

Figure 6.3. Alberta Competitiveness



Alberta Forecast: Moderate Increase (ü) as a World Honey Trader

Cost: 2.5

Alberta costs are highly competitive in contrast to the United States; however, in comparison with Argentina and China, higher relative costs occur. The rural wage rate in Alberta is strongly tied to the wages and prosperity of the province's large oil and gas industry. With current high oil prices, there is little hope for change unless provincial beekeepers are able to hire migrant labourers. High costs of disease and pest controls also create concerns.

- **Future direction** ú as wages and other costs continue to increase. However, costs are rising globally and should ultimately lead to higher prices for those able to wait for the medium to longer term.

Quality: 3.5

Internationally, Alberta honey is recognized as premium grade. Nonetheless, honeys with higher canola content have slight off-tastes and increased crystallization tendencies. Alberta suppliers could further improve their quality image by consistently shipping honey in top-grade drums.

- **Future direction** ü with a continued focus on high quality production and world-class extraction facilities.

Marketing: 3.5

Alberta honey maintains a positive image in the eyes of packers and buyers worldwide.

- **Future direction** ü with a focus on satisfying packers/buyers on all aspects of quality products and service.

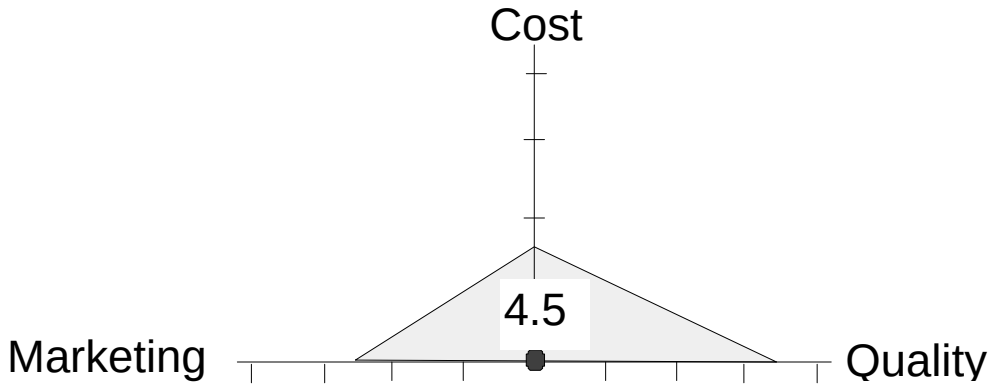
Alberta Assessment

Alberta stands to improve its position in world honey trading both in the US and EU markets. As the industry continues a modest consolidation trend and weathers current low-price levels, other honey producers are also experiencing declines, notably US, Chinese, and, to a lesser degree, Argentine. Alberta producers will gain through a focus on high-end supply that should allow for a modest premium (i.e., modest, according to research findings, at only $.03/lb Cdn for equivalent grade honey) in the table honey market. For higher end industrial markets such as cough syrups and health food markets, the premiums will likely rise as new markets emerge. A proper focus on all the quality attributes — including colour consistency, taste, purity, drum condition, food safety, reliability, and ability to negotiate contractual arrangements — should help large-scale, efficient Alberta producers to prosper in the future.

Briefing on United States Competitiveness in World Honey Markets

Figure 6.4 indicates the subjective competitiveness of the United States. Production costs are scored at 1.5, product quality at 3.0, and marketing effectiveness at 2.5. The overall competitive ranking for the US is 4.5 as illustrated in Figures 6.4 and 6.5.

Figure 6.4. United States Competitiveness



United States Forecast: Decline (ú) as a World Honey Trader

Cost: 1.5

The United States suffers from cost of production problems that relate to extremely high costs for labour and disease and pest control. The strong US dollar also damages its competitive position (the same problem plagues countries that have their currencies pegged to the US dollar like Argentina and China). Owing primarily to these relatively high costs, many US beekeepers have been exiting the industry. Declining honey prices at the retail level are also affecting the financial viability of honey packers in the United

States. As a result, a consolidation trend may occur at the packer level, which according to competitive theory, should provide packers with a better price bargaining position (as long as competition among the remaining packers is moderated).
Although US beekeepers appear skeptical, a higher retail price should lead to better producer prices unless hyper-competition occurs at the beekeeper level.

- **Future direction** ú although some relief should come to beekeepers operating near or below the break-even point through loan deficiency payments (LDP) and possible ruling of dumping and countervailing against China and/or Argentina.

Quality: 3.0

The taste of US honey was ranked by US packers as generally the best in the world.[84] Some reports noted the presence of particulate in southern honeys along with domestic adulteration. With a large variety of types and qualities of honey produced in the United States, it is difficult to generalize on quality. For example, North and South Dakota honeys compare well with Canadian prairie honeys. Currently, the US is seen as a lower-priced world market than the EU. With the implementation of better quality control in the United States, this could change for the better.

- **Future direction** ü as the industry eventually improves its quality standards.

Marketing: 2.5

Political activity at the beekeeper association level is intense in the United States compared to major honey-exporting countries. While this activity may lead to government assistance, it may also damage relations between sellers (beekeepers) and buyers (packers). Short term gains will likely be achieved especially by larger beekeepers that operate at lower costs and receive larger overall subsidies than smaller producers.

- **Future direction** ú as the strain between packers and producers continues. The negative consequences of this may be counter-balanced with a possible ruling against Argentina and China in the US dumping and countervailing cases. As other countries gear up to fill the gap in the United States' demand for honey, these gains may be reduced or eliminated.

United States Assessment

In general, honey production and marketing in the United States has been in a state of decline for many years. There may be a brief respite resulting from possible dumping and countervailing levies against Argentina, dumping levies against China, and price support from US loan and deficiency payments; nonetheless, the future outlook for US commodity honey is unfavourable.

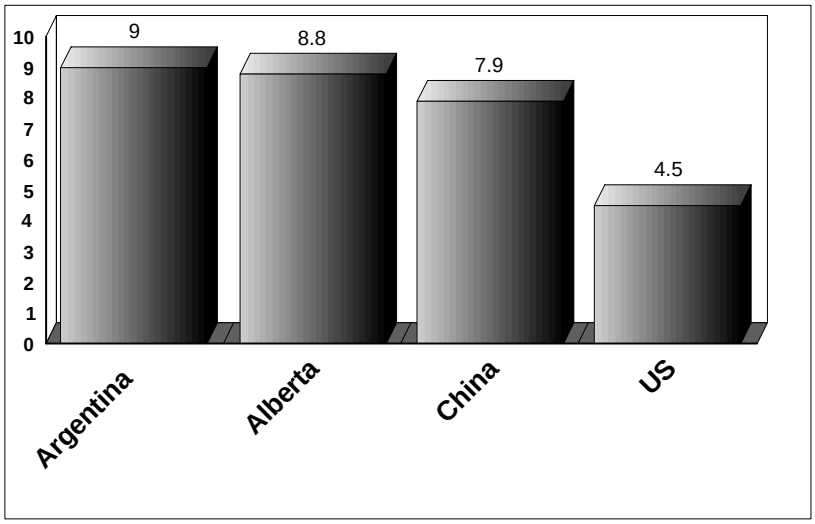
Over the short term, with large honey inventories in North America, price increases may be much less than what US beekeepers would like to see. The risk that arises is that producers forfeit their honey to the government if prices only rise to 60 cents or less. Given that the US administration is currently dealing with problems of sugar forfeitures, patience may wear thin with less sympathy extended to the honey industry. This problem could be partially resolved by adapting the LDP for honey to include recourse loans and thus exclude the opportunity for forfeiture. There is a possibility that this will occur.

The potential for the trade cases against Argentina and China to effectively eliminate or limit their participation from the market, is a double-edged sword. It is likely that some upward price movement will occur, but if this serves to maintain less efficient producers in the market, their additional shipments to the market may temporarily dampen prices. Also, as free trade advances, the survival of many US honey producers is in jeopardy. The basic problem in the United States, as reported numerously by those familiar with the US honey industry, is that yields are too low and labour rates, currency markets, pest and disease problems and the state of relations between sellers (beekeepers) and buyers (packers) all work against the industry. These problems are, however, reduced when a shift towards niche production occurs for all but the most highly efficient producers.

Overall Assessment

In general, countries are seen to rise to a competitive level in keeping with factors that affect cost, quality, and marketing. This chapter presented a basic summary of these factors, many of which were previously discussed in chapter 5. It included a subjective measurement of competitiveness between the four honey-producing competitors in this study. Illustrated in Figure 6.5 is the comparison of the overall competitiveness scores of these global competitors. Argentina rated the highest overall competitiveness score at 9.0, followed by Alberta at 8.8. China ranked third with a score of 7.9 and the US came in fourth at 4.5.

Figure 6.5. Competitive Ranking of Regions



The accuracy of these subjective measures could be improved with the availability of new information, insights, and perspectives. The calculated competitive scores reveal the strength of the Argentine honey industry, but also the ability for Alberta to prosper if costs are kept under control and modest gains are made in the area of quality and marketing. Because of the vast size of the Chinese honey industry, it will always be a competitive factor, but its position will be

increasingly challenged by Argentina and other up-and-coming nations. The United States has excellent honeys; however, their costs tend to exceed those of competitors, making the future outlook commodity honey production less promising than for niche honey.

The world is always changing and "wild cards" like US trade rulings can quickly alter the future outlook. All beekeepers, but especially exporters, can benefit by understanding the factors that impact competitiveness in domestic and global honey markets. This provides beekeepers with an opportunity to be proactive, rather than reactive to changes in the industry and marketplace. This document has presented a number of ways of looking at competition. Looking at the direct competitors is only one aspect of competitiveness. Being aware of the nature of competition for suppliers, retailers, packers, and wholesalers is essential for a more complete picture. Furthermore, there are other products on the grocers shelves that compete with honey. Some, like coffee, tea, cough syrup, and cereals, should be viewed as partnership products that can leverage the value of the honey industry.

This report was designed to look at competition in a holistic fashion: the intensity of rivalry among existing enterprises, the potential threat of new entrants, the threat of substitute products (and the value of complements), and the bargaining power of buyers and suppliers. It is hoped that a more solid understanding of these essential "forces" of the competitive honey industry will provide Alberta producers, packers, and exporters with a unique opportunity to grow and prosper.

Chapter 7. Summary, Outlook and Implications

A. Competitive Forces

Competitive forces come in many shapes and sizes. The typical practice of competition is that of pitting one enterprise or one country against another. However, to be competitive, enterprises must consider a broader range of factors affecting competition and markets. Competitive forces present in the honey industry (any industry, in fact) include:

- the bargaining power of buyers (packers, food processors and retailers) and suppliers (input suppliers);
- the threats of substitutes (like jam or corn syrup) and the opportunities posed by complements (tea, breakfast cereals, and health foods); and lastly,
- the rivalry among existing global competitors and the threat of new entrants or competitors.

Buyers

Retail honey buyers operate in a highly competitive market with slim margins and new challenges posed by merging and expanding food processors. Their response has been to consolidate, actively engage in private labeling, and on some accounts, to increase fees to list or position less powerful branded products or suppliers on retail shelves. With reduced bargaining powers in the new retail environment, packers are pushed to lower their wholesale prices to remain profitable. Foreign exporters from countries such as Argentina, China, Vietnam, and India, are eager and able to cater to the same price market that packers confront. The inevitable animosities that arise and the political fall-out from this situation are especially evident in the United States, the heartland of food and retail industry consolidation.

Suppliers

The bargaining power of suppliers is not considered to be as strong or as threatening as the competitive forces posed by buyers. Suppliers to the honey industry, such as bee, equipment, and chemical suppliers, maintain fairly strong bargaining power because of their size and, at times, due to the lack of alternatives in the market. However, many suppliers whose prosperity is closely linked to the general prosperity of the honey industry (like extraction equipment or chemical suppliers), find that profits decline when the market declines as capital investment is deferred and input costs are minimized. A strategy to limit the bargaining power of suppliers is exercised by large cooperatives that order bulk supplies and distribute them to members at discount prices.

Threats of Substitutes

With a growing number of consumer products that are sweetened and competition from alternate sweeteners, the threat posed by substitute products is increasing. When the price for honey creeps up, food processors turn to high fructose corn syrup (HFCS), fruit concentrates, and sugar while consumers might opt for jam spreads and sugar. Therefore, given the connectedness of these industries, a basic understanding of their state is important in understanding the future of the honey industry. There is little doubt that low prices for honey, since 1999, has led to rapid

growth in the use of industrial honey: twenty-nine breakfast cereals in an Edmonton-area supermarket in Spring 2000 were found to be sweetened with honey. Substitutes for honey such as blackstrap molasses, barley malt, and black cherry concentrate, are getting shelf space in growing health-focused sections of mainstream supermarkets. A challenge for the honey industry is to combine research results confirming health benefits of honey with shifting consumer priorities, time pressures, and lifestyles.

Opportunities for Complements

Complements for honey can be luncheon meats, salad dressings, barbeque sauces, cough syrups, tea, and coffee. Complements enhance value. The importance of considering complements rings clear in the case of coffee. A simple calculation suggests that nearly a three billion pound annual market (1.4 billion kg) could emerge in North America if everyone sweetened their coffee with honey instead of sugar. Of course this is not likely to happen, but even a sliver of this market would be substantial. An important point emerges: the honey industry should consider not only the products it competes against, but also the products with which it can partner in order to compete more effectively. For Alberta, the focus will be on high value products and light-coloured honey.

Competitive Rivalries

Analyzing the rivalry among existing competitors and the threat of new entrants or new competitors in global markets is difficult when a country, as opposed to a company, is considered to be the competitor. While producers in any country can operate anywhere from 30 to 12,000 hives, generalizations can be made about competitive production in key regions. This study investigated the competitiveness of Argentina, Alberta, China, and the United States in the US marketplace, and to a lesser extent, the European Union (i.e. France, Germany, and the UK).

Using the Information About Competitive Forces

Understanding these competitive forces**C**buyers, suppliers, substitutes, complements, and existing, new, or emerging competitors**C**provides enterprises with comprehensive information to better understand the competitive forces at play in the market. This understanding can be used in developing a strategic approach to marketing and all facets of competitors. It can also be applied in informed decision making regarding inventory management, investment, price setting, product development.

B. The Future Outlook and Implications

The future of the honey industry can be divided into the short, medium and long-term. The current short-term focuses on supply and demand, prices, government subsidies (notably the US loan deficiency payment or LDP program), and the US countervailing and dumping cases underway against Argentina and China. The short-term addresses pricing, input, and inventory management decisions.

The longer term focuses on the basics of competitiveness**C**cost, quality, and marketing advantages and disadvantages, along with consumer or market trends, including long-term price trends. Ultimately, the long-term is focused on sustainable profits based on the solid fundamentals of competitiveness. A keen understanding of the longer term is important in making major investment decisions and developing strategic plans. Making a major investment decision based on limited or short-term competitor and market information can be a dangerous approach to business. Developing the right strategy for the wrong future is not advisable either. Uncertainty complicates things, but good information helps minimize the risks.

Medium-term Outlook

For the medium term, individuals can determine and explore the threats and opportunities for the honey industry. These have been made larger by expansion in world trade which has spawned new markets and competitors. At the same time, the Internet and telecommunications industries have increased the flow and availability of data. Bigger opportunities and bigger threats make information more valuable as long as it is well-organized and is connected to decisions and strategies.

Short-term Outlook

The short-term outlook for sales of Alberta honey in the US market appears extremely positive. For European honey markets, the situation is reversed: a possible flood of honey from China and possibly Argentina could quickly depress European prices while trade-limiting EU quality specifications could negatively impact market access. Based on these and other factors, Canada=s share of the European market has been waning.

In early March 2001, the United States, our key export market, imposed a preliminary countervailing duty of 6.55 percent on Argentine shipments of honey. With the possibility of additional countervailing and dumping duties looming for both Argentina and China, their share of the US market could be significantly reduced. Other countries such as Mexico, Uruguay, Australia, New Zealand, Vietnam, India, and Canada could benefit from the resulting supply gap and upward pressure on prices created by this event.

On the other hand, prices could rise to the point where price-sensitive industrial buyers begin turning to honey substitutes for use in processed meats, breakfast cereals, etc. Half of the 360 million pound US market dedicated to industrial honey sales could contract, soften demand, and limit the rise in price levels. A reduction in demand for industrial honey would have a greater impact on producers from sub-tropical and tropical countries, whose honey is a darker grade, than regions like Alberta where white honey production predominates. However, given that dark and white honey prices tend to move in tandem, an overall softening of prices for all honey types could unfold.

Inventories account for another key factor determining where supply, prices, and profits are headed. Globally, the recent lower-yields of honey crops in China and Argentina may contribute to an increase in prices. Conversely, with current inventories of honey in the United States at extremely high levels, prices may stay low over the next six month period or possibly longer. Many in the industry feel that current prices will stay at or near the $0.60/lb (US) level.

Prices in this range are insufficient to inspire US beekeepers to sell off their inventories; this could possibly result in the forfeiture of a portion of the 43 million pounds of year-2000 honey under loan on the US marketing loan and deficiency payment program in late February 2001. A key risk posed by the LDP program is the non-recourse loan provision for 2000-crop honey. It allows producers to forfeit their honey to the government in lieu of payment on their loan which was set at $.065 per pound (excluding interest payments). A shift to a Arecourse@ loan, where other assets stand as collateral and honey is not forfeited, would significantly reduce the market risk of the program. There are some signals that this change may be undertaken. Regardless, producers and industry watchers should pay attention to the buy-back program of United States government. Similar to the LDP, it created substantial marketplace problems in the early 1980s. During that period, the US government sold an inventory glut of an estimated 100 million pounds.

Long-term Outlook

In the longer term, future success in non-niche, global honey markets resides in producing honey at low costs, improving product and service quality, and marketing efficiently and effectively. The costs for producing containerized honey delivered to the US market for the four key study regions were as follows (all in US currency): $0.50 for Argentina, $0.54 for Alberta producers, $0.45 China, and $0.67 for the United States. These prices reflect table quality honey, although actual and perceived quality may vary. A competitiveness score encompassing cost, quality, and marketing capabilities was calculated as a way of gauging the relative position of key competitors in the market. Argentina ranked highest with a score of 9, closely followed by Alberta with 8.8, then China with 7.9, and the United States with 4.5. (see Chapter 6 for further details).

The significant decline in the number of hives in the United States and China indicate that these countries are encountering problems most likely related to the low-priced, global commodity honey market. High input costs and low yields impact US producers so that only the most efficient producers can compete in bulk markets; this suggests that many producers will have to switch to niche production and marketing channels while others will be forced to exit the industry. If China and Argentina are blocked from the US market due to the ongoing trade cases, the decline will occur over a longer period of time. For China, scattered floral sources, expensive transportation, rising labour costs, and urban migration are creating growing pains for the honey industry. China is also looking inwards to an increasingly affluent domestic market with millions of one-child families that can afford luxury products. The future for China as a world honey trader appears set to decline. If the US trade case against China amounts to significant levies, the decline stands to hasten.

Argentina is enduring tough economic conditions, notably high interest rates that have greatly impacted producers with significant debt loads. Furthermore, with the Argentine peso pegged to the strong US dollar, the country has a distinct currency exchange disadvantage (the same applies to the Chinese renmimbi). Conversely, high unemployment helps keep labour wages low and producers, by developing their own pest and disease control regimes, can keep their costs down. Furthermore, the Argentina's export-oriented agriculture industry has grown, with a larger expanse of floral source material for the honey industry to exploit. If the United States dumping and countervailing case against Argentina leads to duties that push prices up by $0.15 (US) or greater, growth will likely be curtailed. Regardless of these short to medium term factors,

Argentina will likely maintain a dominant position in the world market given movement towards freer trade. This is largely due to their basic fundamental costs, and to a lesser extent, the quality advantages of their industry along with the ability of beekeepers to rapidly expand their operations given sufficient economic motivation to do so.

For Alberta producers, the findings can be regarded as positive. While Argentina is very competitive, recent prices of $963/MT (US) or $0.44 per pound (the average price for honey in the US market in 2000) are probably lower than the country=s honey industry can sustain. Either trade sanctions or adjustments in taxation policies may cause these prices to rise. If not, reports that beekeepers are abandoning their hives may increase in frequency. This evidence, along with reports of China=s demise, suggests that the industry has passed through a low period with respect to prices. Prices may remain low in the long-term as a result of foreign government subsidies, or if new competitors such as Uruguay, India, and Vietnam are able to prosper with current low prices.

Strategy

In this report, we have presented and categorized information into six distinct competitive forces. In learning that the Argentine threat was not as ominous as first believed (i.e., when this project was initiated) and that China was in a state of gradual decline in export markets, other threats and opportunities emerged. In studying the US loan program and trade cases and the potential rise of new competitors like Vietnam and India, we came across new concerns and issues to monitor.

For producers, packers and marketers of Alberta honey, some key questions, namely, “so what?” How can this information be connected to decisions and strategies? Clearly, this report is only a beginning and even industry forecasters, especially in volatile agricultural markets, are often humbled when their forecasts and reality do not coincide. For producers, packers, and marketers of honey, the outlook can change based on new information and hopefully this report has peaked interest in monitoring the industry, learning more about all that influences it and being aware of competitive forces.

