

## THE CANADIAN GINSENG INDUSTRY: PREPARING FOR THE 21ST CENTURY

### Introduction

Canada is a natural habitat for North American ginseng (*Panax quinquefolius L.*) or "xi yang shen"; one of three true ginseng plants from the Araliaceae family. It is indigenous to the eastern areas of North America proliferating in the Ontario, Quebec, and Wisconsin. The Native Indians had used wild North American ginseng for its healing properties long before French colonization (Pritts, 1995). But in 1716, a Jesuit priest, Father Joseph-Francois Lafitau, documented the existence of North American ginseng in Canada. Exports of wild North American ginseng to China began in 1721 and their export value was second only to fur (Evans, 1994). After the introduction of North American ginseng to China, Chinese manuscripts and traditional medical writing documented the benefits of North American ginseng consumption. The Chinese have since prized this herb for its healing and health promoting properties (Duke, 1989).

With time, the wild ginseng population became severely depleted from over-harvesting and commercial cultivation of North American ginseng in Canada began in the late 1890's (Fisher, 1994). But it was not until the early 1980's that ginseng production witnessed exponential growth due to the lure of lucrative profits. By 1998, the industry would see production reach more than 1800 metric tonnes (MT) compared to less than 25 MT in 1982. There are now more than 2000 hectares in production; about one third in British Columbia and about two thirds in Ontario. Export value has increased from just under \$Cdn 3 million in 1982 to more than \$Cdn 61 million in 1998 (Statistics Canada, 1999).

### Ginseng Usage and Properties

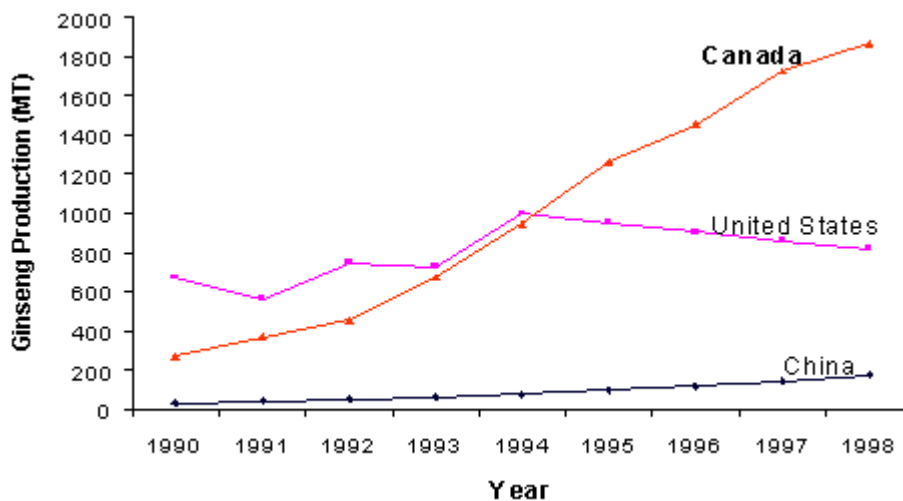
Culturally, many Asian people believe the yin and yang theory based on Daoist philosophy. Yin is the mild, cool force, while yang is the strong, hot force. The equilibrium of these two forces maintains the peace and health of the universe and the same is thought to apply to the human body. It is believed that when yin and yang become unbalanced, the body becomes more prone to sickness and disease. Traditional usage has led to the belief that ginseng can be used to balance the yin and yang levels in the human body. Asian ginseng is believed to represent the yang and is proclaimed as a good tonic for the blood. North American ginseng represents yin and is heralded as an elixir for the immune system and general well being (Proctor and Bailey, 1987; Small, 1997).

Based on the above premises, Asian and North American ginseng are not substitutes. Rather, they complement each other. Each is described as having unique effects. While Asian ginseng is said to have a heating effect that invigorates, stimulates and heals the body, especially when the body is depleted, North American ginseng is said to have a cooling effect that relieves stress, calms the body, and strengthens the internal organs. Claims about North American ginseng benefits come

not only from a traditional Oriental viewpoint, but also scientific research has documented the active ingredients (Lui, 1980; Duke, 1989; Ma et al., 1996). A regular dosage of North American ginseng is believed to reduce stress and fatigue, improve short-term memory, reduce blood pressure, regulate cholesterol and blood sugar level, reduce symptoms of menopause, reinforce the immune system and increase longevity (Pritts, 1995; Small, 1997).

