

Status of the Wisconsin Ginseng Industry

Lan Cheng and Paul D. Mitchell



Ginseng garden on beautiful Wisconsin farmland



Shaded ginseng garden



Five year old American ginseng (Nix 2007)



Graded Wisconsin ginseng root

Department of Agricultural and Applied Economics, University of Wisconsin-Madison
427 Lorch Street, Madison, WI 53706-1503
Voice: (608) 265-6514, Email: pdmitchell@wisc.edu
<http://www.aae.wisc.edu>

Acknowledgements

Funding and resources for this project provided in part by the Department of Agricultural and Applied Economics at the University Wisconsin-Madison, University of Wisconsin-Extension, Program on Agricultural Technology Studies, and the Ginseng Board of Wisconsin.

We wish to acknowledge the assistance of the following persons who provided input regarding the survey design and/or read early drafts of this report, including Dana Butler, Tom Cadwallader, Zhe Dun, Jeremy Foltz, Li Hu, Jill Harrison, and Butch Weege.

The authors are solely responsible for the findings and the conclusions reported here are not the official positions of the Ginseng Board of Wisconsin, the Ginseng and Herb Cooperative, the University of Wisconsin-Madison, or the University of Wisconsin Extension.

Copyright 2009 by Paul D. Mitchell and Lan Cheng. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provide that this copyright notice appears on all such copies.

Contents

The Wisconsin Ginseng Industry.....	1
What is Ginseng?.....	1
History of the Wisconsin Ginseng Industry.....	5
Ginseng Board of Wisconsin and Wisconsin Ginseng Seal.....	9
Current Condition of the Wisconsin Ginseng Industry.....	11
Executive Summary.....	11
The “Typical” Wisconsin Ginseng Grower.....	13
Tables Summarizing Survey Responses.....	16
Conclusions and Suggestions.....	29
References.....	33
Appendix A: Mail Survey.....	35

The Wisconsin Ginseng Industry

What is Ginseng?

Ginseng, a member of the Araliaceae family, is a slow-growing herbaceous perennial. Its scientific genus name *Panax* means “cure all”. The two species consumed in high volumes are *Panax ginseng* and *Panax quinquefolius*. *Panax ginseng* is often described as Asian, Chinese or Korean ginseng and is found in northeastern China, the Korean Peninsula and the Pacific regions of Russia. *Panax quinquefolius*, usually referred to as American ginseng, is indigenous to the southern portions of Ontario and Quebec in Canada and the midwestern, southern and eastern parts of the United States.

The dried roots from older ginseng plants are generally used medicinally to treat a variety of ailments, most often those associated with stress and fatigue. In traditional Chinese medicine, the temper of Chinese and Korean ginseng is thought to be hot (Yang), which is not suitable for patients and old people to take frequently. In contrast, American ginseng is thought to be cool (Yin), which means it can be taken regularly for long periods of time. Clinical trials have examined the effect of ginseng on a variety of medical conditions, including cardiovascular risk factors, type 2 diabetes, and for cancer or for those receiving cancer treatments, as well as for improving the overall quality of life. (Buettner et al. 2006; Helm 2004; Ellis and Reddy 2002; Vuksan and Sievenpiper 2005)

Ginsenosides are generally believed to be the compounds found in ginseng roots that are mainly responsible for the pharmacological actions of ginseng. Figure 1 illustrates the concentration of ginsenosides in ginseng roots from various world regions and shows that American ginseng roots possess higher concentrations of this natural ginsenosides than the Asian ginsengs examined. This clinical testing has also shown the ginsenoside content to be two percentage points higher in roots found in the wild compared to cultivated roots (Duke 1989). This higher concentration is the reason that wild ginseng and North American ginseng typically command higher prices than other types of ginseng.

After the Second World War, demand began to increase gradually, and ginseng markets expanded in China, Taiwan, Hong Kong and Korea as they recovered from the war. From 1960 to 1992, both the price and demand for American ginseng continued to increase, so that the export volume increased to over \$104 million in 1992 (U.S. Department of Commerce-Foreign Trade Service 2008). However, after a short period of stability, the price started falling in 1996 and continued to do so until 2005. Sales of American ginseng dropped to \$20.8 million in 2005, due to a decline in world market prices and the take-over by Canada in 1996 as the leading exporter of ginseng in North America. Nevertheless, the U.S. export price has continuously increased for 2006 and 2007, especially for wild ginseng, for which the price increased by about

70% (Figure 2). Overall, from 1997 to 2007, the average export price of U.S. cultivated ginseng was \$19.30/lb and that of wild ginseng was \$84.50/lb (Table 1).