Pricing, inventory adjustments, and input purchasing decisions are made based upon short-term market information. The focus here is on minimizing costs and securing the best sales price. However, this approach generally applies to everyone in the market. To establish a strategy, producers have to look for ways of elevating above the low-price crowd by distinguishing our honey from other bulk suppliers. We are aware of a quality distinction that puts Alberta in a good position to differentiate our honey for greater value. This may require a longer look at investment decisions and strategy formulations.

SURVEY OF NORTH AMERICAN PACKERS AND EUROPEAN HONEY BUYERS

North American and European Honey Buyer/Packer Perspectives

Provided below is a synopsis of the information gathered through a survey of major North American packers and European honey buyers conducted in October 2000. This survey represents a portion of a broader study on the global honey industry conducted by the Competitive Intelligence Unit (Economics and Competitiveness Division, Alberta Agriculture, Food and Rural Development).

The survey investigates honey packer and buyer perspectives on:

- their dealings with retail and industrial honey buyers,
- educating retail and industrial buyers,
- dealings with honey producers as suppliers,
- a comparison of world honeys, and
- the future outlook of the global honey industry.

1. Dealing with Retail and Industrial Buyers

Pricing, Promotional Expenses and Retail Margins

- In some cases, retailers are marking prices up 35-60 percent. When honey prices paid by retailers drop, the retailers don't tend to drop prices for consumers.
- Honey is not a destination item--people don't go to the supermarket for honey, so the stores will probably keep the prices high. Honey prices for industrial users have dropped by 30 percent recently and you don't see a change in the price of cereal.
- The competition is selling honey below cost to gain market share and is forcing us to do the same.
- Today, you don't just have to meet and beat the competition on price, you also have to do this on promotion. Our promotional expenses amount to about 10 percent of our selling price.

Consolidation

- Our buyers are merging and becoming larger. In the future we will likely see large buyers merge and want to work with fewer suppliers (i.e., packers or brokers). Our customers are increasingly consolidated and have therefore developed purchasing leverage.

Packer Relationships with Retail and Industrial Buyers

- Retailer accounts are hard to hold on to.
- Retailers have the power to negotiate on price because they can go around and play packers off on each other. There is no such thing as a supplier contract. You supply until another quote beats you. Above and beyond price, you need to provide some type of allowance that gives the buyer the incentive to buy from you.

- If you have a long term relationship with them, they might tell you what price you have to come in at to get the bid, but in general, there is no room for loyalty.
- There is little loyalty in the bulk industry. Sometimes you have a customer who backs out of a six month contract at the mid-way point. Maybe they found a cheaper supplier and want you to match their price.

Supply Chain Management

- Everyone in the grocery industry is under pressure from a major and relatively new retailer and the suppliers program it operates.

Electronic Bidding

- Recently, and likely in the future, industrial packers will be given a number and told to go on-line to bid for major honey supply contracts. There may be negative feedback and the quality and service may suffer should prices be pushed too low.
- E-commerce bidding pushes the trust relationship issue “out the window”.
- The problem with this type of bidding process is that neither time nor money are saved and you lose the face-to-face contact that is necessary, especially when you have to call in a favour.

Food Safety and Quality

- Consumer paranoia and food safety awareness issues are being felt in both retail and industrial honey markets.
- Food safety (and customer perception of it) is critical to our business and the honey industry in general.
- In the industrial honey market, food quality is a growing issue that creates big expenses. Buyers want to see a Hazard Analysis Critical Control Point (HACCP) program in place.
- In the European market, there is a big risk for any supplier that they will be found with GM honey. The major supermarkets in the UK are telling their customers that all private label honeys are made of GM-free ingredients.

2. Dealing with Honey Producers/Suppliers

General Supplier Relations

- The problem with beekeepers is that they all think their honey is the best and they deserve the best price for it. The packer tries to sell for the best price, but competition for market share is tough and price is the issue.

Quality and Food Safety

- U.S. honey can be inconsistent in terms of quality. It could be a lack of internal control and not being rigid enough on quality standards.
- It makes it difficult to guarantee food safety when good manufacturing practices don't exist for our honey producers. None have really good food safety programs.
- Beekeepers will learn of some of the problems through packers. Producers cannot stay behind the times by thinking that bacteria won't live in honey, therefore there are no worries. There are worries and concerns with food safety that will not go away.
- Would like to see the National Honey Board take some money and create an inspection service where they would go out and help beekeepers (not penalize them) by implementing a grading system. They should develop grades of packing facilities.

- Then they could work to get beekeepers into a better category of facility. The USDA could help initiate HACCP or good manufacturing practices through advice and help.
- The Canadian Food Inspection Agency (CFIA) has a voluntary system. The system needs teeth so that they can shut some operations down where necessary.

Contracting

- We would like to offer long term legal contracts for shipments of honey; perhaps three to six months, but smaller producers do not make enough to supply those time periods. Smaller producers could combine to make alliances and fill larger, longer term contracts.

Financing Sales

- Perhaps the biggest problem facing honey producers and packers alike is the need for financing. Generally, beekeepers want money now because their cash flow position is not good. What producers need to recognize, however, is that it can take packers a year to turn honey into revenue. Already, packers are forced into debt positions and when beekeepers demand cash payments, it can be difficult or impossible.

Global Supply

- For imported products (excluding Canada), packers tend to deal with brokers because it is too difficult to manage volumes. Argentine honey from brokers has been priced too high and there is plenty of domestic and Canadian honey to compensate.
- If Argentine honey was a cent a pound less than a Canadian or U.S. equivalent, we would go with the North American supply. However, if the difference was two cents different, they would probably switch to the Argentine because quality is similar.
- As far as our experience with Chinese honey goes, you can get adulterated products. For our operation, it is often better than what was ordered. If I order from China from a reputable source, there are zero problems. Probably the greatest difficulties are experienced when beekeepers harass the FDA to get imported Chinese honey tested.
- At present, packers are totally confused about what they should be doing with their inventories of honey because of the LDP program and the dumping cases that have been filed against China and Argentina. They have been buying to ensure they have enough honey for at least six months.
- There are advantages to domestic vs. imported honeys. First, the product is readily available and you can generally get a decent financing arrangement. With overseas suppliers, it is generally cash on delivery.
- We're fairly close to Mexico and have used their honey in the past, but now it seems we cannot get long term contracts with them. Everything is on a cash up-front basis. With Mexico, we have also had some problems of promised shipments not being delivered.

3. Commentary on Global Honey Supplies and Service

Alberta and Canadian Prairie Honey

- The canola content in prairie honey leads to crystallization that is not desirable except for creamed honeys. However, recent canola hybrids appear to harden less than earlier varieties. (This untested notion was supported by a few packers.)
- Canola has an off-flavour and smell (comment repeated on numerous occasions).
- You can go higher with quality in producing a water white honey, but consumers have

it in their mind that honey is a golden-coloured food product; they are afraid very white honey it is not honey at all.

- The best use for Canadian material is as a cream honey because of its natural ability to granulate. Canada has the best colour producing ability year after year.

Argentina

- Sometimes the colour of a lot of Argentine honey is variable (e.g., claim it is white when it is actually extra light amber).
- There are vast amounts of different honeys that come from Argentina. It is very interchangeable with Canadian and U.S. honeys and enters into both the bottled and ingredient/industrial markets.
- Argentine bottle grade honey is generally of high quality and light colour. One advantage of their honey is that it doesn't granulate.
- Argentine honey has a very neutral taste making it an excellent blending honey. Argentina is also an excellent source of organic honey which is becoming popular in Europe. The top five countries for organic honey are Argentina (the biggest), Mexico, Turkey, Australia, and New Zealand.

China

- Typically, the honey in the frame is not left long enough to get capped, allowing for enormous production volumes. The honey is, therefore, generally harvested green with about 24 percent humidity. At this high moisture level, the honey can ferment and the high acidity can leach metal out of the container and contaminate the honey.
- Some Chinese drums may be in excellent shape while others may be pretty bad.
- We do not bottle any Chinese honey. The bakery industry is the target market for Chinese honeys where flavour isn't as important as in the bottled market.

United States

- The extent that U.S. honey is used depends on where price is at. It can be used interchangeably with Argentine honey in some blends, especially for private label honey.
- U.S. honey goes all across the board in terms of varieties. Even dark grades have good flavour. It is the most versatile honey.

Blending World Table Honeys

- A typical blend appears to be 35 percent U.S. honey, 40 percent Argentinian, and 25 percent Canadian. Canadian honey rarely exceeds 40 percent of the blend, while Argentinian rarely exceeds 65 percent. Depending on price and quality, packers may use up to 30 percent Chinese honey in their blends, likely at the expense of Argentina.

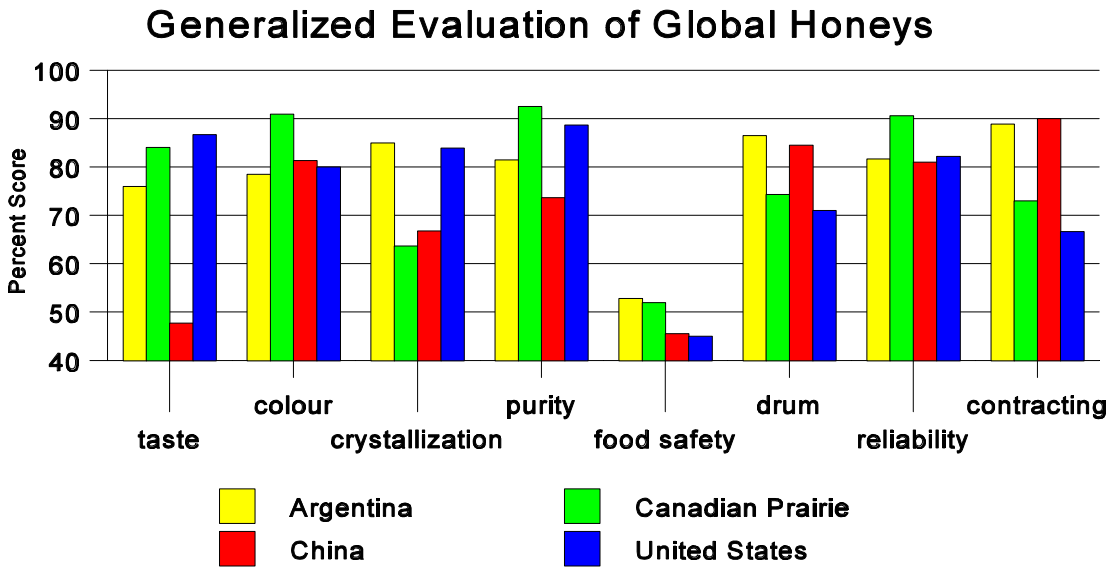
4. Rating World Honeys and Suppliers

Eleven honey packers from the United States and three honey buyers from Europe were asked to rate honey from Argentina, the Canadian prairies, China and the United States.

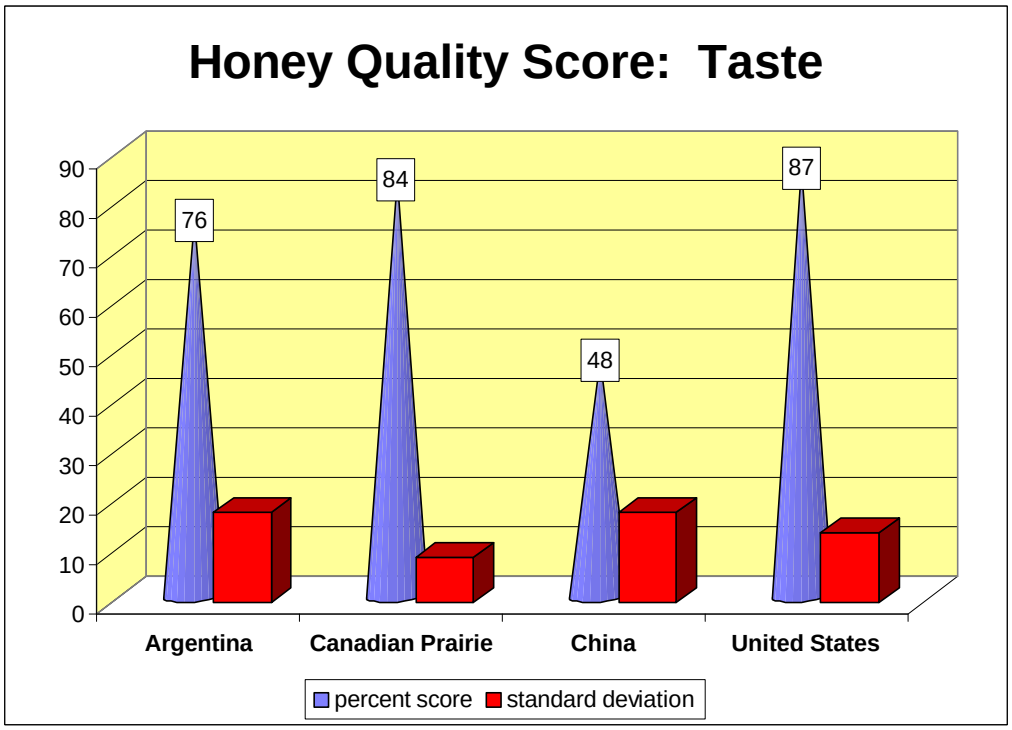
The eight variables were rated from zero to 100 percent and were defined as follows:

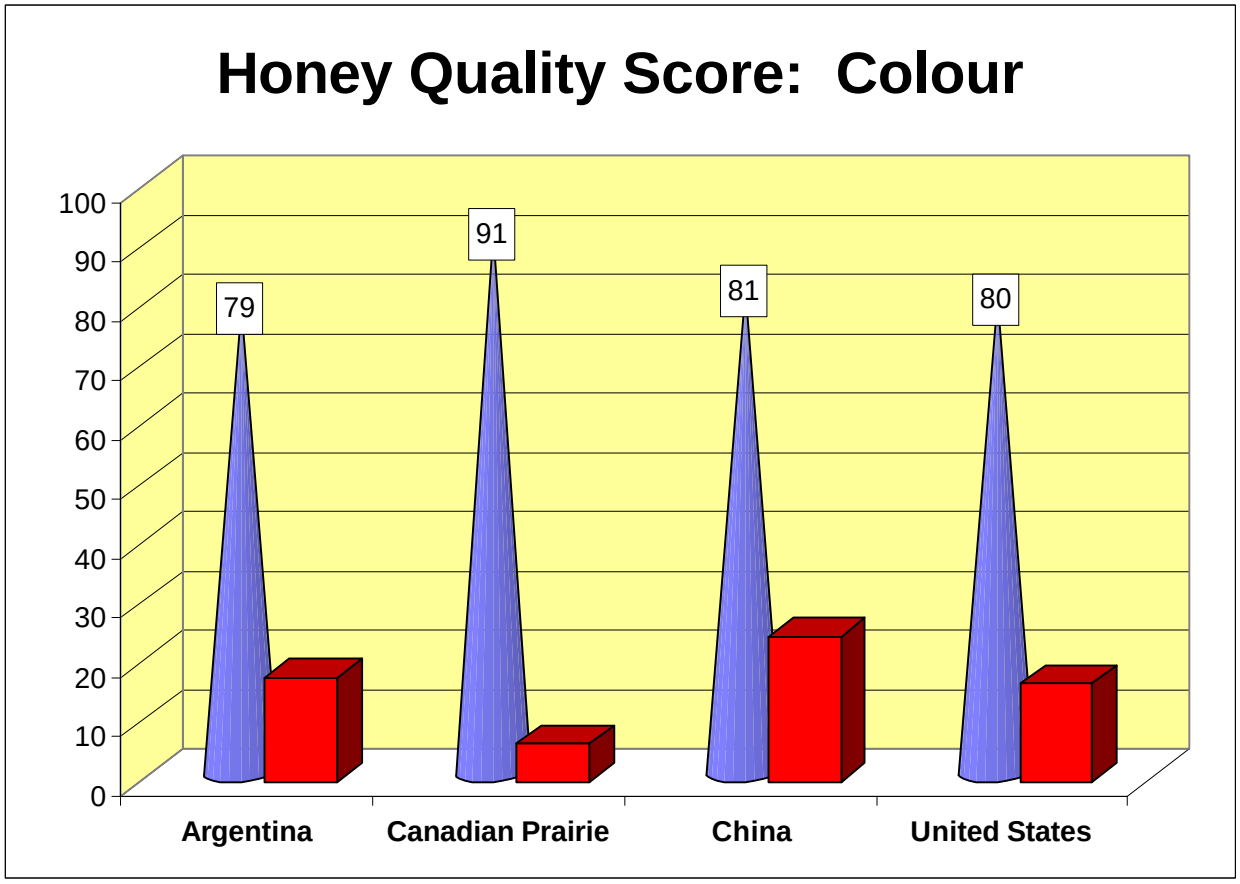
- Taste: Packer or buyer perception of “pleasant” taste.
- Colour: Consistency of colour - getting the exact colour that was ordered.
- Crystallization: Honeys that have a tendency to crystallize are scored lower.
- Purity: Honeys that have been adulterated in the past are scored lower.

- Food Safety: Packer/buyer perceptions of beekeeper food safety programs/procedures.
- Drum Quality: Quality and appearance of drums.
- Reliability: The tendency for suppliers to provide the right product at the right time.
- Contracting: The ability for producers or exporters to provide contractual terms.



In the eight charts that follow, the average percent score for each region is presented (cone figures). The box figures provide an indication of the agreement between surveyed buyers and packers (measure of standard deviation). Smaller boxes indicate similar responses among packers and buyers, while larger boxes imply greater variation in responses.




Honey Quality Score: Colour
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80
70
60
50
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30
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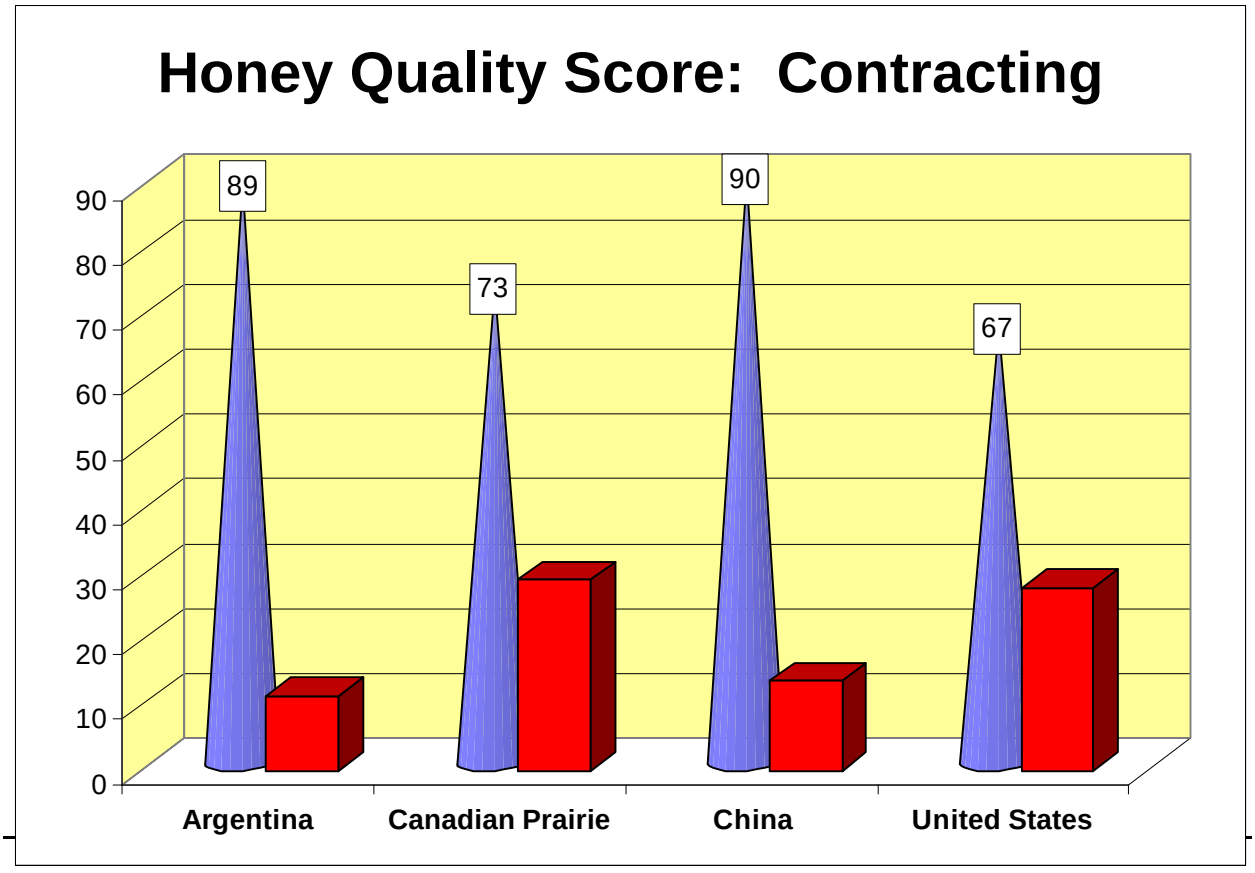
79
91
81
80
Argentina
Canadian Prairie
China
United States