### Key Players in North American Ginseng Production

Canada is the world's largest grower of North American ginseng, accounting for more than 60% of world production (Figure 1). Canada also ranks third in the production of all ginseng, behind only China and Korea, and exports almost 90% of its ginseng root overseas (Statistics Canada 1999, US Department of Agriculture 1999, and Hong Kong Trade Statistics 1998). However, Canada is a minor user of all ginseng species, with imports of about \$Cdn 5 million. Ginseng production in Canada has increased 18 fold in 12 years, from 106 MT in 1987 to 1864 MT in 1998. In the next few years, production will settle and likely decline, allowing North American ginseng prices to stabilize and reflect the economic cost of production.

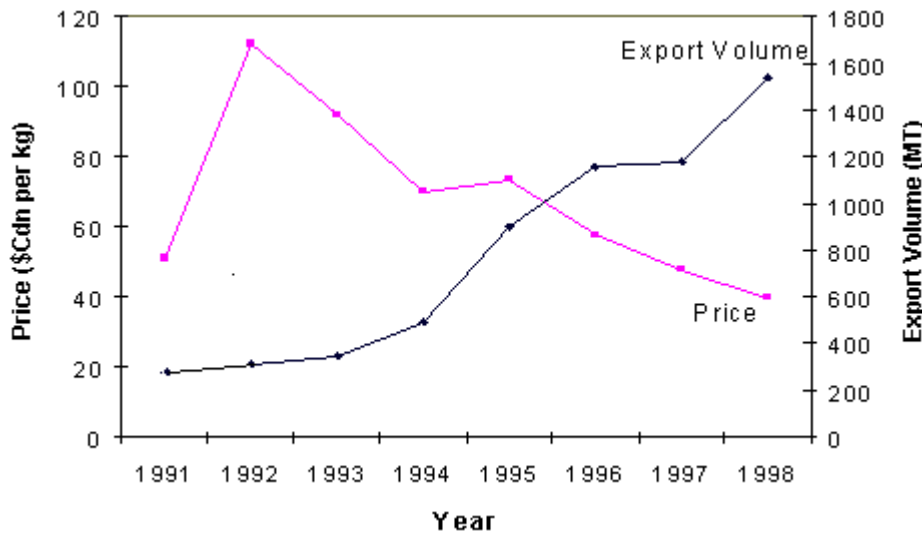


**Figure 1. Major North American ginseng producers\*, 1990-1998.**

The United States represents about 30% of total North American ginseng production. Exporting approximately 800 MT in 1998, the US is the world's second largest producer of North American ginseng and fourth in terms of all ginseng produced. US production has tapered off since 1994. In 1998, its exports of cultivated roots totalled US\$ 20.9 M and 702 MT (USDA, 1999).

China accounts for less than 7% of total North American ginseng production but is the largest consumer of North American ginseng. China has experimented with North American ginseng production since 1947, but it was not until the late 1970s that it achieved operational and economic feasibility (Grade and Quality Standards of Products of Processed American Ginseng, 1998). In 1998, industry estimates of Chinese-produced North American ginseng varied from 150 MT to 300 MT, as China continues to strive for self-sufficiency and avoid the use of precious foreign reserves. China also issued standards on North American ginseng products in December 1998, to further augment the prestige and quality control of domestically grown North American ginseng. However, the Chinese prefer genuine native North American ginseng and often pay a premium for imported North American ginseng (The Guangzhou Drug Company, a major ginseng importer; The Division of Traditional Medicine in Beijing; personal communication).

In the past few of years, there has been a trend in both Canada and the US to decrease North American ginseng production due to lower ginseng prices. The average price of cultivated ginseng dropped from \$112 Cdn per kg in 1992 to \$40 Cdn per kg in 1998, while the average price of wild simulated root dropped from \$243 USD per kg to \$127 USD per kg during the same period. Currently, Canadian ginseng companies need higher yields and better quality ginseng roots to minimize costs, to stabilize prices, and to remain competitive. The total production of Canada and the US may stabilize between 2000 to 2500 MT in the next few years, approaching production levels where prices are economical (Figure 2).