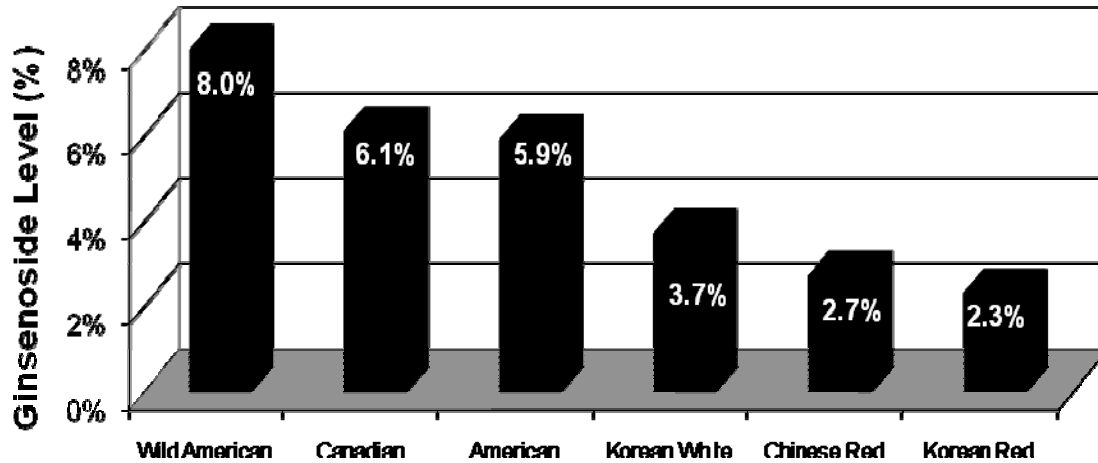


Figure 1 Comparison of Average Natural Ginsenoside Levels (% dry weight).

(Source: Duke 1989).

Hong Kong and China are the largest importers of U.S.-grown ginseng roots. Hong Kong, where ginseng enters duty-free, has traditionally been the largest importer of U.S. ginseng, with much of these imported roots redistributed to other parts of Asia (Harrison et al. 2000). From 1996 to 2007, Hong Kong on average imported about 65% of U.S. ginseng exports (Table 2). China, traditionally the second largest importer, has seen a large increase in the value of imported U.S. ginseng. Indeed, in 2003 it actually imported more than Hong Kong, but the size of its imports from the U.S. relative to Hong Kong has varied greatly in recent years (Table 2; Figure 3). The remaining nations account for less than \$3 million in import value of U.S. ginseng. Figure 3 shows the value of ginseng exports from the U.S. to Hong Kong and China. Interestingly, in the U.S., ginseng and ginseng products are marketed in Asian food and health food stores, with most of the ginseng actually imported from Korea. In terms of amount, the Asian ginseng imported into the U.S. is about equal to the higher-priced American ginseng exported to Asia (Harrison et al. 2000).