Honey Quality Score: Contracting
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80
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60
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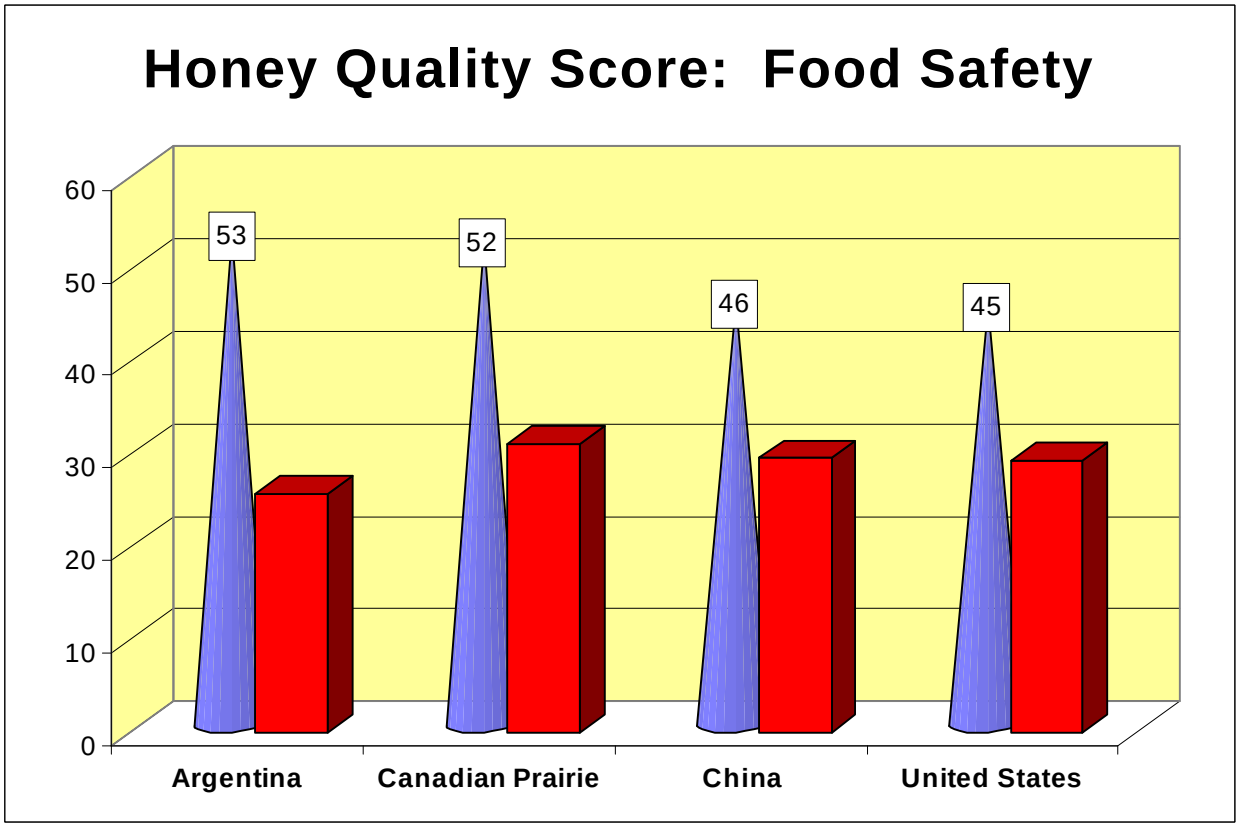
67
Argentina
Canadian Prairie
China
United States


Honey Quality Score: Food Safety
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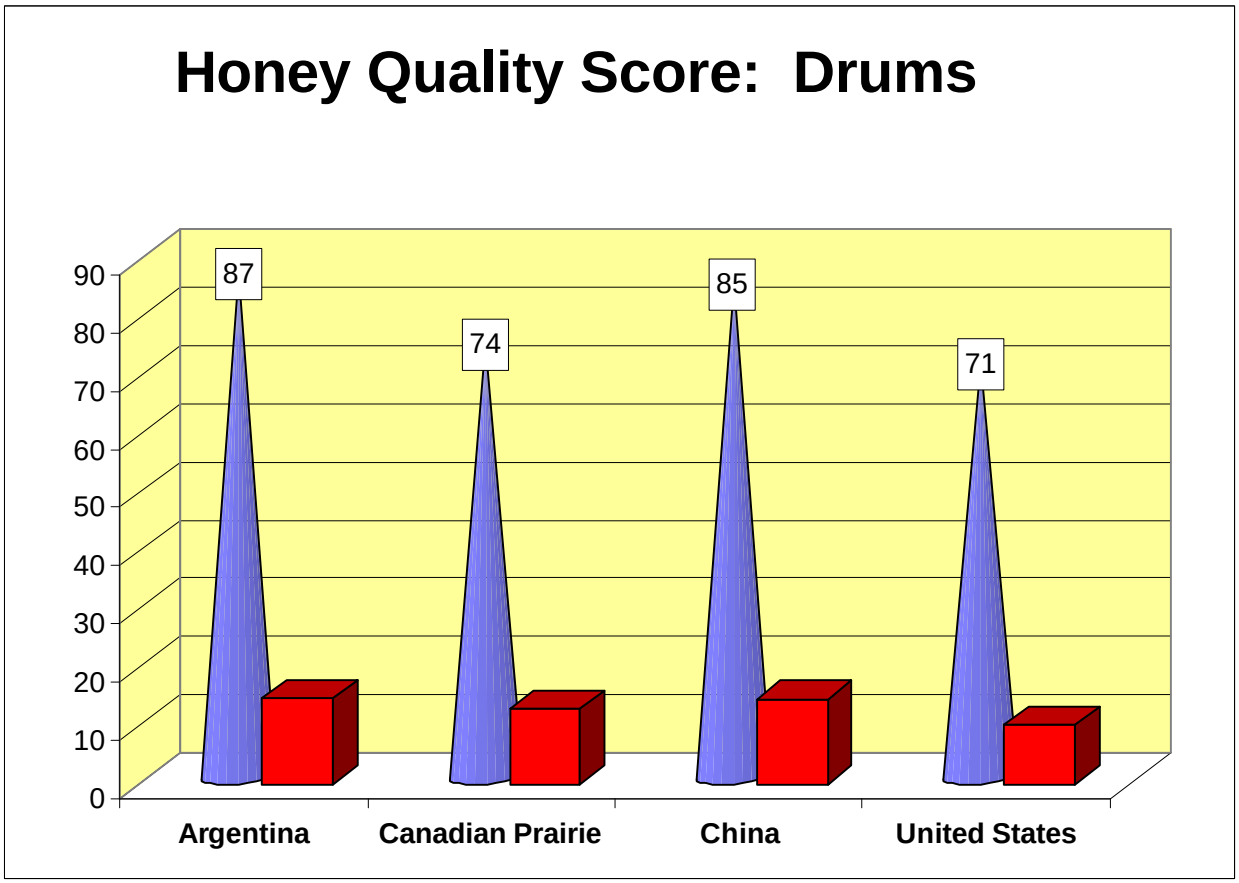
53
52
46
45
Argentina
Canadian Prairie
China
United States


Honey Quality Score: Drums
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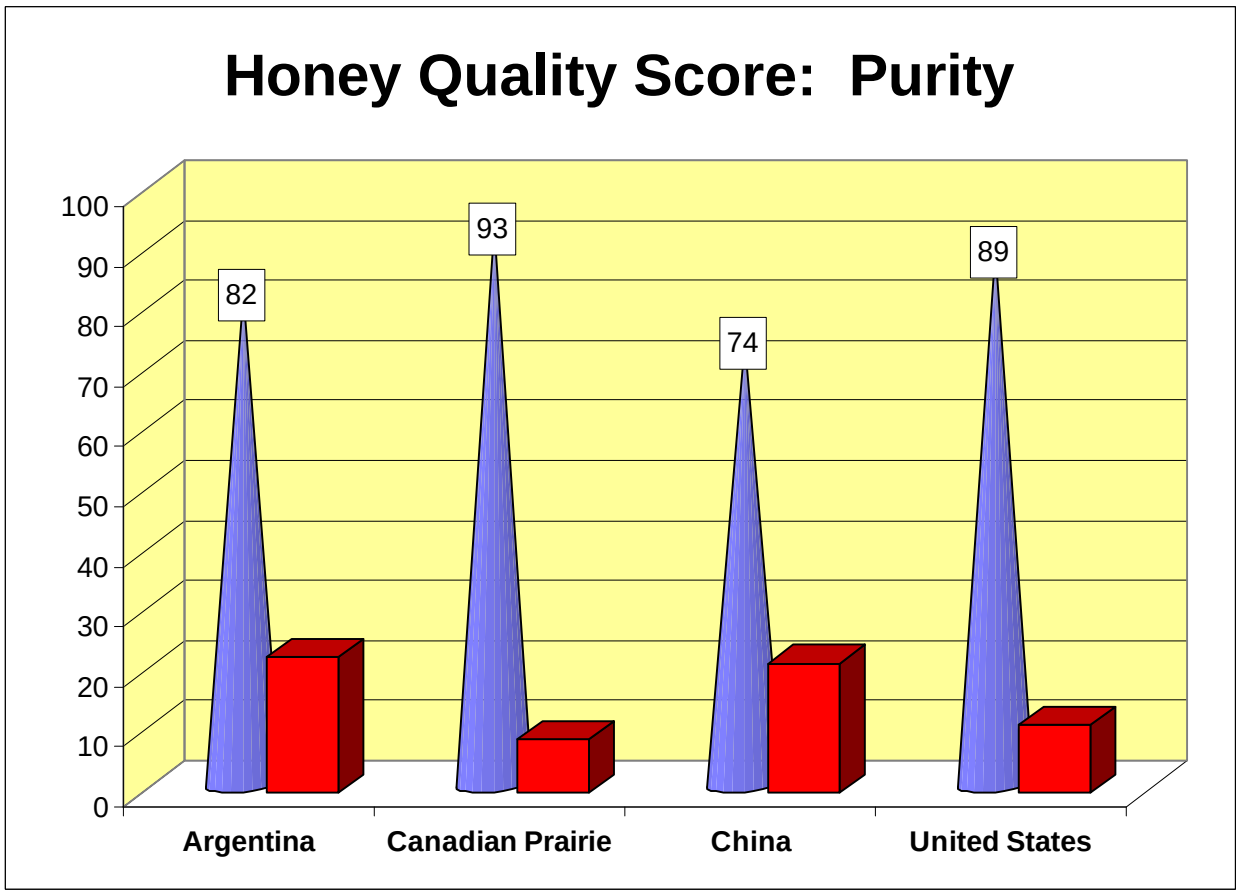
71
Argentina
Canadian Prairie
China
United States


Honey Quality Score: Purity
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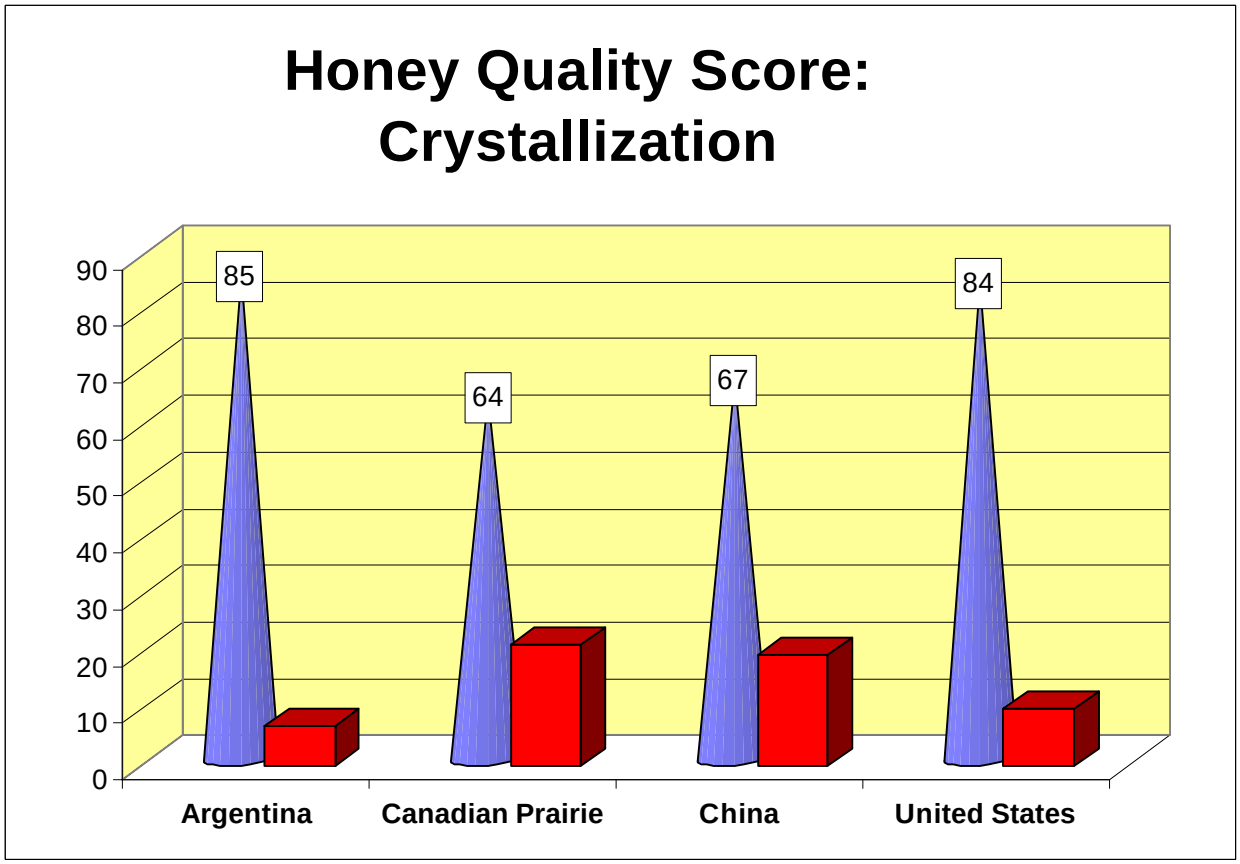
Canadian Prairie
China
United States


Honey Quality Score: Crystallization
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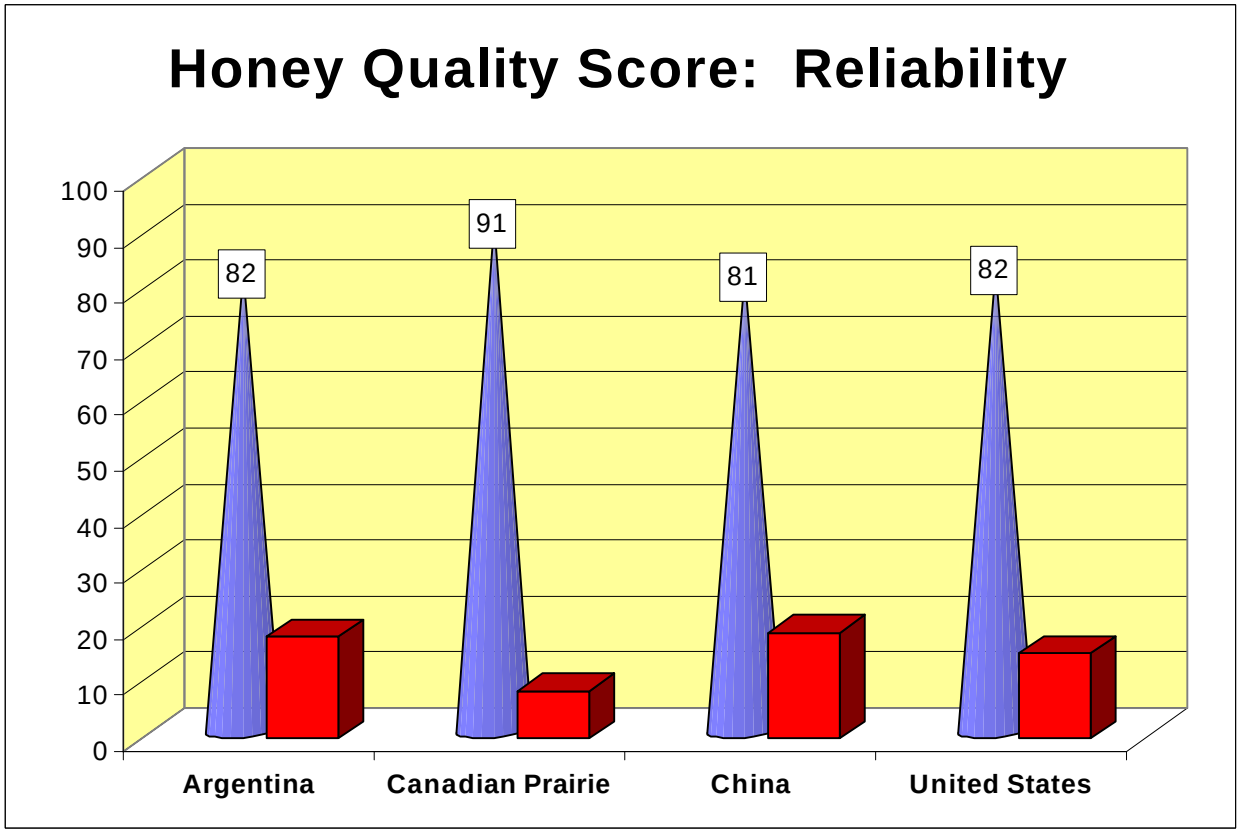
China
United States



Educating Industrial and Retail Buyers on Sources of Honey and Processing

Methods

- The packers were responsible for addressing this along with the relevant industry organization: the National Honey Board (NHB) in the United States and the Canadian Honey Council in Canada.

6. Future Industry Outlook

The key supply regions of the world and why?

- The current anti-dumping case, potential climate change, and declining consumption were identified as the issues that will most likely drive the world supply situation in the coming years.
- Depending on the interplay between these and other issues a number of new potential competitors were identified including (in order of importance): India, Vietnam, Russia, Hungary, Bulgaria, Poland, Romania, Mexico, Brazil, and Uruguay.

The types of honey found on the grocery shelf?

- Sales of niche honeys has generally been flat. Good white table honey is here to stay.
- There has been a tendency for honey varieties to decrease; it seems to be down to clover and wildflower while all others are losing ground (notably orange and sage).
- Whether you agree with organic honey or not, we are going to see more of it.

The penetration of private label honeys?

- We see the private label market increasing (now witnessing 35 percent private label on shelves). In the northeastern United States, they have doubled the private label volumes in the last ten years. While most believe the private label market will continue to expand, others suggest that this market is almost saturated and can't get much worse.
- Private label honey is where the store makes money. When you negotiate with the stores, they are now in a more competitive position. The positive side of servicing the private label market is that you have no promotional or slotting expenses.

The types of retail food products containing honey?

- There is potential for growth in new products. There is work being done in New Zealand looking at health potential for honey. There will be concerns, however, that quality and food safety issues may blow this market opportunity out of the water.
- We should see more medicinal products containing honey. We have to go beyond breads, crackers, meats and so on.
- It seems like it would be more important to get traditional users of honey (i.e., cereals, breads, meats, etc.) to up the percentage of honeys they use in their products. Honey has a good image in the eye of the consumer.

The types of industry alliances taking place between beekeepers and between processors?

- Beekeepers could get stronger through consolidation and contracting. They might gain more control over quality and price by controlling and contracting larger volumes.
- It seems that if co-extraction were the only way to go, then the coops would be the only ones in the market today. There are probably lots of ways to see our industry configured.
- Beekeepers are individualistic. They may need to become more willing to forge alliances.
- If the prices stay low, we'll probably see not only the number of beekeepers shrink, but there will also be a polarizing of beekeepers into two distinct groups: very small and specialized (or strictly hobby) and extremely large operations.
- I can't speak for beekeepers, but there is a need for consolidation among packers to deal with big manufacturers and chains.

The quality of honey (with regard to microbial contamination, chemical residues, and GMOs)?

- This is an area of significant concern. There needs to be more effort on proactive bee research.
- We believe that higher standards will be put on honey. It would be valuable to have a world standard that would eliminate the possibility for some European countries to use pollen counts as trade barriers.

- Not many producers value-sell their products pesticide-free or with Hazard Analysis Critical Control Point (HACCP) certification--no one has this. Will these sorts of measures come into play? Maybe, but you also have to look at price and right now, with prices so low and with no guarantee that you will get more for doing this, it may not be coming soon.
- GMOs are becoming more of a concern and the industry needs to look closely at this issue.

The purity of honey (e.g. problems with adulteration)?