**Figure 2. North American ginseng prices and Canadian export volume\*, 1991-1998.**

Another segment of the North American ginseng industry is the wild simulated North American ginseng or woods-grown ginseng. This product commands on average 10 times the price of field cultivated root at the retail consumer level. North American wild simulated ginseng root exports, primarily US production, peaked at 191 MT in 1996, but have since dropped to 108 MT in 1998 (US\$13.8 M).

### Canada's Key Trading Partners

#### Hong Kong – The Ginseng Gateway

Hong Kong continues to be Canada's premier trading partner for exports of North American ginseng. Exports to Hong Kong represented 84% of all North American ginseng exported from Canada in 1998. China and USA were a distant second and third at 10% and 2% respectively. Canadian export volume of North American ginseng to Hong Kong increased by 29% from 919 MT in 1997 to 1299 MT in 1998 (Table 1). Ginseng export value accounted for 14% of all Canadian agriculture and agri-food products exported to Hong Kong in 1998. Hong Kong has a long tradition of being a global ginseng trade depot. Adding value by providing bulk grading and by providing redistribution services for China and other markets, Hong Kong remains a strong trading centre for ginseng root.

## China – The Main Consumer Market

Although Hong Kong is the first destination market for North American ginseng, more than 80% of the North American roots entering Hong Kong is re-exported to China. The Chinese consumers are the ultimate end users of North American ginseng, and statistics show China consumes (imports) more than 75% of all North American ginseng production (Statistics Canada, Hong Kong Trade Statistics, US Department of Agriculture).

**Table 1. Canadian Domestic Exports of Ginseng Root\*, 1991-1998.**

Country	Quantity In MT							
	1991	1992	1993	1994	1995	1996	1997	1998
<b>Hong Kong</b>	253	239	274	415	834	915	919	1299
<b>China</b>	5	49	46	23	9	13	96	159
<b>USA</b>	6	12	11	9	13	26	45	35
<b>Russia</b>	0	0	0	0	0	130	0	18
<b>Taiwan</b>	6	5	11	18	11	30	41	12
<b>Singapore</b>	3	1	1	9	8	21	24	9
<b>Malaysia</b>	3	6	3	13	16	17	11	6
<b>Japan</b>	0	0	0	1	0	0	0	0
<b>Other</b>	2	0	1	2	7	5	42	2
<b>World</b>	278	312	347	490	898	1157	1178	1540

While China has reduced North American ginseng tariffs from 45% to 40% (plus 13% VAT), most sales to China are still routed via Hong Kong. North American ginseng is sold in bulk to major Hong Kong buyers and then shipped to China for further grading and secondary processing. China is a key market, and if China is accepted into the WTO, it will mean lower tariffs and greater access for North American ginseng. Authenticity and quality are key concerns among the Chinese North American ginseng consumers (Mr. Xu Jin Bai - Deputy Chief Pharmacist of the Shanghai Trade Association of Traditional Medicine Drugs, personal communication), and are factors that support continued desire for imported North American ginseng.

## Other Markets

Singapore, Taiwan, Malaysia and other ASEAN countries are all small but growing markets for North American ginseng. These countries, along with Japan, all recognize the value of ginseng. But due to traditional practices and/or pharmacopoeia, Asian ginseng has dominated their market share. As well, Latin American and European markets hold a higher regard for Asian ginseng. Asian ginseng is almost solely recognized as the ginseng of choice, to the detriment of North American ginseng. There is a need to educate these markets regarding the complementary nature of North American ginseng and Asian ginseng. Currently, all of the above countries are small market niches, but they present significant future potential for the North American ginseng industry should industry associations or major companies invest in marketing, supported with sound scientific research.

## Collaboration between Industry and Government

Ginseng growers in British Columbia and Ontario are members of The Associated Ginseng Growers of British Columbia (TAGG) and/or the Ginseng Growers Association of Canada (GGAC), together representing more than 90% of Canadian ginseng production. Assisted by the Canadian Government, they have formed the Canadian Ginseng Team whose mandate is to develop and implement national ginseng marketing strategies (Charest, 1998).

