The US Market for Medicinal Herbs




Introduction

Medicinal plants (botanicals or herbs) have been used throughout history. There are presently as many as 35,000 different plant species used for medicinal purposes worldwide. In the United States, the market for botanical products began to show significant growth during the 1970s, when holistic forms of medicine gained popularity with the public at large. Today, about 25 percent of all prescription drugs are derived from medicinal plants, and sales of herbal remedies at drugstores, supermarkets and other retail outlets have grown substantially.

Some of the most commonly used medicinal herbs in the US are as follows:

- **Ginseng** is one of the most commonly used medicinal herbs. It has been consumed in the US for decades in tea, tablet and extract form. It is used to boost energy, improve stamina and resistance to stress, and is said to improve virility.

- **Echinacea**, a species of chrysanthemum, is reported to be the most widely used medicinal herb in the US. Its primary use is to boost immunity and prevent colds and the flu, as well as related symptoms such as respiratory tract infections.

- **St. John's Wort** is derived from the yellow flower of that name. It is native to Europe where it was valued for centuries in treating arthritis, bruises, sprains, circulation problems and gout. In the US, it is a popular treatment for mild depression and anxiety.

- **Kava Kava,** obtained from the root of a pepper plant, has been used for centuries in the South Pacific as a ceremonial drink. Recent media attention has led to its popularity as a stress-reliever.

- **Gingko** is a native Chinese herb that has reportedly been in use for thousands of years. It has enjoyed popularity in the US among the elderly as a treatment for memory loss by improving the flow of blood through the arteries. It is also said to help with depression and headaches.

- **Valerian** is native to Europe and Asia, and is popularly used as a sedative to treat nervous tension, muscle spasms, cramps, and related conditions. It is also said to aid digestion.

- Other popular medicinals include **Peppermint**, **Black Cohosh**, **Saw Palmetto**, **Goldenseal** and many others.

Production

Growing demand for medicinal plants and extracts has led to a rapid increase in production. Major investments in the cultivation of medicinal plants has occurred in states such as Kansas, Oregon, Florida and North Carolina, and has stimulated demand for imports particularly from Europe and China which are the dominant international producers.

Echinacea

The US is presently experiencing an oversupply of certain herbals such as **Echinacea *purpurea***, **Valerian Root** and **Black Cohosh**, while the market is generally stable for products like **Astralagus** and **Echinacea *angustifolia***. Shortages of products such as **Milk Thistle** are projected for most of 2001.

The Florida **Saw Palmetto** (*Sabal serrulata*) crop is above average, with carry-over stocks from last year estimated at a minimum of 2,000 MTs. Despite overproduction strong demand for this item is expected to continue.

The US autumn **Peppermint** (*Mentha piperita*) harvest in 2000 yielded lower output than the previous year, largely due to reduced plantings and poor prices received. The current area under production is the lowest since 1988, and overall returns from this crop continue to be low.

Spearmint production seems to have suffered less than Peppermint with steady or rising production in the main growing areas

Goldenseal (*Hydrastis candensis)*, formerly harvested wild, is now being cultivated by several US companies. A number of forest "enrichment" programs have also been undertaken in several areas of the Blue Ridge Mountains, which is the main habitat of this plant. The development of suitable cultivation techniques may secure the future of this presently endangered plant.

Black cohosh (*Cimicifuga racemosa)* production has increased 300 percent in recent years and a slight oversupply is projected through 2001. The continued popularity of this plant has prompted moves by conservationists to lobby for CITES Appendix 2 listing. In anticipation of possible restrictions on wild harvesting of Black Cohosh, several companies are stepping up efforts to cultivate this herb commercially and organize replanting of wild stands.

In 1999, the US Fish and Wildlife Service banned the export of **Wild Ginseng** root out of fear that the plant was close to endangered status. Over harvesting of the root was driven by high prices received in Asian markets, where North American Wild Ginseng is highly

valued. Recently, a survey was undertaken in Virginia by TRAFFIC with a view to promoting a better understanding of the role of traders in the market for Wild Ginseng.