- It would be beneficial to see cheaper tests through centralized testing (i.e., a facility where tests could be done in large volumes for a low cost).
- Testing procedures can be unreliable and you have to have something that the buyers (manufacturers) believe is accurate. If we arrive at an acceptable testing procedure, must make sure in advance that the buyers also accept the test.
- The adulteration issue is overblown. What is needed are international criteria standards and an international body.
- Five years ago when honey prices were high, we had more problems with adulteration than we do now. When you had problems, you learned a lot about your suppliers and you made sure you didn't get burned twice by the same supplier.

Government intervention?

- The government won't spend much time dealing with honey. “Smoke and fire” will get their attention, and honey doesn't have the profile to attract such attention.
- We expect more involvement from the government as they try to regulate more. If Al Gore becomes the President, we expect more regulations.
- The government won't fund standards of identity for honey. They don't have the research money and honey is not a pressing food category.

7. What information do you feel should be conveyed to beekeepers?

- Every individual is different. Working with beekeepers is better where the relationship is based on trust and support. Sometimes you truly cannot go up on price because producers will turn to someone else for two cents a pound. The packers and the beekeepers are together in this industry, but unfortunately, at times we can be the worst of enemies. We are at a low point in the industry and things will pick up for both packers and beekeepers.
- Beekeepers need to understand the pressure we are under to deliver quality honey on time and at lower and lower prices. The only thing low prices do for packers is make it easier to carry inventory. What is more important than the going price is that our competitors are buying honey for less than us. If you do pay more for your honey, you're dead in the long run.

Honey Exporters

According to the Foreign Agricultural Service (FAS) of the United States Department of Agriculture (USDA), China was the world's largest exporter of honey over the five year period beginning in 1994 with 102,183 Metric Tonnes (MT) valued at approximately US$94.5 million followed by Argentina with 62,436 MT valued at just over US$ 86 million.

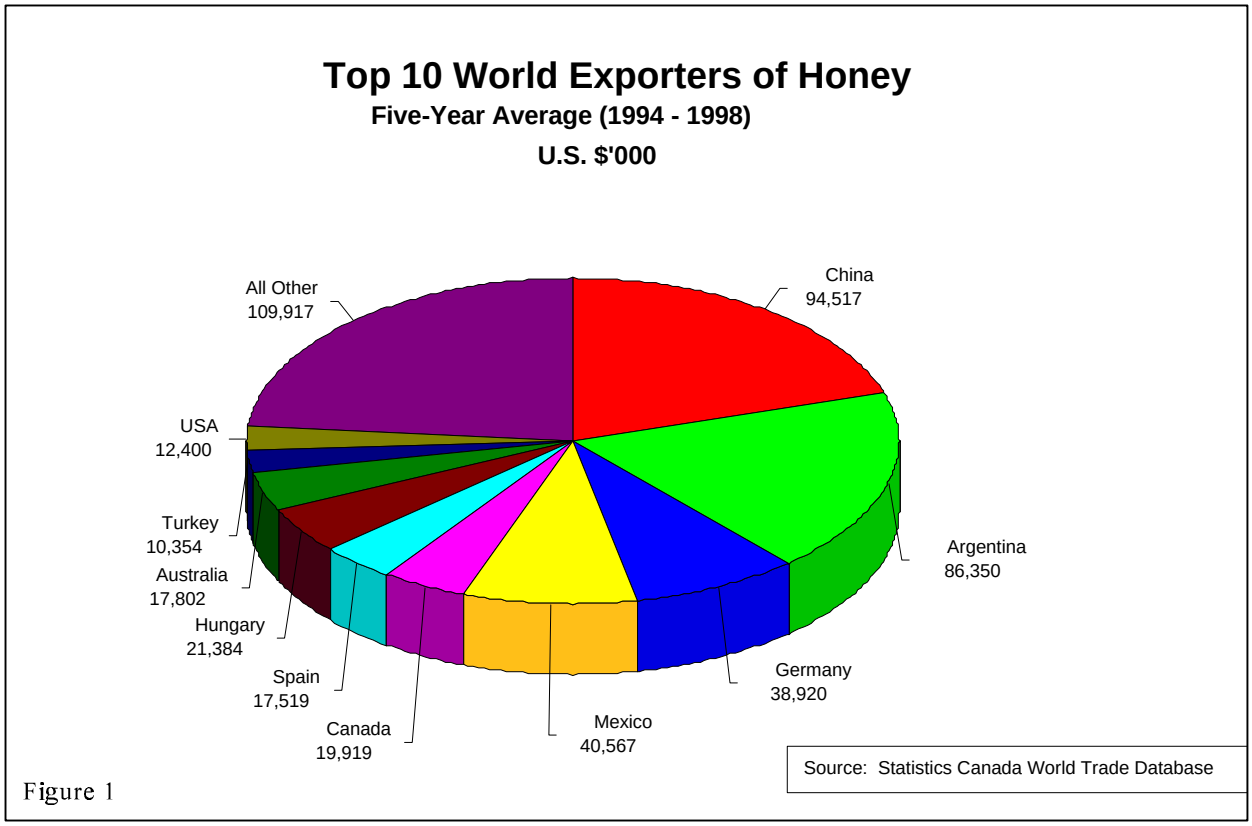
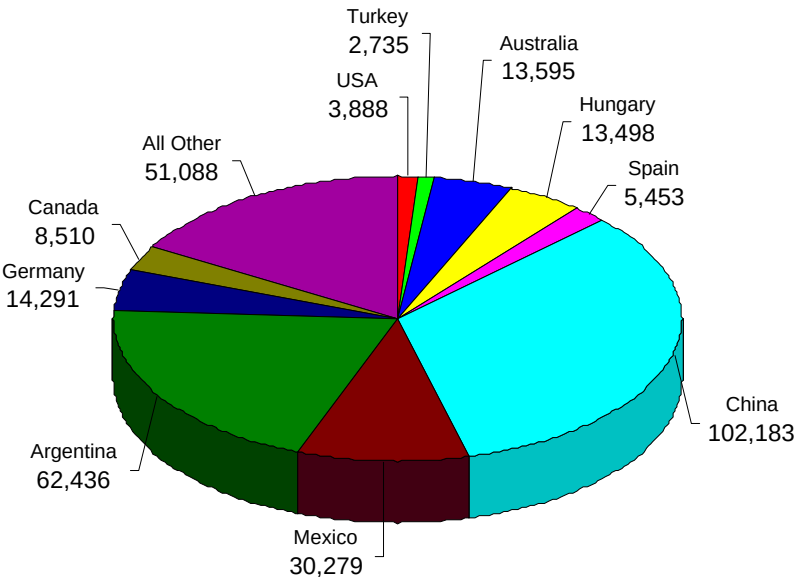


Figure 1

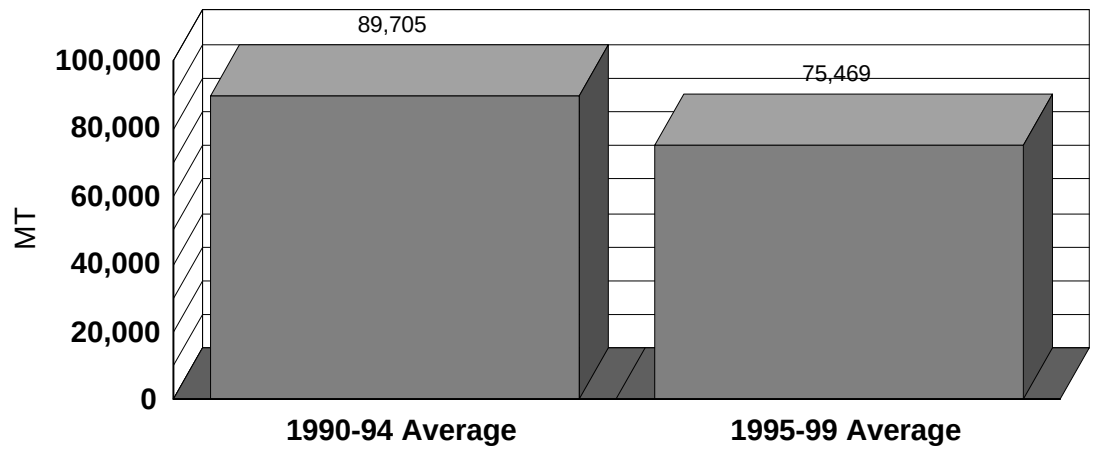


Source: FAOSTAT Database

Figure 2

China

Average exports for the period covering 1990-1999 were approximately 82,600 MT. However, exports have decreased, on average, by 16 percent from 1990-1994 to 1995-1999.



Source: FAS/USDA

Figure 3

Argentina

Argentine honey exports increased significantly, by 89 percent, from 1990 to 1999. Exports increased by 28 percent on average from the period covering 1990-1994 to 1995-1999.

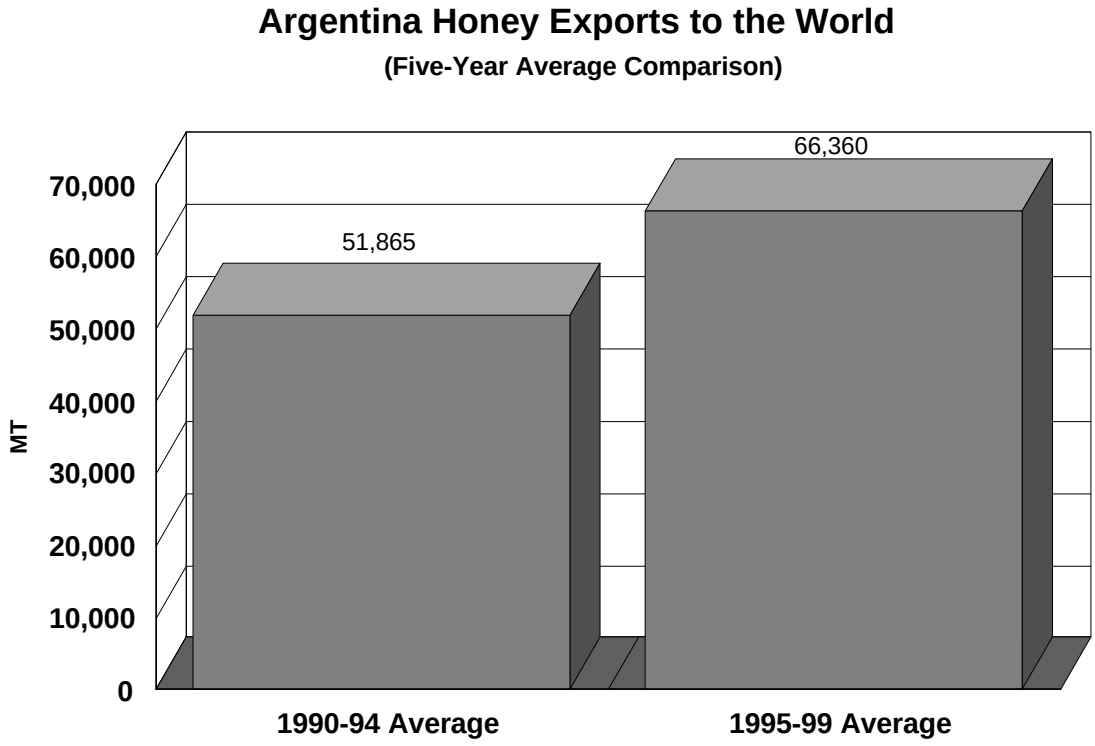
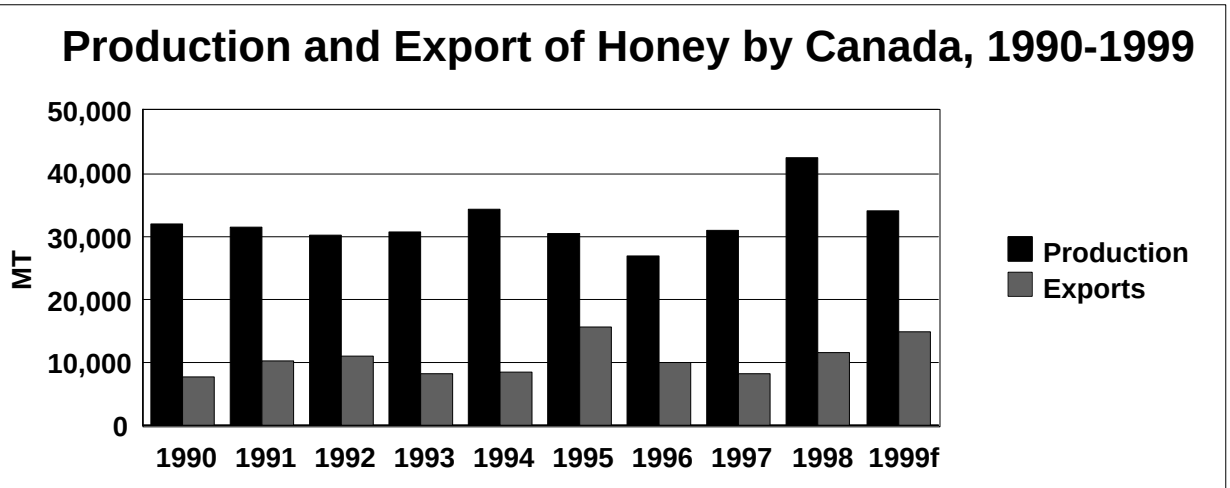


Figure 4

Source: FAS/USDA

Canada

The average quantity of honey exported over the ten year period covering 1990-1999 was 10.6 MT. Production averaged 29.3 MT over the ten year period.



Source: FAOSTAT Database
f - FAS/USDA forecast

Figure 5

Honey exports increased by 31 percent during the period covering 1995-1999 to that of 1990-1994. Production also increased by four percent during the 1995-1999 period.

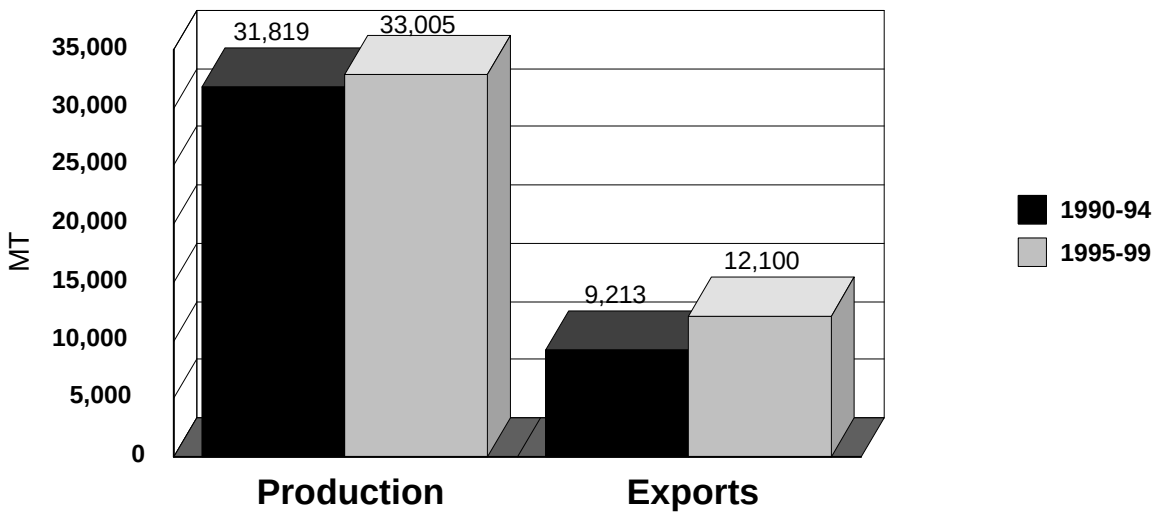
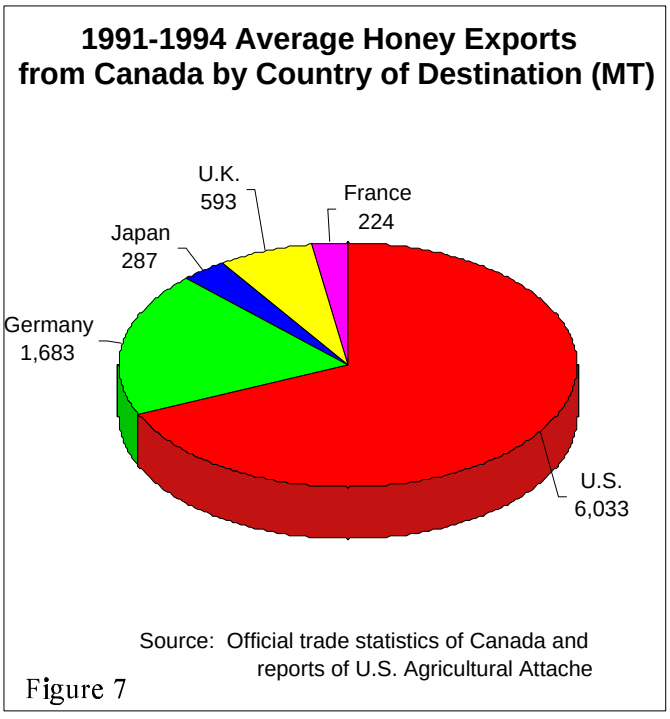


Figure 6

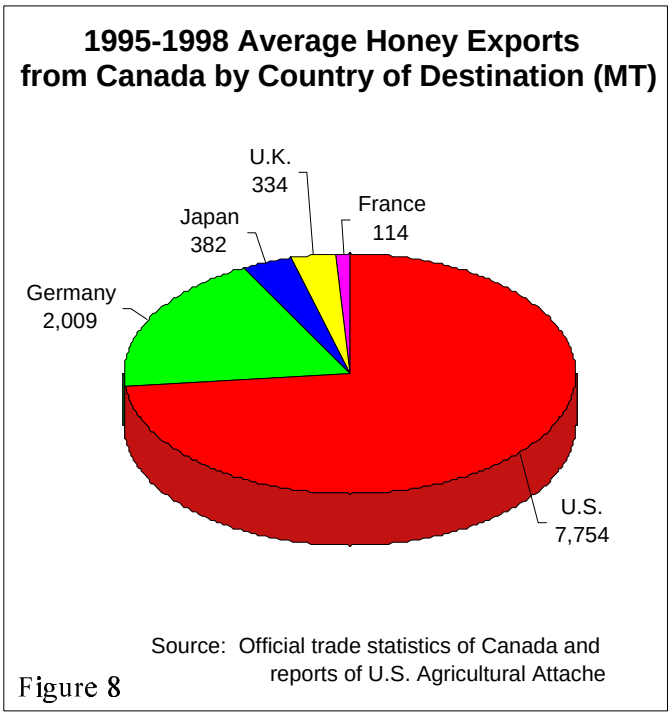
Source: FAOSTAT Database

Canadian exports to the U.S. increased by 29 percent from the period covering 1991-1994 to 1995-1998. Canadian exports to Japan and Germany increased by 33 percent and 19 percent respectively for the period covering 1990-1994 to 1995-1998. Conversely, exports to the United Kingdom and France decreased by 44 percent and 49 percent respectively.



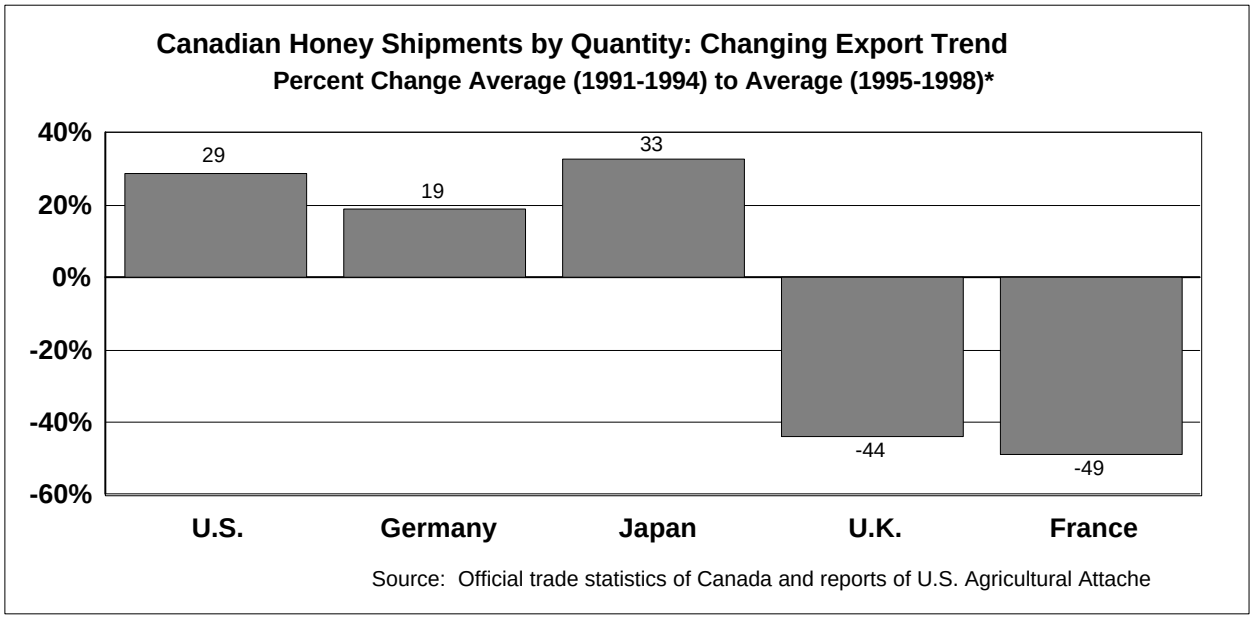
Source: Official trade statistics of Canada and reports of U.S. Agricultural Attache

Figure 7



Source: Official trade statistics of Canada and reports of U.S. Agricultural Attache

Figure 8



*Percent change calculation: Bar chart shows percent change from an earlier period to a later period of time. Average for 1995-98 minus average for 1991-94 period; value divided by average 1991-94 to establish percent change from earlier period. Same calculation format is applied to figures 12, 17, 23, 26 and 39.