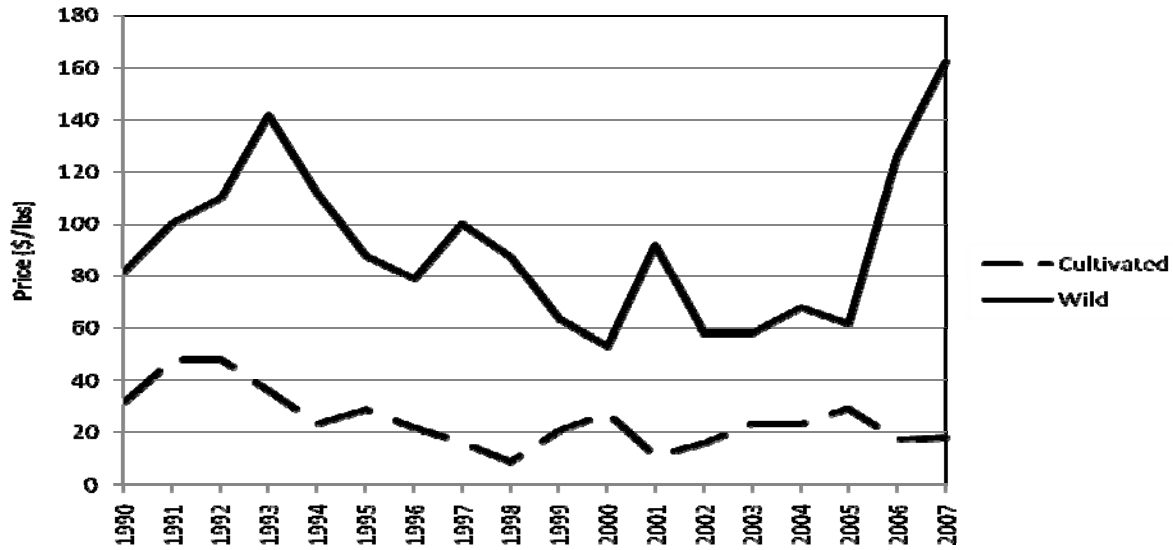


Figure 2 Export Price of U.S. Cultivated and Wild Ginseng.

(Source: U.S.Department of Commerce, Foreign Trade Service)

Table 1 U.S. Ginseng Export Volume, Value and Price

Year	Quantity (mt)			Value (US\$ million)			Price (\$/lb)		
	Cultivated	Wild	Total	Cultivated	Wild	Total	Cultivated	Wild	Total
1990	997.7	67.6	1065.3	69.8	12.1	81.9	31.7	81.3	34.9
1991	586.4	60.3	646.6	62.1	13.3	75.4	48.0	100.4	52.9
1992	755.1	100.3	855.4	80.1	24.5	104.6	48.1	110.6	55.4
1993	716.2	69.6	785.9	57.5	21.8	79.3	36.4	141.9	45.7
1994	971.9	104.3	1076.2	49.9	25.7	75.6	23.3	111.8	31.9
1995	704.1	162.4	866.6	44.9	31.4	76.4	28.9	87.8	40.0
1996	669.4	191.5	860.9	33.3	32.5	65.7	22.0	78.8	34.6
1997	699.7	143.5	843.2	31.6	25.3	57.0	16.4	99.9	30.6
1998	702.2	108.7	810.9	20.9	13.8	34.8	8.9	87.3	19.4
1999	447.8	117.1	564.9	16.4	20.6	37.0	20.9	63.4	29.7
2000	405.5	144.2	549.6	16.9	24.5	41.4	27.4	53.2	34.2
2001	434.0	71.2	505.2	14.4	10.7	25.1	11.2	91.8	22.6
2002	320.6	173.8	494.5	11.4	22.2	33.6	16.1	58.0	30.8
2003	284.0	188.6	472.7	14.6	24.1	38.7	23.3	57.9	37.1
2004	295.4	119.2	414.6	15.2	17.8	33.1	23.4	67.9	36.2
2005	121.1	96.1	217.2	7.8	13.0	20.8	29.2	61.5	43.5
2006	204.1	90.5	294.6	7.9	25.2	33.0	17.5	126.1	50.9
2007	337.8	106.6	444.4	13.6	38.3	51.9	18.3	162.9	53.0

(Source: U.S.Department of Commerce, Foreign Trade Service)