The team's mission is to increase the export of Canadian-grown North American ginseng root and value-added products. The goals include:

- increasing the market share of North American ginseng in traditional markets, while developing new markets;
- developing the value-added sector and its markets worldwide; and
- increasing adaptability to provide industry stability and sustainability.

The team has identified some key elements required to achieve these goals. The ginseng industry wants a reliable information base to make informed production and marketing decisions, as well as favorable market access conditions worldwide, especially China, for North American ginseng. The industry is working toward stronger national and even trans-national cooperation and coordination to implement a marketing strategy for North American ginseng. It wants quality standards, effective communication tools, quality control programs, sound efficacy research, market information, and a way to educate consumers on the value of North American ginseng. The team must continue to work collectively on planned market development initiatives to address the structural challenges facing the industry. Canada's department of agriculture, Agriculture and Agri-Food Canada, has and will continue to support industry led initiatives, supported by both TAGG and GGAC, that will benefit the ginseng industry in Canada.

## **Conclusions**

In the past two decades, Canada has grown to be the world's largest producer of North American ginseng and is seeking corresponding levels of market development. Farming and post-harvest practices of large Canadian producers are efficient and improving. Canadian companies have reported yield increases from 10-30% over the past 4 years, while costs per hectare have decreased as much as 50% for some companies. The North American ginseng industry has reached a new level in its evolution, one calling for a shift from a production mentality to a market mentality. The producers that are most competitive in yield, quality and price will be the core producers in the future. However, companies that successfully market North American ginseng will be the ones reaping the most reward in terms of profit. Marketing in the 21<sup>st</sup> century will depend on many important factors including quality standards and control, and market and efficacy research. Since communications, access to information, knowledge bases, and trade will increase at an accelerating pace, consumers in the 21<sup>st</sup> century will be more value driven, informed, and demanding. Companies that market successfully to those requirements will be the beneficiaries. The Canadian ginseng industry has overcome many challenges to become the largest producer of North American Ginseng in the world. Supply and demand, production, marketing, international competition, and structural challenges will compound the issues for the Canadian ginseng industry. But by leveraging technology, innovation, centuries of ginseng experience, and a national, collective effort, the Canadian ginseng industry will meet these challenges and prosper into the 21<sup>st</sup> century.

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## References

- Broda, B. 1994. Proceedings of the 1994 International Ginseng Conference. July 17-22, Vancouver, British Columbia, Canada. 10-11.
- Charest, N. M. 1998. National Marketing Strategy for Ginseng. Agriculture and Agri-Food Canada, 3-5.
- Duke, J. 1989. Ginseng: A Concise Handbook. Michigan: Reference Publications, Inc., 91-101.
- Evans, B.L. 1994. Proceedings of the 1994 International Ginseng Conference. July 17-22, Vancouver, British Columbia, Canada, 305-312.
- Fisher, P. 1994. Proceedings of the 1994 International Ginseng Conference. July 17-22, Vancouver, British Columbia, Canada, 56-57.
- Lui, J.H.C. and Staba, E.J. 1980. The Ginsenosides of various plants and selected Products. Journal of National Production, 43(3): 340-346.
- Ma, Y.C., Zhu, J., Benkrima, L., Luo, M., Sun, L., Sain, S., Kont, K. and Plaut-Carcasson, Y.Y. 1996. A comparative evaluation of ginsenosides in commercial ginseng products and tissue culture samples using HPLC. Journal of Herbs, Spices, Medicinal Plants.
- Pritts, K. D. 1995. Ginseng: How to Find, Grow, and Use America's Forest Gold. Mechanicsburg, Stackpole Books. 2-3, 115-125.
- Proctor, J.T.A. and W.G. Bailey. 1987. Ginseng: Industry, botany and culture. Horticultural Reveiws 9: 187-236
- Small, E. 1997. Culinary Herbs. National Research Council Press. Ottawa, Ontario, Canada, 441-449.
- The State Standard of People's Republic of China. 1998. Grade and Quality Standards of Products of Processed American Ginseng.

Canadian Exports, Commodity by Country: Ginseng. 1999. Statistics Canada, Ottawa

Import and Export Data, Commodity by Country, 1998. Hong Kong Trade Statistics. HK.

US Exports, Ginseng Export Data, Field Cultivated and Wild Simulated. 1999. US Department of Agriculture; Statistics USA. Washington, D.C.

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