Vietnam

Vietnamese honey production rose significantly, by 601 percent, over the period 1989-1998 beginning at 655 MT in 1989 and increasing to a high of 4,593 MT in 1998. Exports, likewise increased in 1989 with 290 MT and steadily grew to a high of 2,443 MT in 1998, showing an overall increase of 742 percent.

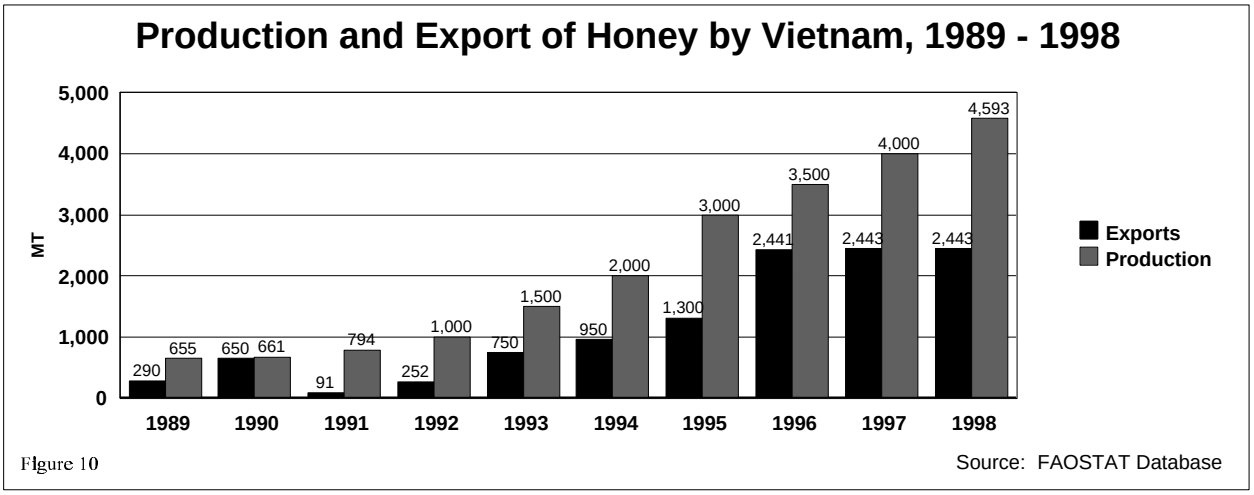


Figure 10

Russia, Hungary, Vietnam and Australia

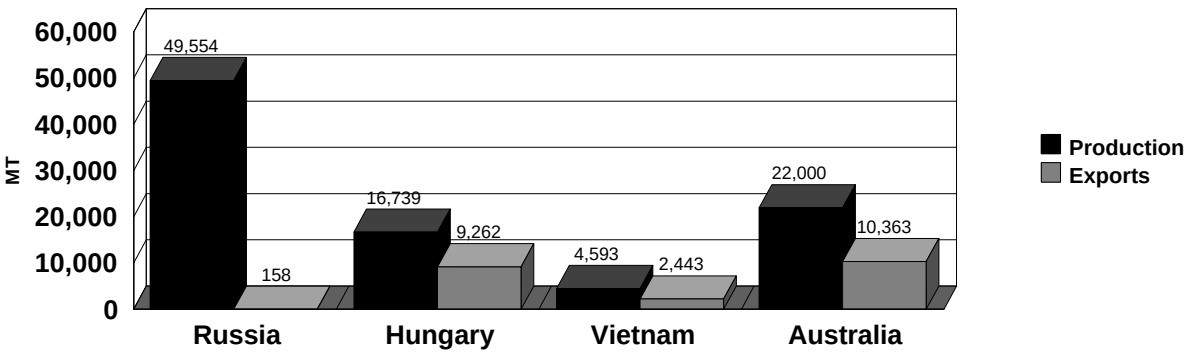


Figure 11

Source: FAOSTAT Database

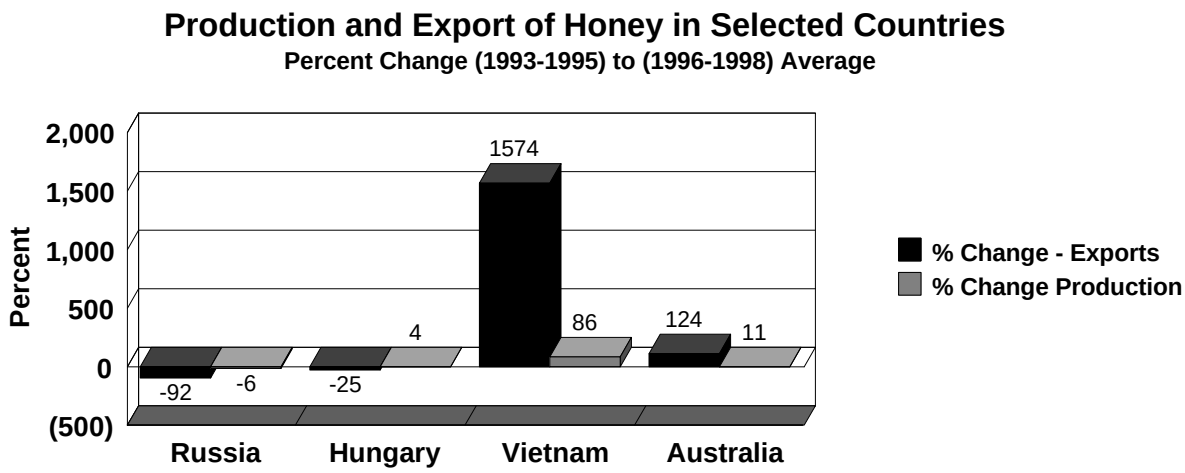


Figure 12

Source: FAOTSTAT Database

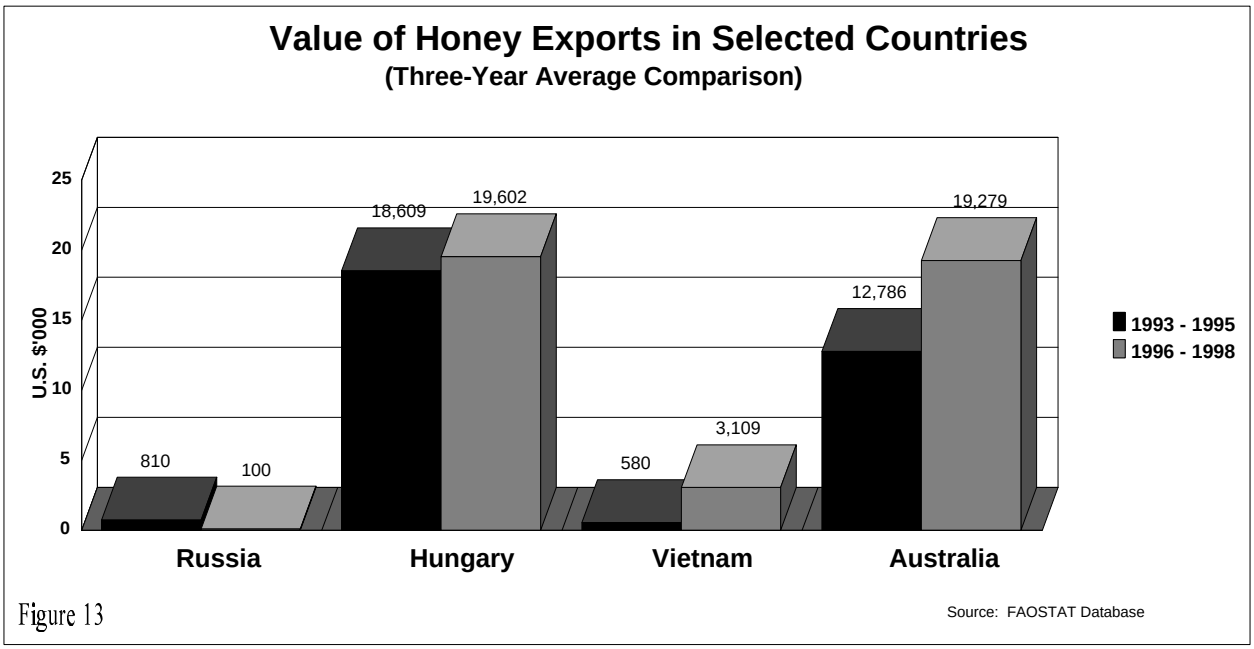


Figure 13 Source: FAOSTAT Database

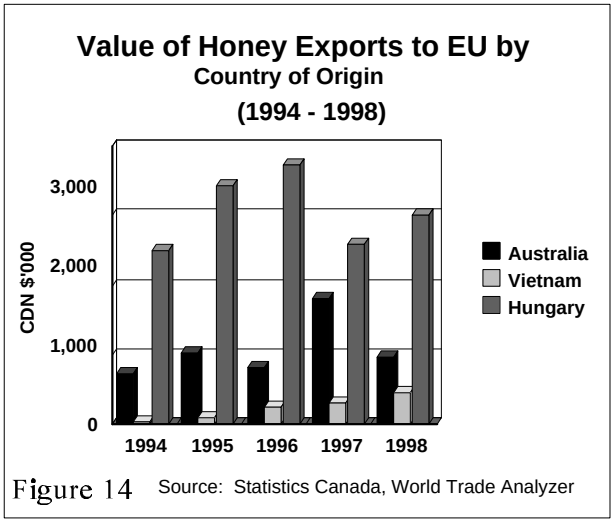


Figure 14 Source: Statistics Canada, World Trade Analyzer

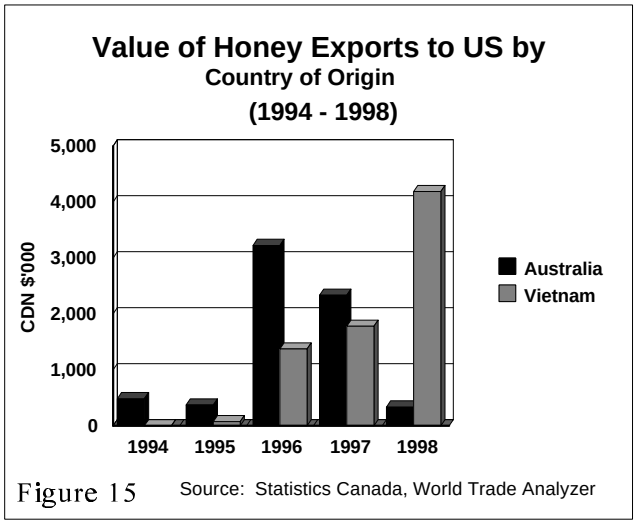


Figure 15 Source: Statistics Canada, World Trade Analyzer

Honey Imports

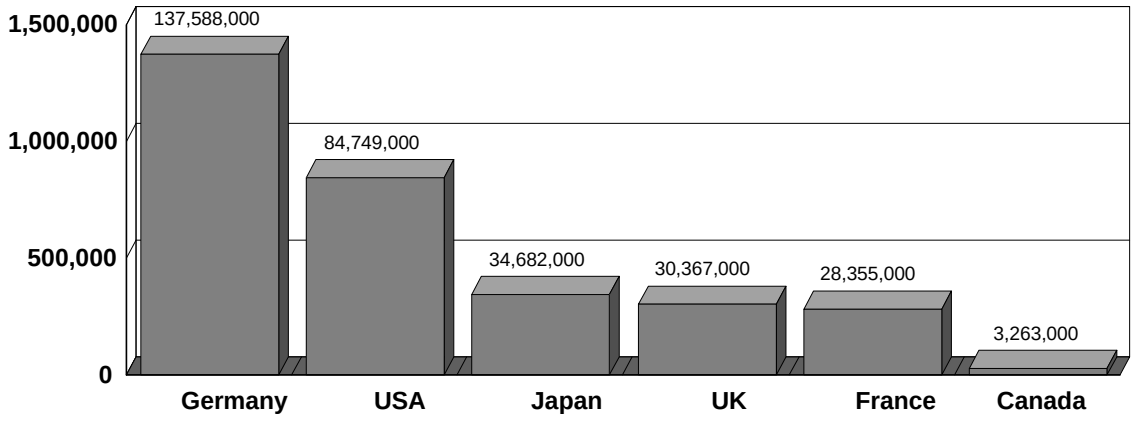


Figure 16

Source: Statistics Canada, World Trade Analyzer

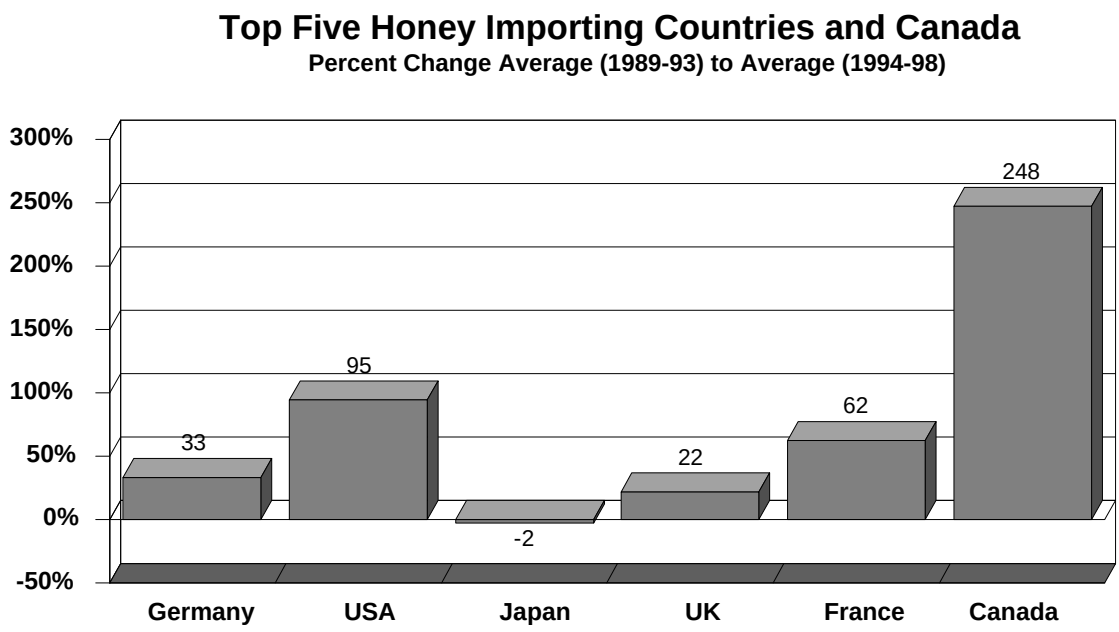
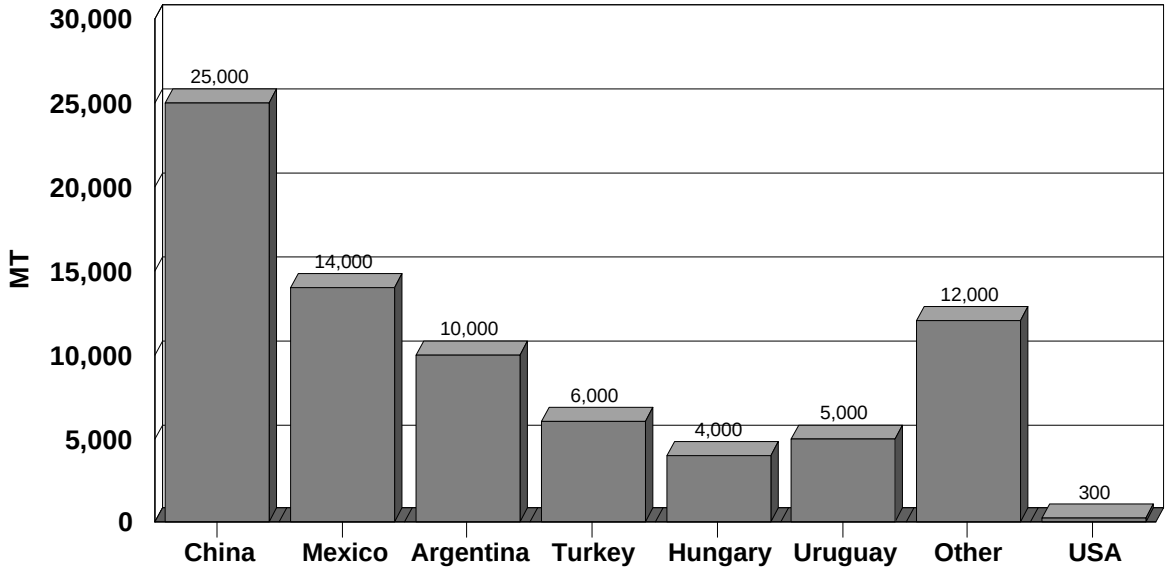


Figure 17

Source: Statistics Canada, World Trade Analyzer

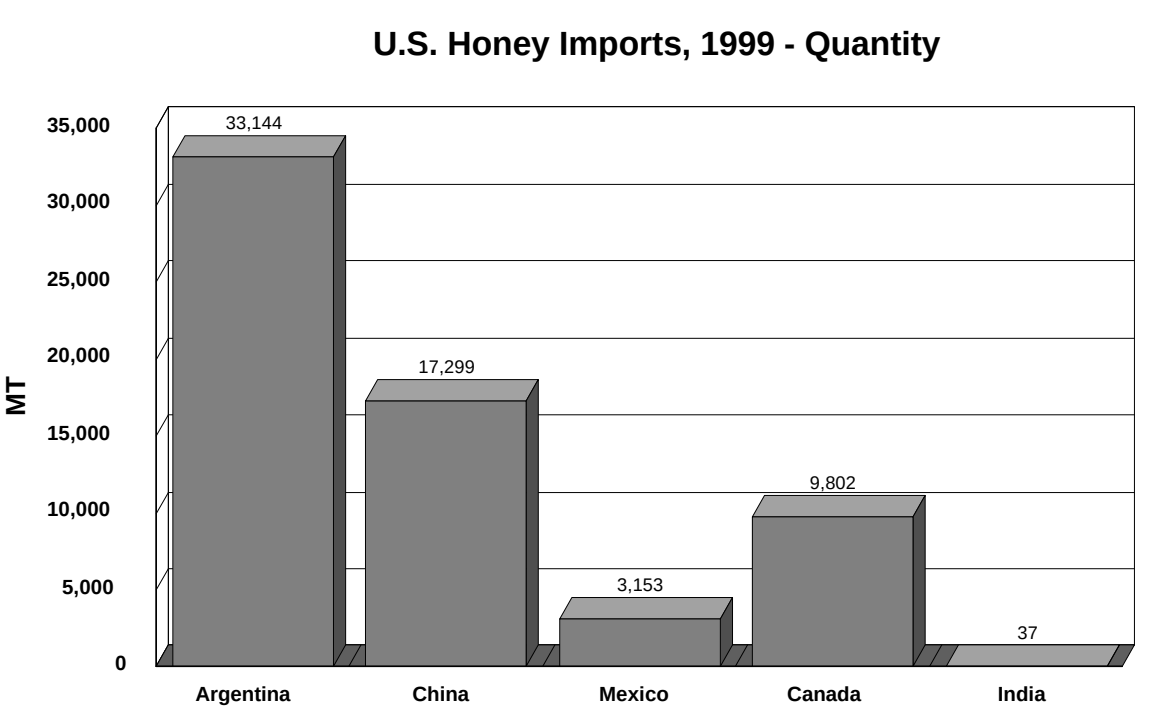
Germany



Source: FAS/USDA

Figure 18

United States



Source: U.S. Department of Commerce, Bureau of the Census

Figure 19

On average, from 1990 to 1999, Argentina had shipped more to the United States than any other country. During the 1990-1999 period Argentina averaged honey exports of 24,234 MT followed by China with an average of 17,722 MT. While Mexico exported an average of 4,263 MT during the 1990-1999 period to the United States, Canada exported an average of 9,542 MT and India averaged exports of 512 MT.