The survey revealed the following concerning the attitudes of the traders towards conservation efforts:

- The majority of traders were in favor of mandatory measures to control harvesting;
- A small majority felt that the average volume of wild roots being harvested was declining;
- The majority were satisfied with the current certification program;
- Diggers needed better understand the ecology of ginseng;
- Traders needed better and timelier market information;
- Improved training of law enforcement officers is needed;
- More information was needed about the Wild Ginseng population, including its status and survival.

Ginseng root

Imports

Importers note that China and India are the dominant medicinal herb suppliers to the US. An analysis of medicinal herb imports is made complicated by the difficulty in obtaining item-specific data for the many varieties imported into the US. Official US trade data does track several items, including imports of ginseng roots as well as other miscellaneous medicament substances, which are presented in Tables 1 and 2.

Table 1: US Imports of Cultivated Ginseng Roots

Origin	1996		1997		1998		1999		2000	
	MTs	$000s	MTs	$000s	MTs	$000s	MTs	$000s	MTs	$000s
China	290	2,819	421	4,258	523	5,839	387	6,446	208	2,793
Hong Kong	87	3,752	63	2,060	37	879	20	1,001	136	5,560
Canada	25	1,117	45	1,323	32	2,149	37	853	56	1,693
S Korea	35	2,815	20	2,170	41	2,537	26	690	22	1,812
Japan	2	87	3	259	3	233	2	190	1	61
Fiji							3	18		
Russia							11	49		
Germany			1	26	1	16	8	208		
Others	17	174	4	50	1	1	2	13	1	44
Total	**457**	**10,763**	**556**	**10,147**	**637**	**11,654**	**496**	**9,468**	**423**	**11,963**

Source: US Dept. of Commerce

Table 2: US Imports of Miscellaneous Substances for Medicaments

Origin	1996		1997		1998		1999		2000	
	MTs	$000s	MTs	$000s	MTs	$000s	MTs	$000s	MTs	$000s
China	218	1,519	473	4,204	586	3,115	654	6,371	459	3,244
India	255	488	470	971	336	681	352	541	221	450
Netherlands	290	974	233	619	131	323	278	717	142	349
Fiji	13	151	23	223	30	294	45	556	40	578
Philippines	3	3			30	20	33	51	38	28
Germany	132	2,515	68	1,124	233	2,424	5	114	30	143
Morocco	29	30	125	133	34	31	69	62	27	23
Russia									20	58
Thailand	3	5	10	16			4	6	13	11
Canada	14	165	6	119	7	119	7	82	11	171
Others	409	2,707	482	1,245	429	2,961	97	698	31	593
Total	**1,365**	**7,681**	**1,889**	**9,287**	**1,817**	**8,887**	**1,545**	**10,417**	**1,034**	**6,883**

Source: US Dept. of Commerce

Prices

Medicinal herb prices fluctuate with shifts in supply and demand. The prices below should be considered indicative only. In addition, great care should be taken when comparing prices of medicinal plants and extracts from differing origins, since form, structure and biochemical activity may differ considerably between apparently similar products. The levels of active ingredients referred to are those commonly found in the industry, and are not intended to imply any sort of standard.

Indicative prices for March 2001 ($US/kg)

Raw Materials:

Product	Source	Price	Destination
Valerian Root	USA	2.0-4.5	cif North Europe
Ginger	Chinese	1.5-1.8	fob New York
Turmeric 5% Curcumin	India	1.2-1.5	cif New York
Saw Palmetto	USA	2.8-3.2	fob Florida
Chillies S4	India	1.10-1.25	cif New York

Extracts (Indicative wholesale prices: US $/kg)

Product	Active Ingredients	%	Price
Gingko Biloba	Flavonglycosides/Lactones	25/6	$50-$60
Green Tea	Polyphenols	>50	$20-$30
Black Cohosh	Terpenoid Saponins	2.5	$50-$65
Saw Palmetto	Fatty Acids	20-25	$35-$45
St Johns Wort	Hypericine	0.3	$30-$40
Chinese Ginseng	Ginsenocides	0.8	$15-$30
Siberian Ginseng	Eleutherosides	0.8	$30

Trends

US demand for medicinals increased significantly during the 1990s. Demand was particularly strong among the aging baby boom generation, eagerly seeking preventive treatments for various ailments as opposed to prescription treatments, which are usually available only after a problem occurs.