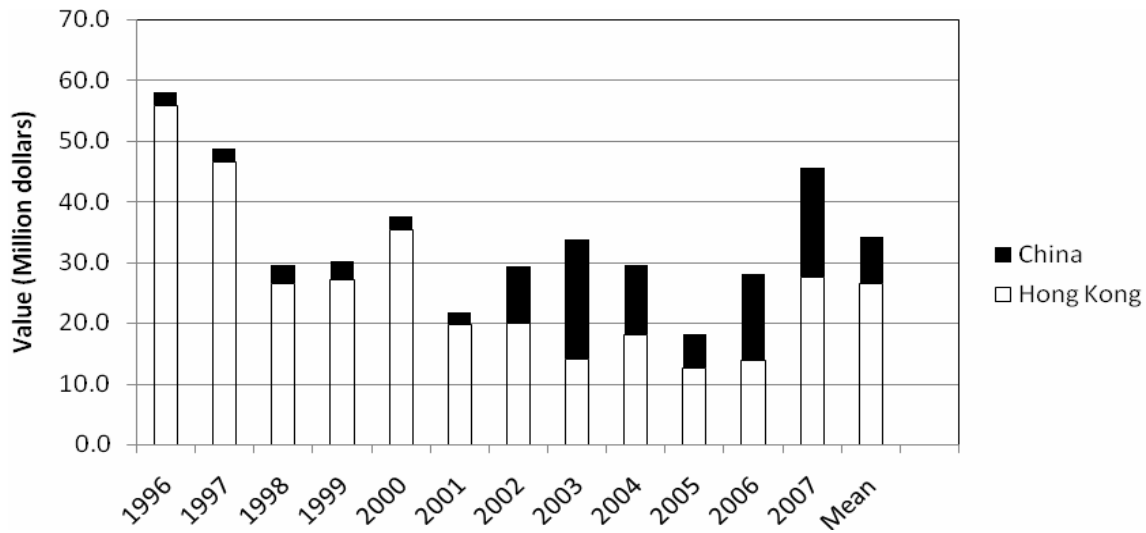


Figure 3 Export Value of U.S. Ginseng to Hong Kong and China.

(Source: U.S. Department of Commerce, Foreign Trade Service)

Table 2 Export Value of U.S. Ginseng to Hong Kong and China

Year	Hong Kong		China		U.S. Total Value (US\$ million)
	Value (US\$ million)	%	Value (US\$ million)	%	
1996	56.0	90	2.1	0	65.7
1997	46.6	80	2.1	0	57.0
1998	26.6	80	3.0	10	34.8
1999	27.3	70	2.8	10	37.0
2000	35.3	90	2.3	10	41.4
2001	19.8	80	1.9	10	25.1
2002	20.0	60	9.3	30	33.6
2003	14.1	40	19.7	50	38.7
2004	18.1	50	11.4	30	33.1
2005	12.6	60	5.4	30	20.8
2006	14.0	40	14.1	40	33.0
2007	27.7	50	17.8	30	51.9

(Source: U.S. Department of Commerce, Foreign Trade Service)

History of the Wisconsin Ginseng Industry

Wisconsin ginseng is famous for its high quality, since it is believed that Wisconsin ginseng roots possess the highest level of natural ginsenosides. As reported from website of FCF Ginseng Farm, a Wisconsin ginseng grower, their ginseng product contains an average of 13% ginsenoside by weight compared to other American ginseng and oriental varieties, which contain average ginsenoside levels usually lower than 9% (Figure 1).

Wisconsin also has a long history of ginseng cultivation, beginning in 1904 when the Fromm brothers from the Wisconsin township of Hamburg (near Wausau) transplanted 100 wild ginseng plants from nearby forests to carefully prepared plots that duplicated natural growing conditions (Pinkerton 1947). Many others soon replicated the process and began commercial production of ginseng, so that in the early 1900s, thousands of ginseng farms existed in Wisconsin. In 1919, Wisconsin became the leading ginseng-producing state in the U.S. and by 1920, ginseng farms were found in almost all Wisconsin counties (WGGA 1910). Unlike other states, Wisconsin maintained ginseng production during the Second World War and its dominance continued after that time. In 1954, out of the 21 acres of cultivated ginseng in the U.S. (quite small compared to the current cultivated area), 20 were in Wisconsin (Carlson 1986). This dominance continued as the industry expanded in the 1960s and after. Today, Wisconsin still possesses the top position of ginseng production in terms of both acreage and volume. For example, Figure 4 shows that Wisconsin produced more than 90% of all cultivated ginseng produced in the U.S. in 1997.

The acreage and sales of Wisconsin ginseng have decreased dramatically since 1996. For example, in 2002, growing acreage in the state was merely 2,135 acres, which was less than half of that in 1998 (Figure 5). Ginseng sales plummeted from around 2 million lbs in 1996 to less than 0.3 million lbs in 2006, losing around 90% of the volume within 10 years (Figure 6). Table 3 shows that state's ginseng growers sold 282,055 pounds of dry root in 2006, which is over a 21% decrease from 2005.