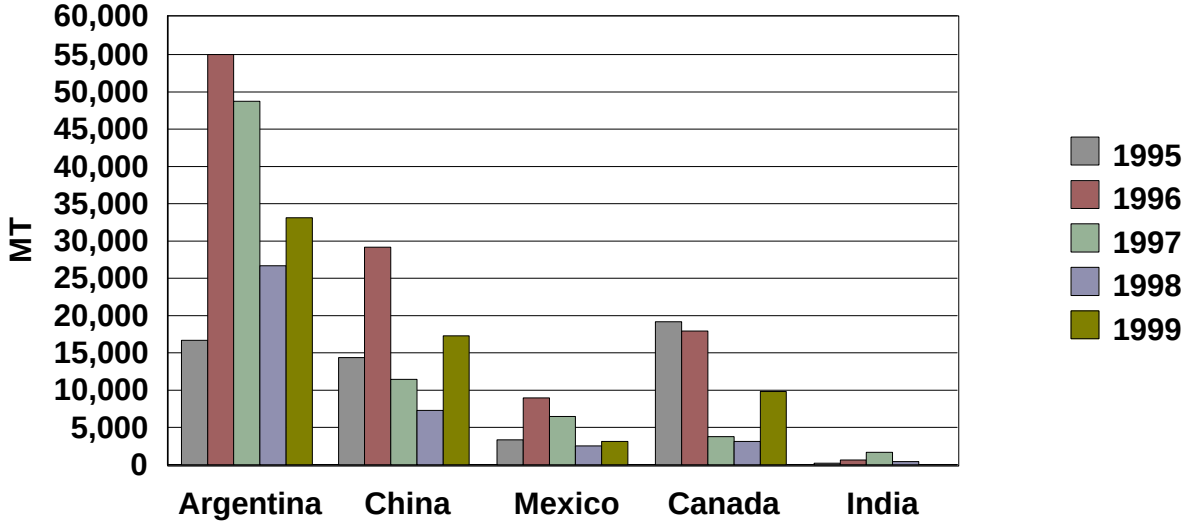
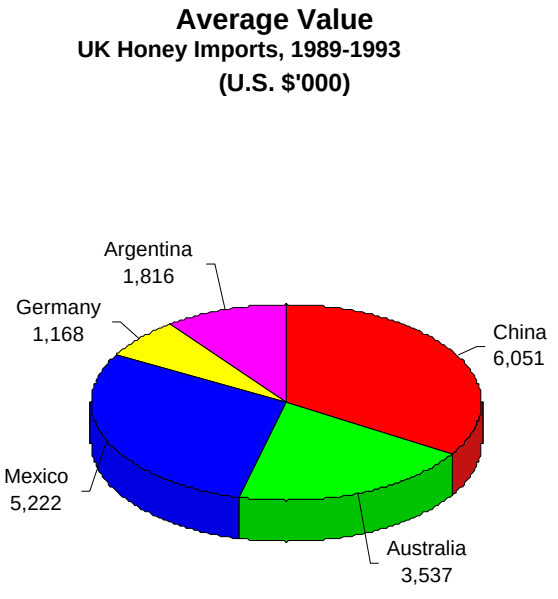


Figure 20

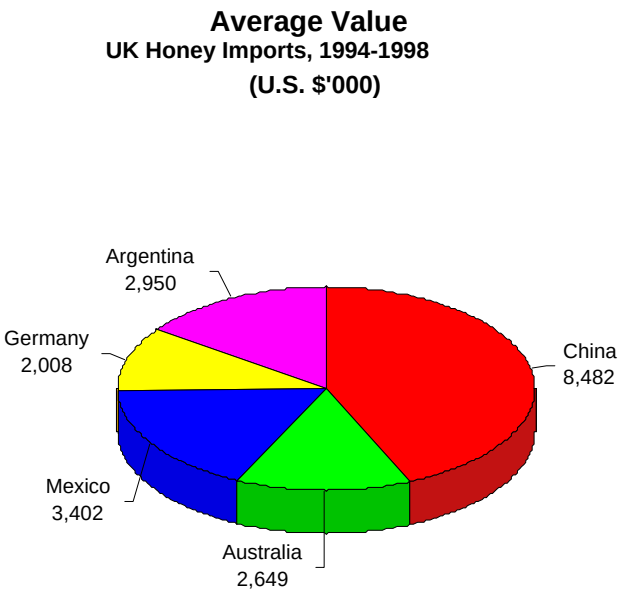
Source: US Department of Commerce, Bureau of the Census

United Kingdom



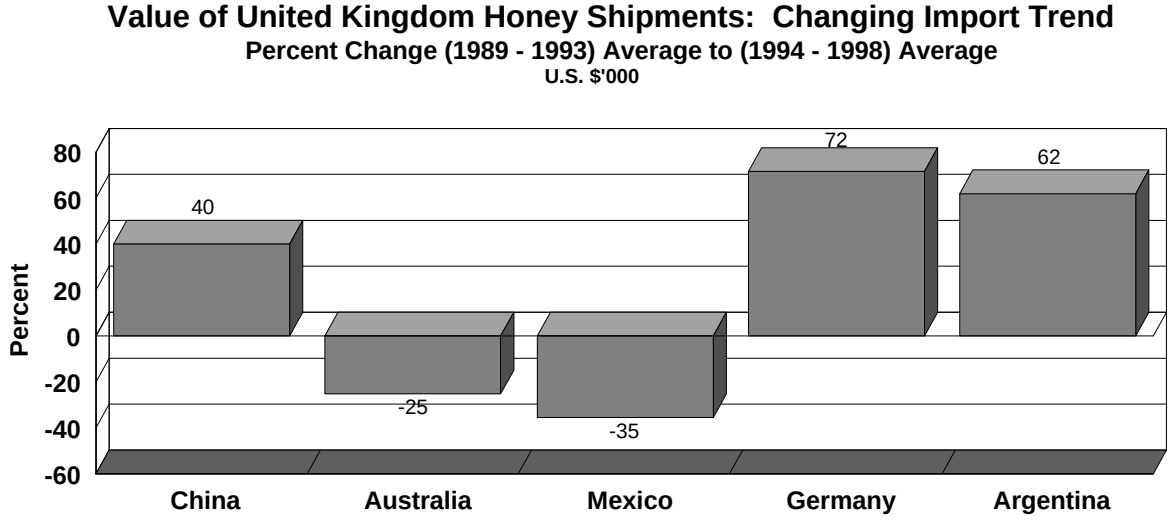
Source: Statistics Canada, World Trade Analyzer

Figure 21



Source: Statistics Canada, World Trade Analyzer

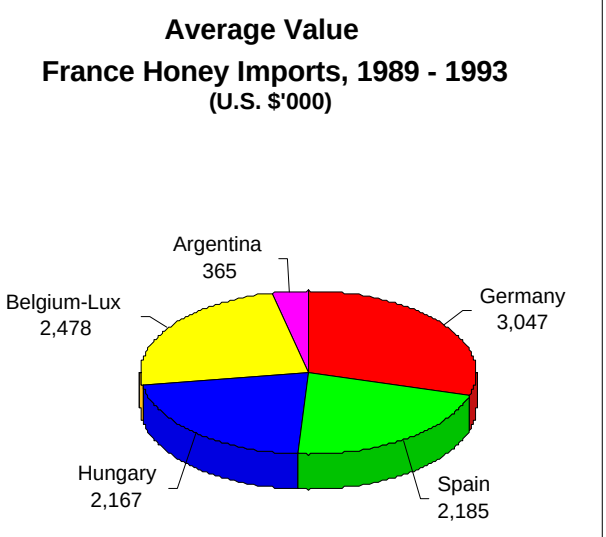
Figure 22



Source: Statistics Canada, World Trade Analyzer

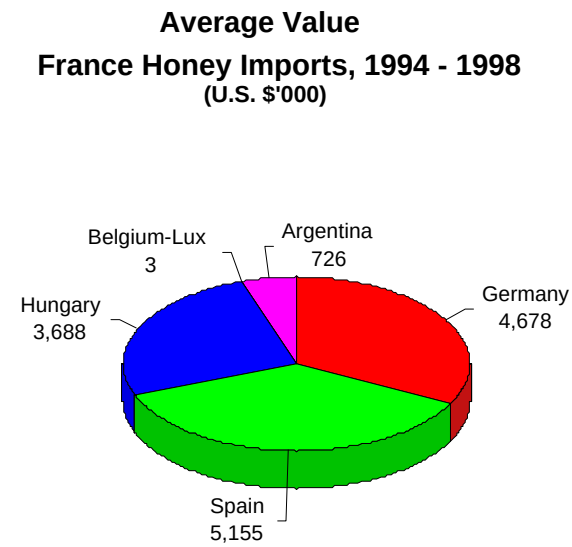
Figure 23

France



Source: Statistics Canada, World Trade Analyzer

Figure 24



Source: Statistics Canada, World Trade Analyzer

Figure 25

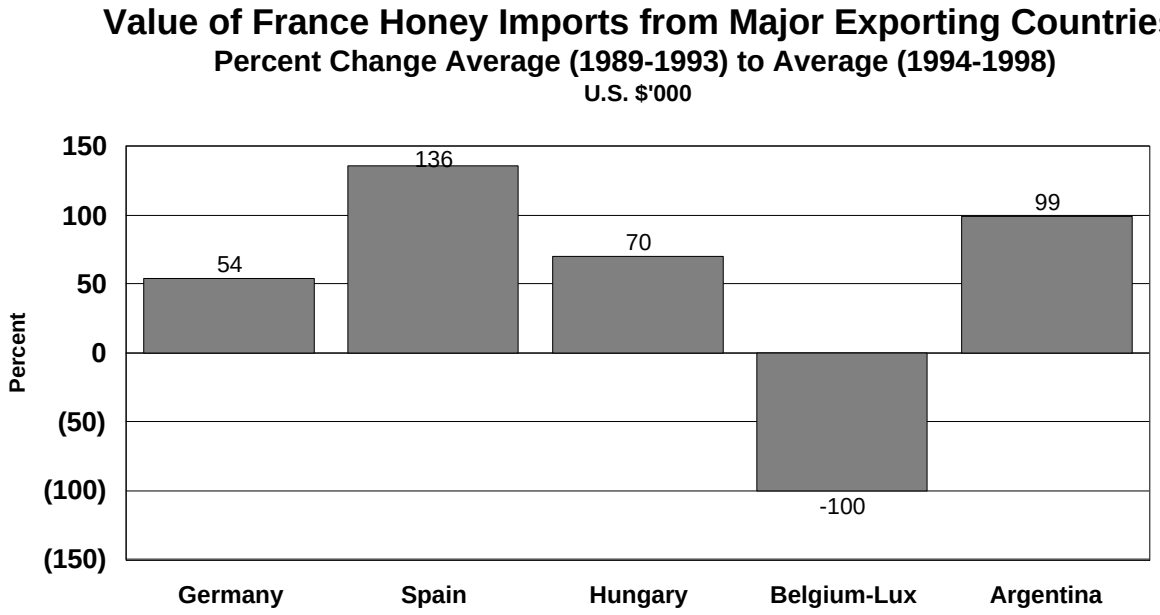
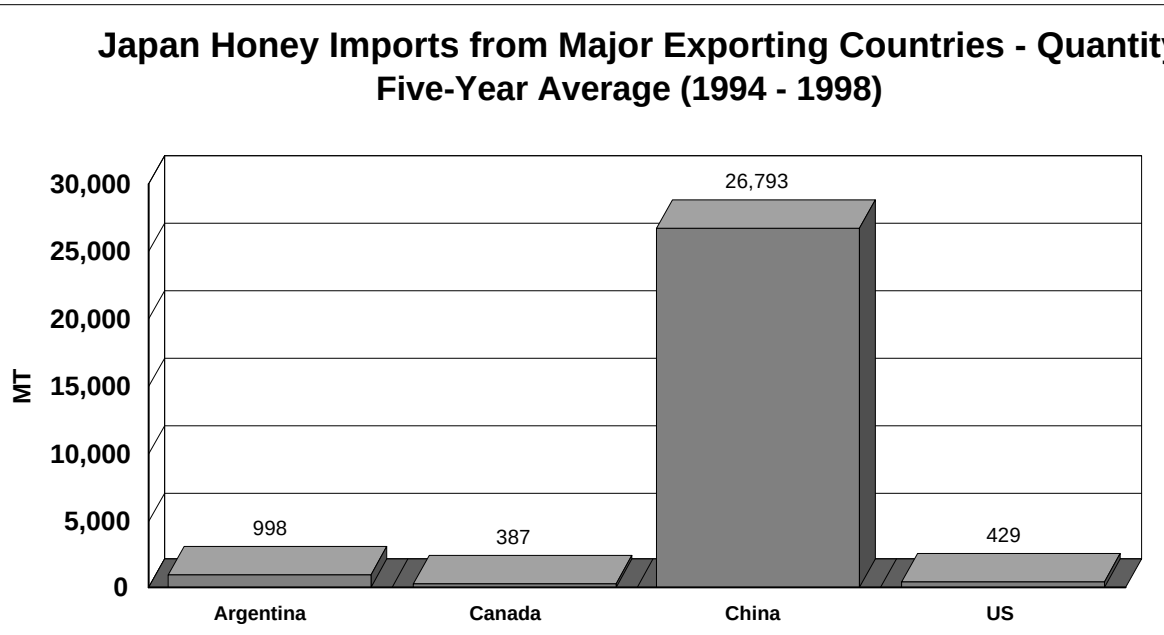


Figure 26

Source: Statistics Canada, World Trade Analyzer

Japan



Source: Argentina data: Instituto Nacional de Estadisticas y Censo (INDEC) and reports from US Agricultural Attaches
Canada data: Official trade statistics of Canada and reports of US Agricultural Attache
China data: Official Customs statistics and reports from US Agricultural Attache

Figure 27

Colonies

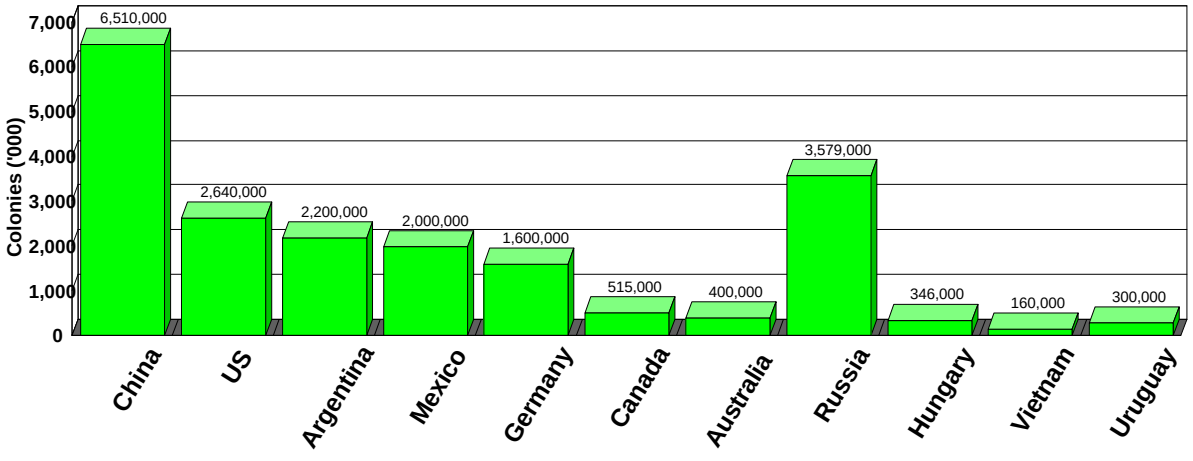


Figure 28

FAOSTAT Database

China

There was an average of approximately 6.9 million colonies during the period covering 1990-1999. The number of colonies decreased by 18 percent from 1990 to 1999.

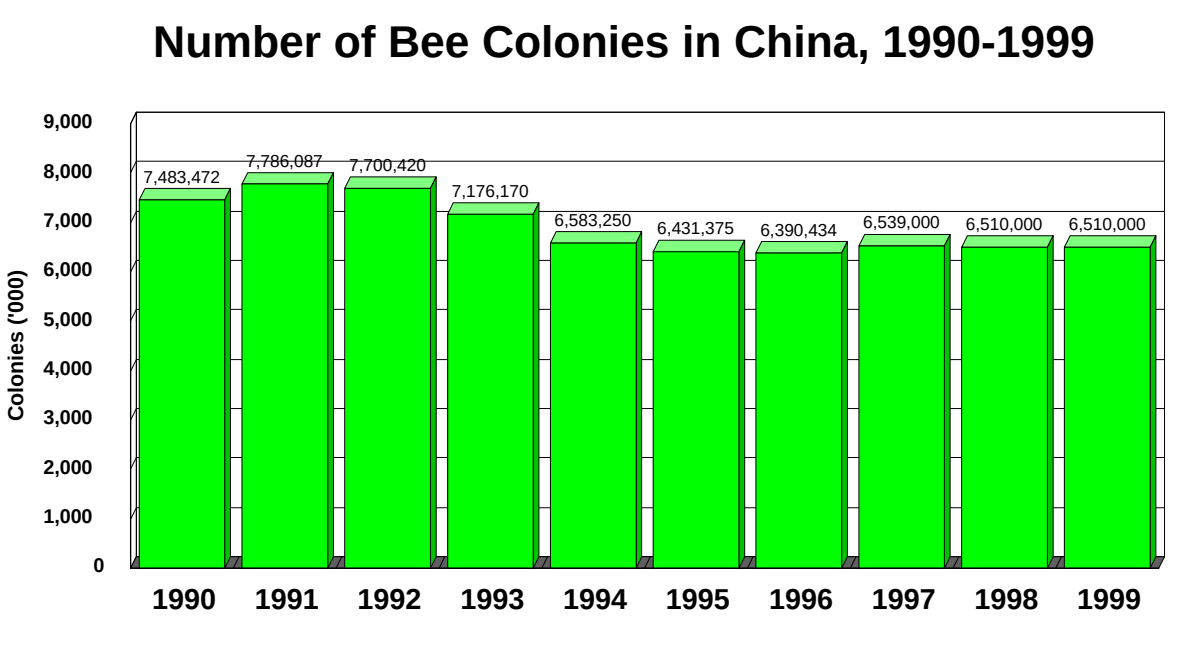


Figure 29

Source: FAOSTAT Database

United States

The number of bee colonies in the United States remained fairly constant during the 1990-1999 period. However, the number of colonies decreased by 18 percent from 1990 to 1999. The average number of colonies was approximately 2.9 thousand.

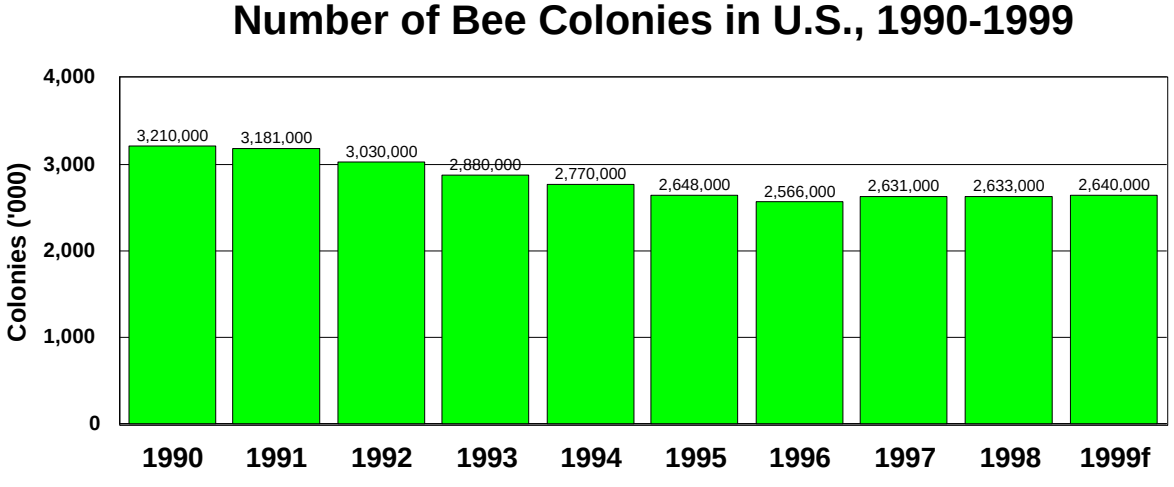


Figure 30

Argentina

The number of Argentine colonies steadily increased, by 57 percent, from 1990-1999. The average number of colonies during that period was 1.74 million.