Kava Kava

In 1994, the Dietary Supplement Health and Education Act classified medicinal herbs as food "supplements," as opposed to strictly defining them as "medicines" or "food products." This exempted medicinals from official FDA food and drug standards. Consequently, sales and distribution of medicinal herbs have increased at most of the major retail channels (see Table 3). Sources indicate that the positive market response is self-reinforcing, as the widespread availability of medicinal products at trusted retail centers has increased their apparent legitimacy and appeal among consumers.

Table 3: Selected Natural Products Sales Growth, 1997-98

Category	Annual Sales Growth	
	Natural Products Stores	Food/Drug/Mass Outlets
Glucosamine/Chondroitin Products	30.7%	300.0%
Calmative Herbal Singles*	42.3%	183.2%
Women's Herbal Formulas	77.7%	109.4%
Facial Lotions and Cremes	35.0%	5.8%
Topical Homeopathics	17.8%	14.7%
Liquid Laundry Products	29.9%	N/A

Source: ACNielsen Scan Track/SPINS NaturalTrack

**Includes Valerian, Kava Kava, and Chamomile*

The lucrative medicinals market has also drawn larger pharmaceutical firms into the industry, with trusted names such as Bayer (One-A-Day) and Warner-Lambert (Sudafed, Benadryl) now offering their own remedies. It is expected that this development will further boost public acceptance of medicinals and lead to more first-time buyers, although *Herbalgram* reports the result thus far has been increased competition for existing consumers, rather than an influx of new buyers.

The fastest growing medicinal herb in the US has been **Soy** (isoflavones) while specialty products like **Lycopene** (ex Tomato) have also seen a rapid growth in sales. Medicinal plants used in over-the-counter medicines and for which legal drug claims can be made enjoy a relatively stable market than dietary supplements. These include **Aloe Vera**, **Senna**, **Pysillium**, **Cascara** and **Witchhazel**.


The flower of the St. John's Wort plant

Price and supply volatility is partly a result of consumer trends. **St. Johns Wort** is a prime example of a medicinal

product whose popularity soared as a result of positive publicity in 1998. As a result, St. John's Wort was heavily cultivated and manufactured and this shortly led to overproduction and a drop in prices.

Industry sources indicate that 1999 represents the first year that medicinal herb sales have declined since 1994 (based on information collected in FMD retail outlets using scanner data; see Table 4). Despite the drop in dollar sales for many of the major varieties, unit sales are reported to have risen for herbal products across the board, although this data is not available. Nevertheless, US retail sales of medicinal herbs are estimated at $4 billion annually, up from $1.6 million in 1994.

Table 4: Selected Medicinal Herb Sales 1998-99 (January-September)

Herbs	Jan-Sep 1998	Jan-Sep 1999	% Change
1. Ginkgo	$109,299,184	$102,745,256	(6.0%)
2. St. John's Wort	$101,299,264	$78,095,008	(23.3%)
3. Ginseng	$71,247,472	$60,158,456	(15.6%)
4. Echinacea/Goldenseal	$44,678,772	$44,594,288	(0.2%)
5. Kava Kava	$10,930,088	$11,594,024	7.1%

Source: HerbalGram

Despite the slowdown in sales of medicinals, there is wide variation in demand for certain plants and extracts. The overall market for dietary supplements, which was growing at around 6 percent in 1999, dropped to under 3 percent in 2000. The herbal segment is generally more sluggish than other sectors of the nutrition industry such as functional foods, vitamins and minerals. The market for functional foods (foods with specific health benefits) has been growing at more than 9 percent per year.

Specifications

According to a Frontier Cooperative Herbs report, some herbalists prefer to source botanicals from small local growers rather than large nationwide distributors. In general, the major factors affecting prices obtained by growers include:

- Color;
- Aroma;
- Flavor;
- Percentage of extraneous matter;
- Size;
- Moisture content;
- Presence of mold;
- Chemical properties.