As for the population of ginseng farmers, from 1970 to 1983, there was a tenfold increase in the number of growers in Wisconsin, and from 1983 to 1997 the number merely doubled (WASS 2006). However, in 2006 the number decreased by 84.3% compared to that in 1997 (Figure 6). Part of the reason for this decrease was the falling price of ginseng. In addition, new entrants may have been discouraged by growers keeping their operations and profits private, so the true profitability of the crop was not well known to many possible new growers.

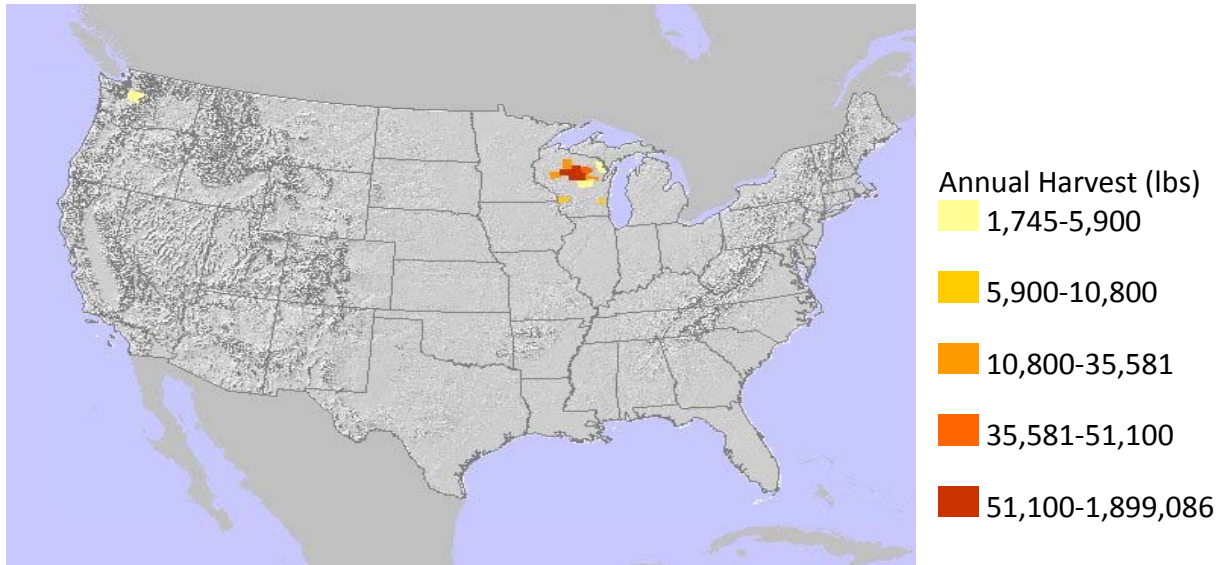


Figure 4 U.S. Ginseng Harvested in 1997

(Source: U.S. Department of Agriculture, Economic Research Service)