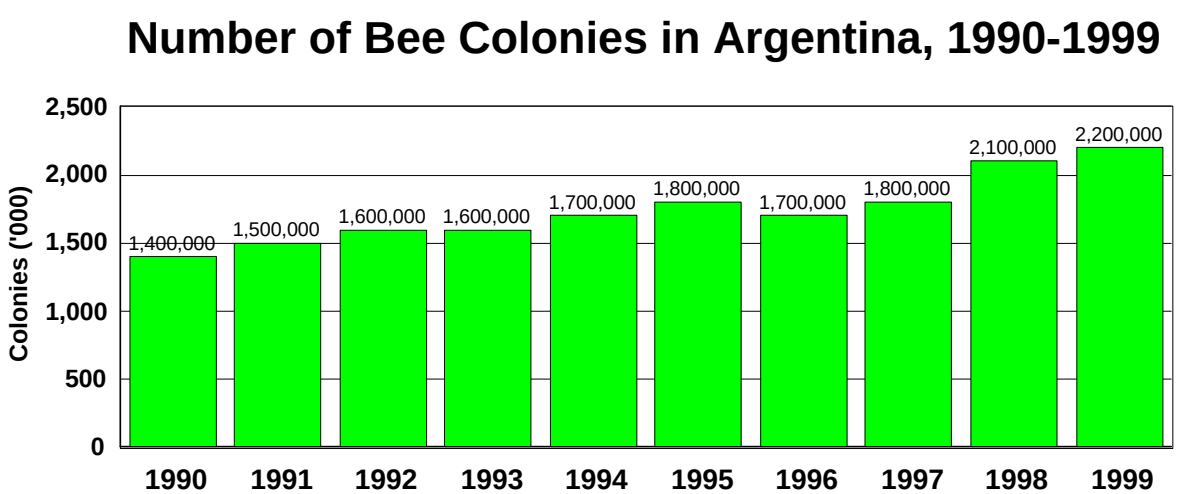


Figure 31

Germany

The average number of colonies for the period 1990-1999 was 1.8 million. The overall number of colonies decreased by 14 percent from 1990.

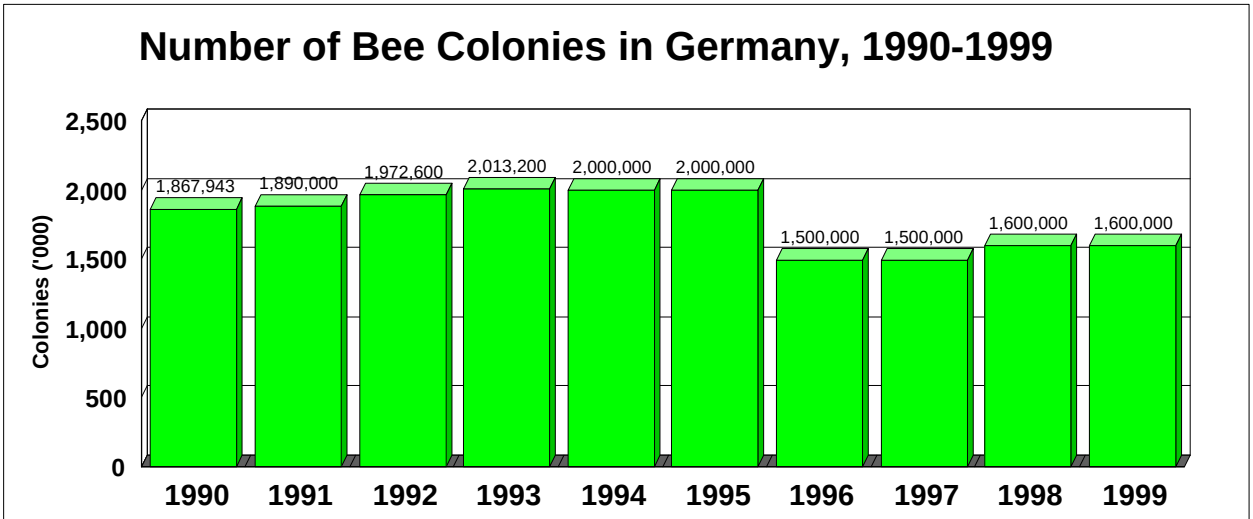


Figure 32

Mexico

The average number of colonies covering the period 1990-1999 was 2.16 million. The number of colonies has decreased by 5 percent from 1990 to 1999.

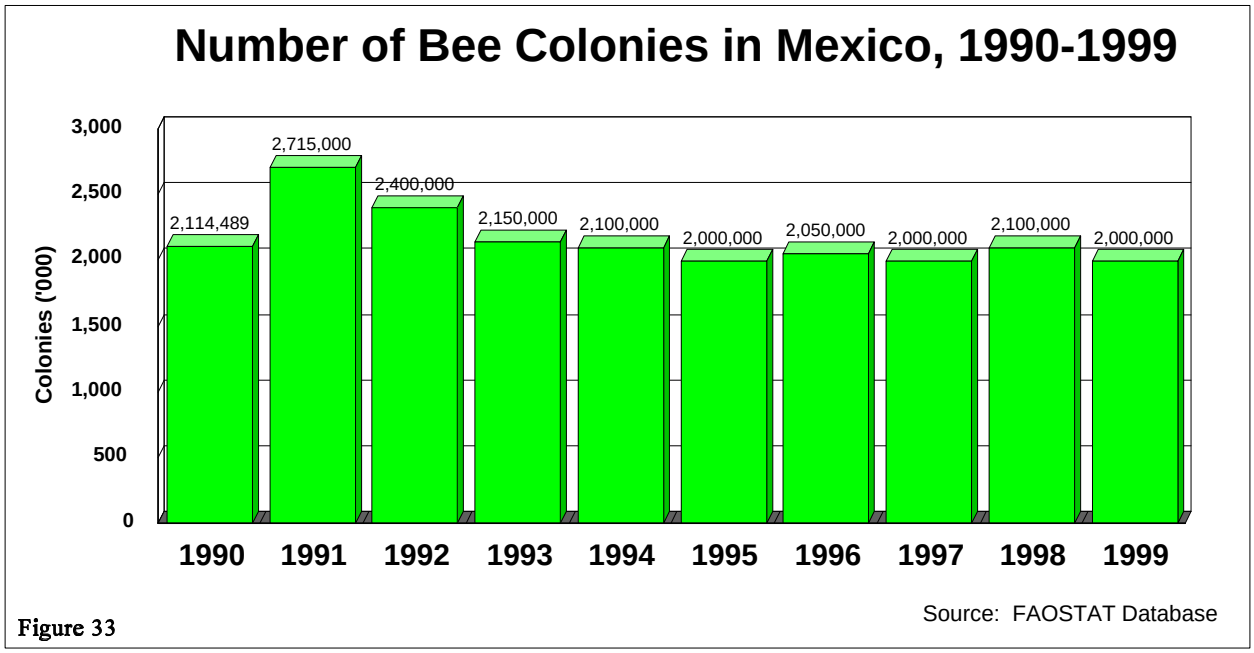


Figure 33

Canada

Canada showed a decrease of three percent in the total number of colonies during the period covering 1990 - 1999. The average number of colonies was 512,000.

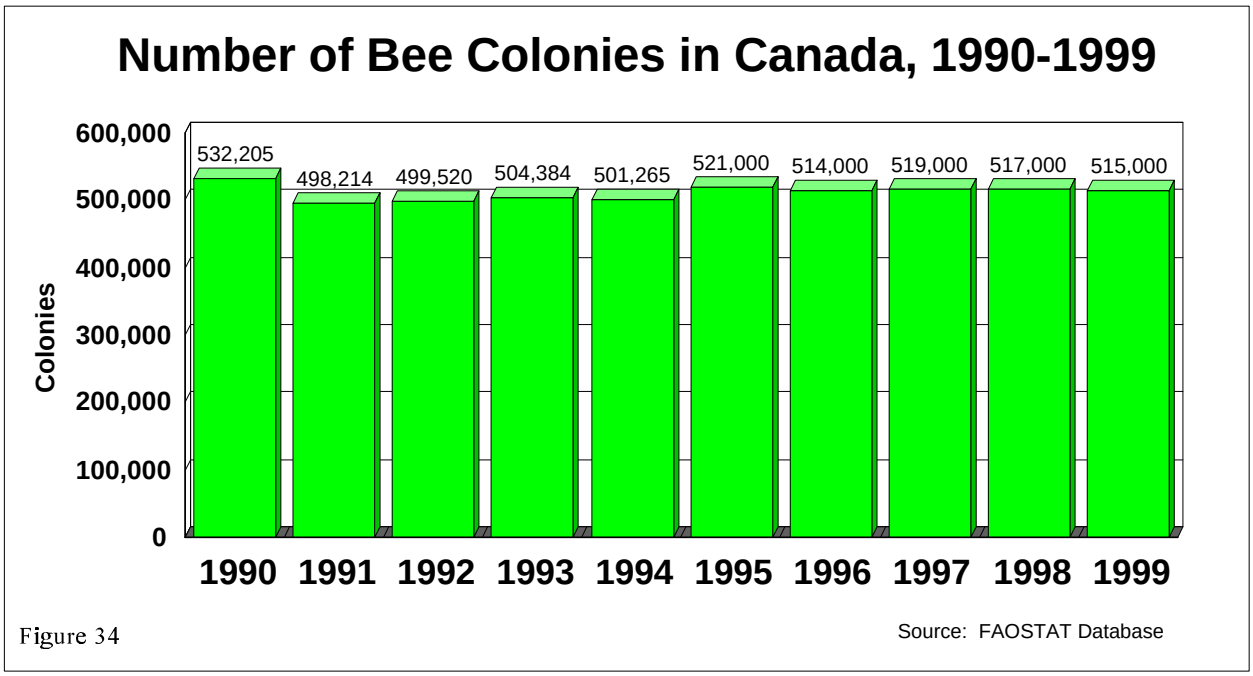
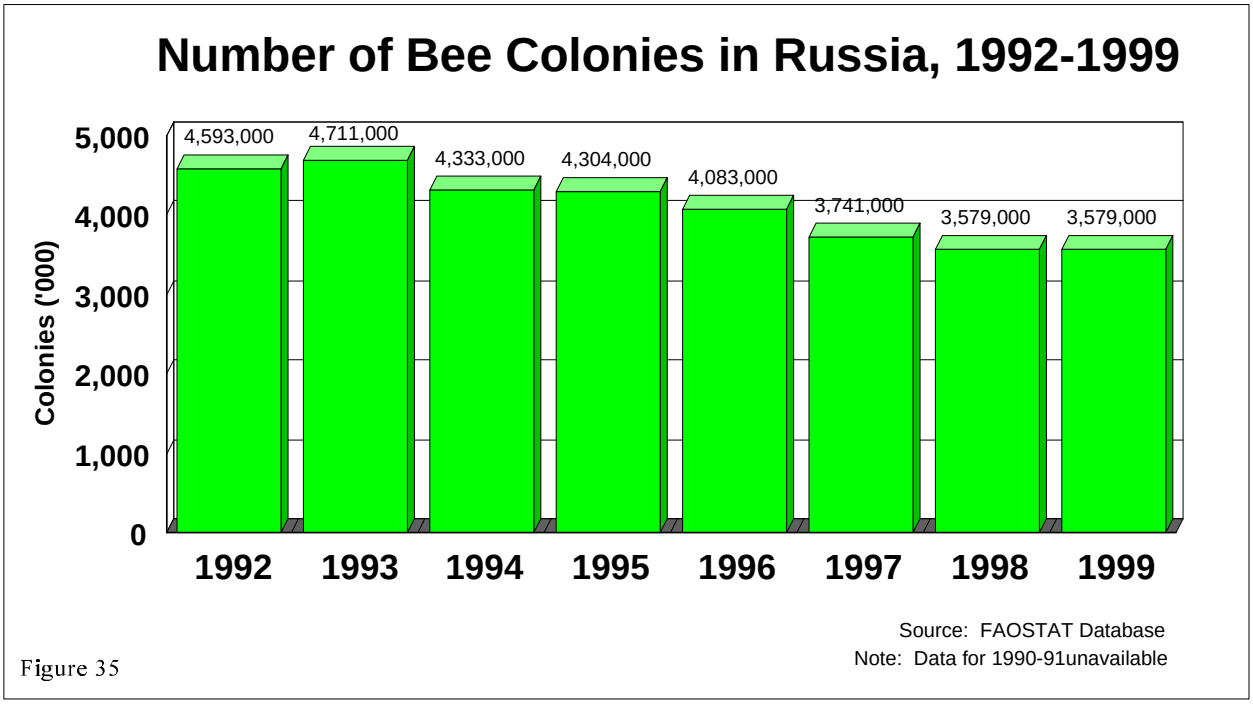


Figure 34

Source: FAOSTAT Database

Russia

The average number of colonies for 1992-1999 was 4.1 million. The average number of colonies decreased by 22 percent for the period covering 1992-1999.



Source: FAOSTAT Database
Note: Data for 1990-91unavailable

Figure 35

Vietnam

The average number of colonies for 1990-1999 was 124.8 thousand. The average number of colonies increased by 74 percent for the period covering 1990-1999.

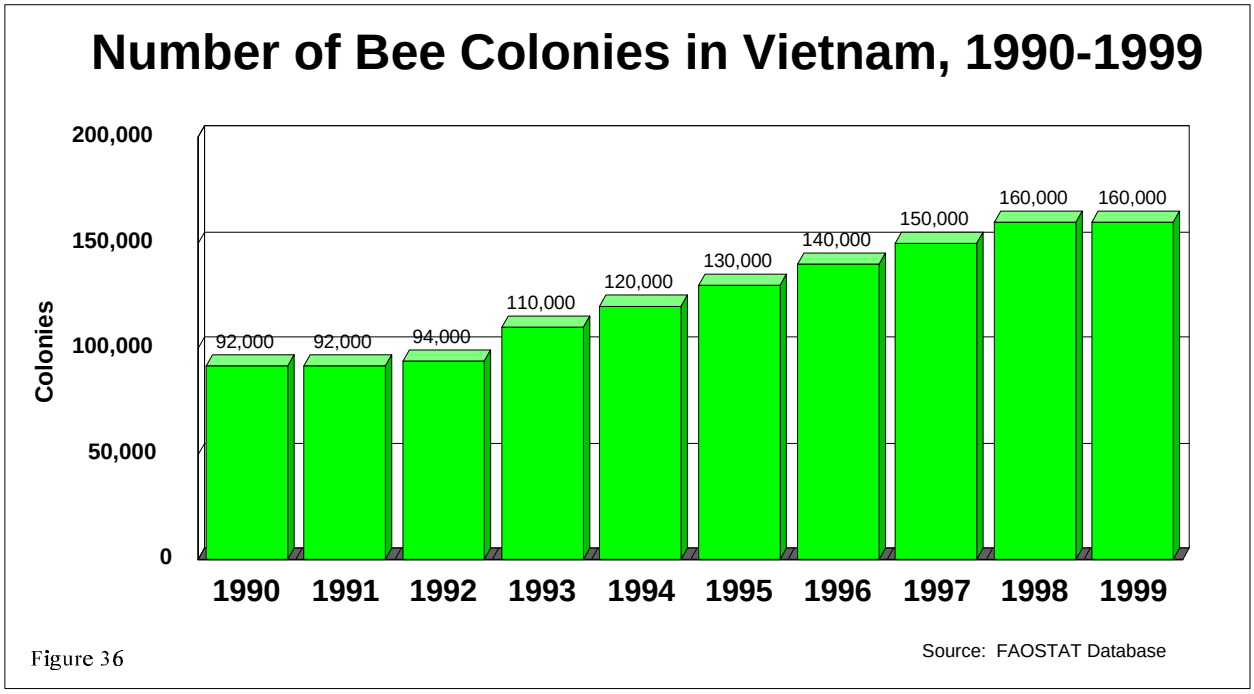


Figure 36

Source: FAOSTAT Database

Uruguay

The average number of colonies for 1990-1999 was 297.7 thousand. The average number of colonies increased by 45 percent for the period covering 1990-1999.

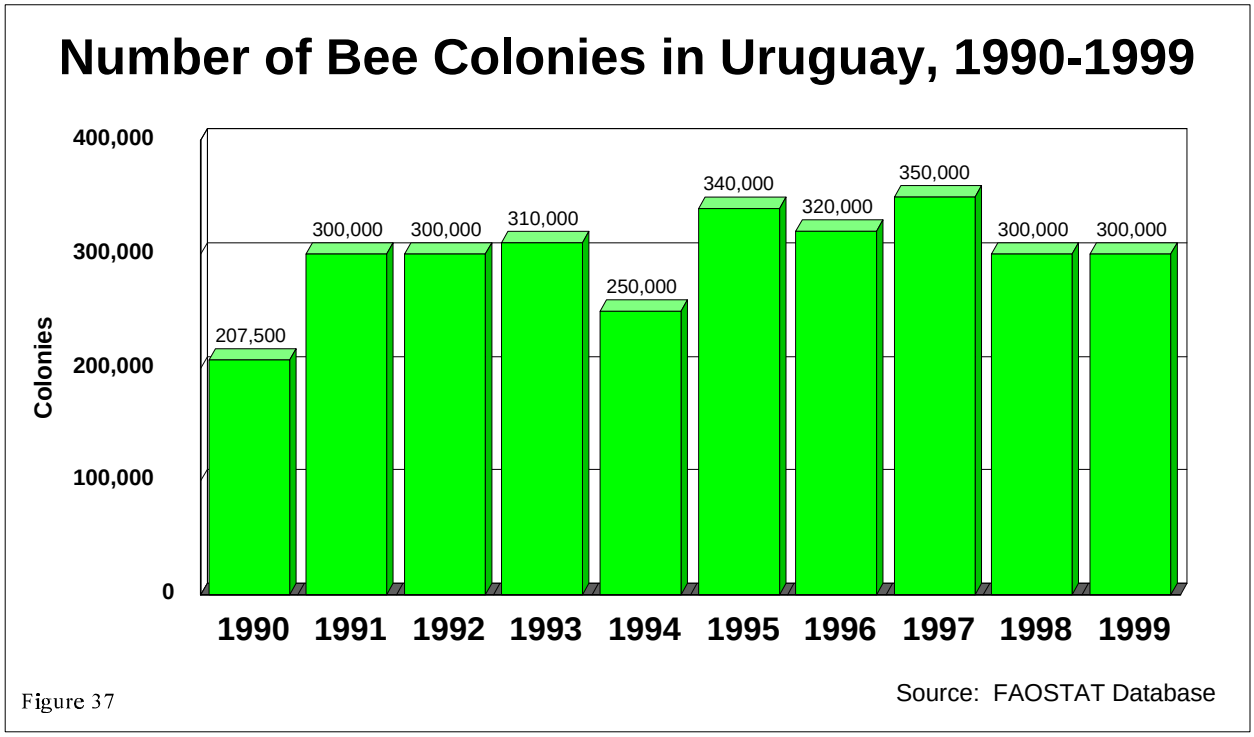


Figure 37

Source: FAOSTAT Database

Australia

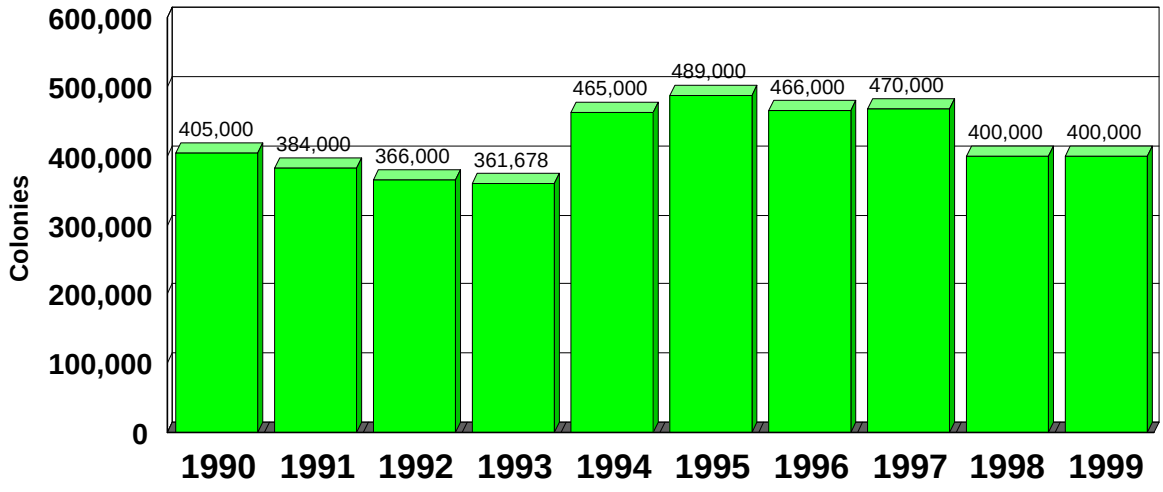


Figure 38

Source: FAOSTAT Database

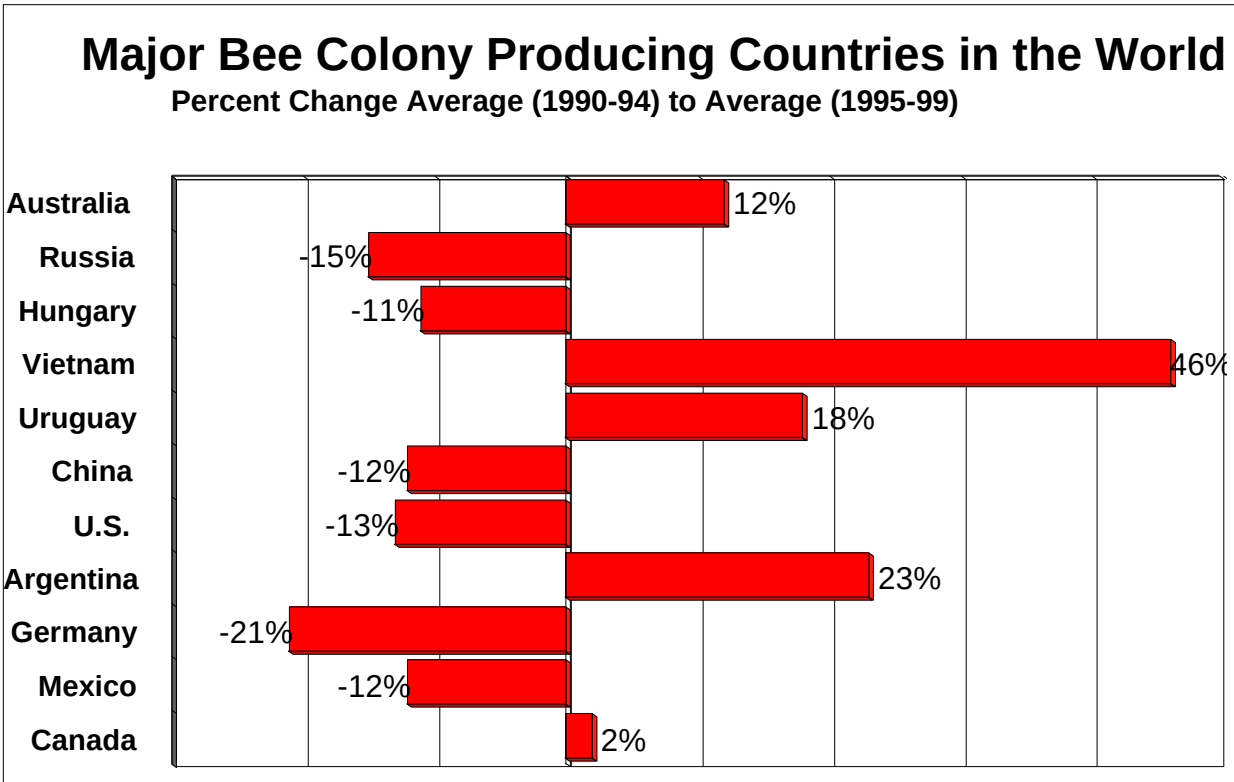


Figure 39

Source: FAOSTAT Database

Alberta

Honey Production in Alberta

Alberta 1998/1999 Beekeeping Survey Highlights

After recovering slightly in 1998, the number of beekeepers in Alberta fell in 1999 (see Tables 2 and 3). Preliminary estimates peg the 1999 total at 725, compared to 730 a year earlier. Unlike the downward trend noted for Alberta, producer numbers were up nationally in 1999, increasing 3.4 per cent from a year earlier, to 10,852. Currently, Alberta accounts for 6.6 per cent of the beekeepers in Canada and roughly 13 per cent of the Western Canadian total of 5,387.