Prices received for medicinal products also depend on their stage of processing, with better prices obtained for higher stage items (i.e., standardized extracts which receive a value-added premium over dried herbs).

Some common (but not universal) industry specifications provided by the ITC are as follows:

1) Echinacea

Primary therapeutic indications:

- Anti-inflammatory
- Immune Stimulant
- Accelerates wound healing

Properties:

• Product	Stems and leaf extract
• Botanical name	*Echinacea Purpurea*
• Description	light brown top green fine powder
• Odor	Characteristic
• Standardization	4.0% polyphenols
• Solvent used	Ethanol
• Particle size	80 mesh
• Heavy metals	<10 ppm
• Sulphated ash	<5.0%
• Bulk density	45-65 g/100ml
• Moisture	<5%
• Total plate ct	<1000 cfu/g
• E. coli	none
• Salmonella	none
• Yeast & moulds	< 100 cfu/g

2) Saw Palmetto

Primary therapeutic indications:

- Relief of symptoms of benign prostatic hypertrophy (BHP)
- Relief against urinary tract and bladder irritation

Properties:

• Product	Berries of *Sabal Serrulata*
• Description	Brown to dark brown powder
• Odor and taste	Characteristic
• Standardization	>15.0% free fatty acids
• Particle size	80 mesh
• Heavy metals	<10 ppm
• Moisture	<5%
• Excipient	Tricalcium phosphate/maltodextrin
• Total aerobic ct	< 5000 cfu/g
• E. coli	none
• Salmonella	none
• Excipient	Maltodextrin

3) St Johns Wort extract

Primary therapeutic indications:

- Alleviate symptoms of mild to moderate depression
- Stabilize mood
- Improve stress tolerance

Properties:

• Product	aerial parts of hypericum perforatum
• Description	gray brown-brown fine powder
• Standardization	0.3% hypericins (0.15-0.20% by HPLC)
• Particle size	80 mesh
• Heavy metals	<10 ppm
• Moisture	<5%
• Excipient	Tricalcium phosphate/maltodextrin
• Total aerobic ct	5000 cfu/g
• E. coli	none
• Salmonella	none

Regulations

Four US trade organizations have called upon the FDA to draft federal standards concerning the formulation, labeling and use of **Ephedra** in the USA . Excess use of Ephedra-based supplements, especially alongside other drugs, have been shown to be harmful and led to calls in many parts of US to ban or limit its use. The trade organizations are recommending a limit of 25 mg per dose and a maximum daily intake of 100 mg, while recommendations from the FDA are significantly lower.

Wild Ginseng (*Panax quinqufolius*) is protected under CITES Appendix 2 with annual quotas issued by state wildlife authorities. Although the product is becoming more readily available in cultivated form through expanded production in the US (Wisconsin) and Canada (British Colombia), Chinese buyers maintain a strong preference for Wild Ginseng for which they pay significant premiums.

The recent US proposal for Appendix 2 listing of **Guaiacum** (*Guaiacum officinale*), a medicinal resin obtained from the wood of this tropical tree, has been withdrawn pending further investigation. The tree grows in Florida, the Caribbean and Latin America.

Conclusion

Sources indicate that the market for medicinal herbs will continue to grow, albeit at a reduced pace from the boom period of the mid- to late-1990s. The current challenge facing industry members is in attracting new consumers to the products, as indicators suggest the number of people consuming medicinal herbs has leveled. Future sales are therefore contingent on public education. This is partly a result of the lack of proper scientific research

and documentation on medicinal herbs and their properties, such as that carried out by pharmaceutical firms for over-the-counter medicines, which is necessary in building consumer confidence.

Currently, the authoritative source of information on the uses and properties of medicinal herbs comes from Germany's Expanded Commission E Monographs (published by Interactive Medicine Communications and the American Botanical Council). The Monographs are a comprehensive collection of scientific analyses performed to date for all of the major medicinal herb varieties, and include sections on history, botany, composition, safety and therapeutic uses for each herb subject. While scientific research into the benefits of medicinal herbs could possibly be carried out by pharmaceutical companies in the future, investigations are currently hampered by the inability of these firms to patent any of their subjects.