While beekeepers numbers have declined in the province, the estimated number of colonies in 1999 remained unchanged from 1998, at 205,000. Colony numbers were maintained largely through the use of "splits" and package bee purchases, to enhance honey production. At the national level, colony numbers were up, increasing slightly over two per cent to 577,505, from 563,614 in 1998. Alberta continues to account for slightly over one-third of the honey producing colonies in Canada, despite having under seven per cent of the nation's beekeepers.

Unlike the record setting year in 1998, honey production was significantly down in Alberta in 1999. With total production estimated at 11,251 tonnes, this was about a third lower than the 17,389 tonnes in 1998. The marked decline in production was largely attributed to a cool, wet spring, followed by a hot, dry summer. A similar trend was also noted nationally, as total production fell roughly 25 per cent to 34,633 tonnes, from 46,083 tonnes in 1998. The average colony in Alberta produced 55 kilograms of honey in 1999, which was about 35 per cent lower than the 85 kilograms in the previous year. For Canada, the corresponding average in 1999 was 60 kilograms, roughly 27 per cent lower than in 1998.

Like the year before, regionally in Alberta, honey production was the highest in the North West Region (see Table 4). This region produced 4,364 tonnes of honey or 38.8 per cent of the total provincial production in 1999. In second place was the Peace with a production of 3,346 tonnes (29.7%), followed by the North East with 2,034 tonnes (18.1%) per cent. Central Alberta had the lowest production at 376 tonnes (3.3%), while in Southern Alberta the comparable figure was 1,132 tonnes (10.1%). It is worth noting that a large portion of the bees in Southern Alberta were devoted to hybrid canola pollination. Such an activity severely reduces the size of the honey crop.

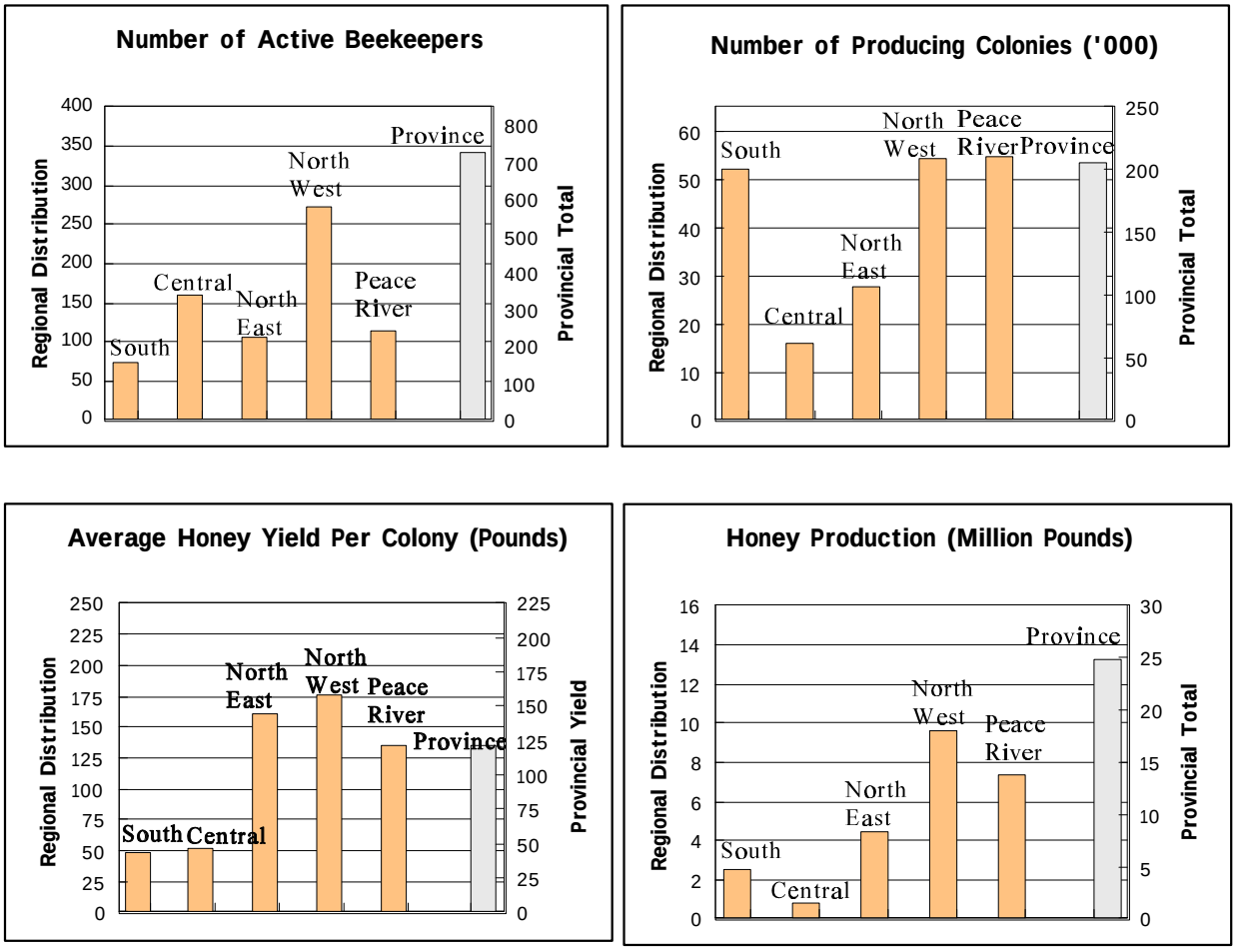
Table 2: 1999 HONEY PRODUCTION ESTIMATE - ALBERTA

Region	Number of Active Beekeepers	Number of Producing Colonies	Honey Yield Total Honey Per Colony Produced			
			lbs	kg	lbs	tonne
South	74	52,085	48	22	2,494,719	1,132
Central	160	16,017	52	23	829,300	376
North East	105	27,756	162	73	4,483,688	2,034
North West	273	54,423	177	80	9,621,210	4,364
Peace River	113	54,719	135	61	7,376,083	3,346
Province	**725**	**205,000**	**121**	**55**	**24,805,000**	**11,251**

Note: Yield and honey production rounded to the nearest pound, kilogram or tonne. Some totals may not add up due to rounding. Source: Statistics & Data Development Unit, Alberta Agriculture, Food & Rural Development; (780) 427-5376.

Alberta

1999 REGIONAL DISTRIBUTION OF ALBERTA'S ESTIMATED HONEY PRODUCTION (SELECTED HONEY STATISTICS)



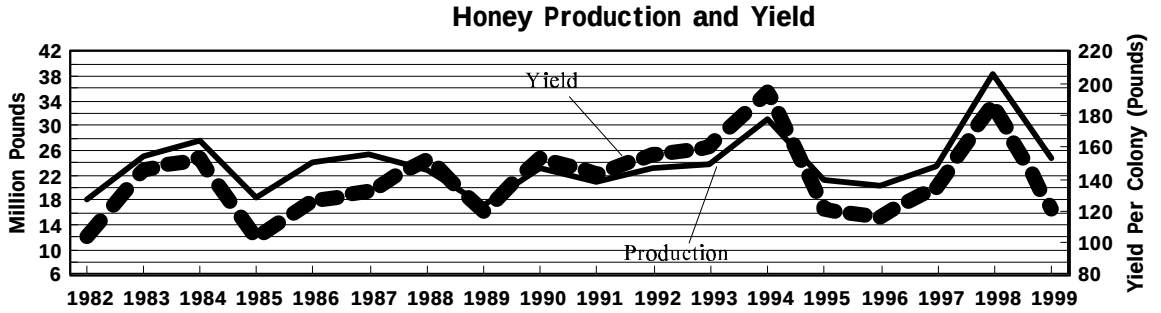
Source: Statistics & Data Development Unit Annual Beekeepers' Survey

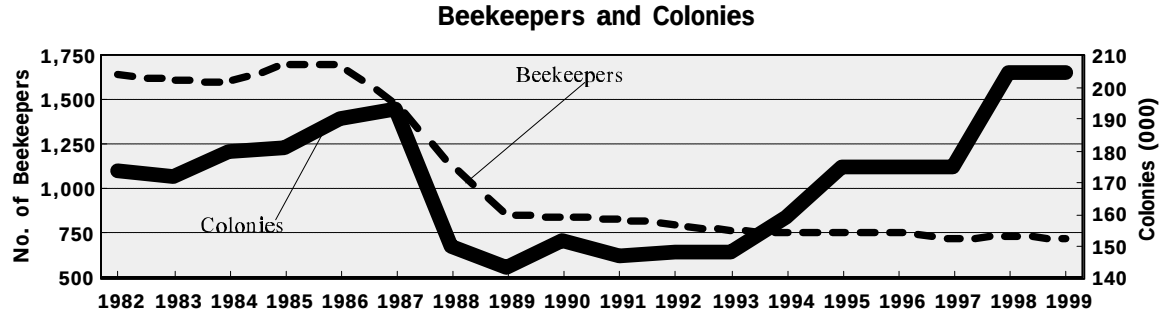
Table 3: Alberta Honey Statistics, 1982-1999

	No. of Beekeepers	No. of Colonies	Production ('000 lbs)	Yield per Colony (lbs)	No. Of Colonies per Beekeeper
1982	1,650	174,000	18,100	104	105
1983	1,610	172,000	25,100	146	107
1984	1,600	180,000	27,650	154	113
1985	1,700	181,000	18,500	102	106
1986	1,700	190,000	24,000	126	112
1987	1,480	193,000	25,500	132	130
1988	1,140	150,000	23,000	153	132
1989	855	143,500	17,220	120	168
1990	840	152,000	23,294	153	181
1991	830	147,000	21,032	143	177
1992	800	148,000	23,088	156	185
1993	761	148,000	23,745	160	194
1994	750	159,000	31,005	195	212
1995	750	175,000	21,306	122	233
1996	750	175,000	20,215	116	233
1997	725	175,000	23,625	135	241
1998	730	205,000	38,335	187	281
1999	725	205,000	24,805	121	283

Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development

Alberta honey Production, Yield, Beekeepers and Colonies





Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development

Table 4: Honey Production by Region in Alberta (1994-1999)

Region	1994	1995	1996	1997	1998	1999
Number of Active Beekeepers						
Southern	78	81	77	72	75	74
Central	155	154	156	149	151	160
North East	100	103	110	103	101	105
North West	297	290	291	280	279	273
Peace River	120	122	116	121	124	113
Province	750	750	750	725	730	725
Number of Producing Colonies						
Southern	31,160	40,846	45,094	43,398	54,900	52,085
Central	8,184	8,849	8,199	9,722	12,018	16,017
North East	21,024	21,593	22,585	23,401	26,887	27,756
North West	51,723	51,876	47,810	48,528	56,658	54,423
Peace River	46,909	51,836	51,311	49,951	54,537	54,719
Province	159,000	175,000	175,000	175,000	205,000	205,000
Average Yield (pounds per colony)						
Southern	133	66	101	108	78	48
Central	173	83	93	124	125	52
North East	208	130	85	131	254	162
North West	193	134	132	145	245	177
Peace River	237	156	130	153	217	135
Province	195	122	116	135	187	121

Honey Production ('000 pounds)

Southern	**4,146**	**2,696**	**4,571**	**4,672**	**4,281**	**2,495**
Central	**1,415**	**739**	**761**	**1,209**	**1,507**	**829**
North East	**4,368**	**2,807**	**1,926**	**3,071**	**6,830**	**4,484**
North West	**9,957**	**6,951**	**6,296**	**7,053**	**13,890**	**9,621**
Peace River	**11,119**	**8,112**	**6,660**	**7,619**	**11,827**	**7,376**
Province	**31,005**	**21,306**	**20,215**	**23,625**	**38,335**	**24,805**

p Preliminary

Note: Some totals may not add up due to rounding.

Source: Statistics and Data Development Unit, Alberta Agriculture, Food and Rural Development

Canada and Western Provinces

ESTIMATED NUMBER OF BEEKEEPERS, COLONIES AND YIELD FOR CANADA AND SELECTED PROVINCES (1990-1999)

Year	Canada	MB	SK	AB	BC	Canada	MB	SK	AB	BC
	Number of Beekeepers					Number of Colonies				
1990	14,026	1,100	1,400	840	3,750	532,205	83,000	93,000	152,000	50,000
1991	12,920	1,000	1,400	830	3,324	503,280	76,000	85,000	147,000	45,000
1992	13,102	800	1,400	800	3,673	501,259	75,500	84,000	148,000	43,336
1993	12,344	800	1,400	761	2,916	502,656	85,000	86,000	148,000	44,958
1994	12,151	800	1,400	750	2,839	501,256	81,000	86,000	159,000	44,192
1995	11,115	800	1,400	750	2,221	511,274	83,000	86,000	175,000	41,750
1996	11,094	855	1,450	750	2,122	509,648	75,000	85,500	175,000	45,261
1997	10,880	830	1,400	725	2,020	519,988	83,000	89,000	175,000	44,521
1998	10,500	855	1,450	730	2,393	563,614	88,000	91,000	205,000	45,742
1999	10,852	855	1,450	725	2,357	577,505	92,000	91,000	205,000	47,615

Note: Data rounded to nearest whole number; also, it is subject to revision
Sources: Statistics Canada

As Per Cent of Western Canada

Year	MB	SK	AB	BC	MB	SK	AB	BC
	Number of Beekeepers				Number of Colonies			
1990	16	20	12	53	22	25	40	13
1991	15	21	13	51	22	24	42	13
1992	12	21	12	55	22	24	42	12
1993	14	24	13	50	23	24	41	12
1994	14	24	13	49	22	23	43	12
1995	15	27	15	43	22	22	45	11
1996	17	28	14	41	20	22	46	12
1997	17	28	15	41	21	23	45	11
1998	16	27	13	44	20	21	48	11
1999	16	27	13	44	21	21	47	11

Note: Data rounded to nearest whole number; also, it is subject to revision
Sources: Statistics Canada

As Per Cent of Canada

Year	MB	SK	AB	BC	MB	SK	AB	BC
	Number of Beekeepers				Number of Colonies			
1990	17	21	33	7	14	17	28	10
1991	21	24	30	3	17	20	25	5
1992	19	26	35	5	15	21	28	6
1993	16	21	35	4	13	17	31	6
1994	18	23	41	6	15	19	36	8
1995	21	23	32	4	20	22	28	5
1996	18	23	34	6	17	23	33	7
1997	19	24	35	5	19	21	32	8
1998	20	21	38	4	18	19	36	7
1999	22	26	27	3	n/a	n/a	n/a	n/a

Note: Data rounded to nearest whole number; also, it is subject to revision
Sources: Statistics Canada

Canada and Western Provinces

ESTIMATED TOTAL PRODUCTION AND VALUES OF HONEY AND BEESWAX PRODUCED IN CANADA AND SELECTED PROVINCES (1990-1999)

Year	Canada	MB	SK	AB	BC	Canada	MB	SK	AB	BC
	Total Production ('000 lb.)					Total Value of Honey ($'000)				
1990	70,877	12,035	14,880	23,294	5,077	48,544	6,631	8,303	13,552	4,706
1991	69,717	14,440	17,000	21,032	2,430	49,338	8,332	9,707	12,150	2,308
1992	66,867	12,458	17,220	23,088	3,438	48,372	7,475	10,332	13,544	2,838
1993	67,622	11,050	14,104	23,745	2,970	52,121	7,021	8,862	16,275	3,000
1994	75,497	13,365	17,114	31,005	4,554	58,684	8,777	11,226	21,140	4,740
1995	66,115	14,110	15,480	21,306	2,624	63,181	12,442	13,645	17,747	3,209
1996	59,475	10,500	13,680	20,215	3,554	76,959	13,140	17,391	25,337	5,525
1997	68,366	13,280	16,465	23,625	3,673	81,810	15,250	17,275	26,039	6,859
1998	101,595	20,240	21,840	38,335	4,506	93,484	17,200	17,475	34,000	6,827
1999	76,353	16,560	20,020	20,500	2,571	n/a	n/a	n/a	n/a	n/a

Note: Data rounded to nearest whole number; also, it is subject to revision

Sources: Statistics Canada

As Per Cent of Western Canada

Year	MB	SK	AB	BC	MB	SK	AB	BC
	Total Production ('000 lb.)				Total Value of Honey ($'000)			
1990	22	27	42	9	20	25	41	14
1991	26	31	38	4	26	30	37	7
1992	22	31	41	6	22	30	40	8
1993	21	27	46	6	20	25	46	9
1994	20	26	47	7	19	24	46	10
1995	26	29	40	5	26	29	38	7
1996	22	29	42	7	21	28	41	9
1997	23	29	41	6	23	26	40	10
1998	24	26	45	5	23	23	45	9
1999	28	34	34	4	n/a	n/a	n/a	n/a

Note: Data rounded to nearest whole number; also, it is subject to revision

Sources: Statistics Canada

As Per Cent of Canada

Year	MB	SK	AB	BC	MB	SK	AB	BC
	Total Production ('000 lb.)				Total Value of Honey ($'000)			
1990	17	21	33	7	14	17	28	10
1991	21	24	30	3	17	20	25	5
1992	19	26	35	5	15	21	28	6
1993	16	21	35	4	13	17	31	6
1994	18	23	41	6	15	19	36	8
1995	21	23	32	4	20	22	28	5
1996	18	23	34	6	17	23	23	7
1997	19	24	35	5	19	21	32	8
1998	20	21	38	4	18	19	36	7
1999	22	26	27	3	n/a	n/a	n/a	n/a

Note: Data rounded to nearest whole number; also, it is subject to revision

Sources: Statistics Canada

Chapter Notes

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    http://www.tribuneindia.com/20000501/agro.htm#1
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    Apiservices: www.beekeeping.com/countries/india.htm
    The Tribune: http://www.tribuneindia.com/20000501/agro.htm#1
75 Same data sources as applied in previous note, namely:

India Infoline: http://www.indiainfoline.com/sect/fops/ch06.html
Apiservices: www.beekeeping.com/countries/india.htm
The Tribune: http://www.tribuneindia.com/20000501/agro.htm#1

76 FAO data has 1999 India honey exports at 1,500 MT; India's business press has the figures at 7,000 MT: The Tribune: http://www.tribuneindia.com/20000501/agro.htm#1

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Pricing of 24 to 44 cents appear in the following article from India: http://www.tribuneindia.com/20000501/agro.htm
Price of 18 cents per pound calculated based upon the following: http://planningcommission.nic.in/ncsx.htm; http://planningcommission.nic.in/ft.htm