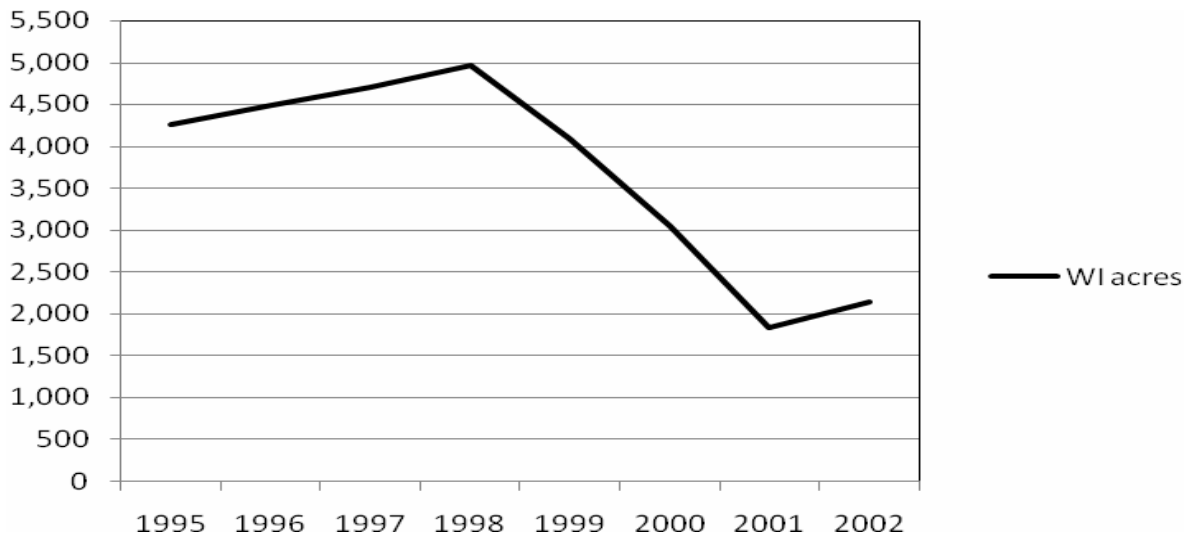


Figure 5 Ginseng Growing Acreage of Wisconsin

(Source: Wisconsin Agricultural Statistics 2006, 2007)

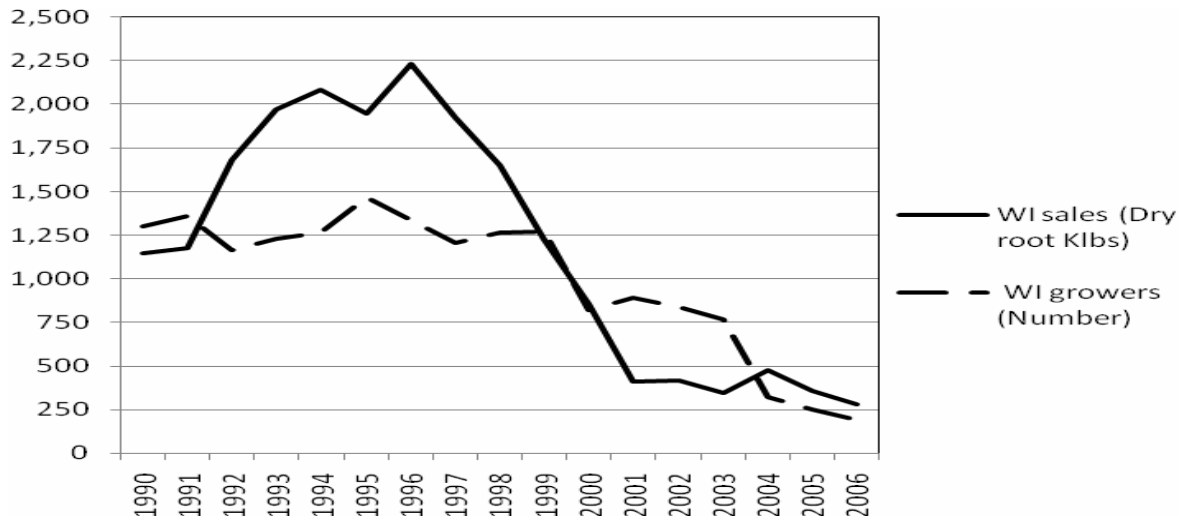


Figure 6 Ginseng Sales and Growers of Wisconsin
 (Source: Wisconsin Agricultural Statistics 2006, 2007)

Table 3 Wisconsin Ginseng Growers, Acreage and Sales

Year	Acres	Sales (1,000 lbs)	Growers (Number)
1990	–	1,149	1,300
1991	–	1,174	1,360
1992	–	1,677	1,167
1993	–	1,966	1,230
1994	–	2,083	1,264
1995	4,264	1,944	1,468
1996	4,494	2,230	1,336
1997	4,710	1,922	1,207
1998	4,967	1,651	1,266
1999	4,093	1,221	1,274
2000	3,054	859	818
2001	1,835	411	890
2002	2,135	421	840
2003	–	350	764
2004	–	477	322
2005	–	358	247
2006	–	282	190

(Source: Wisconsin Agricultural Statistics 2006, 2007)

Marathon County is the top ginseng growing county in Wisconsin, producing more than 80% of Wisconsin’s ginseng. It was the ideal growing conditions plus the perseverance of the early ginseng growers in Marathon County that has made it the ginseng capital of the U.S. (Harrison et al. 2000). By the first half of the 1960s, 200 of the estimated 300 acres of cultivated ginseng in the U.S. were reportedly found in Marathon County (Carlson 1986). It is estimated that in 1990 (when growing ginseng was a very profitable business), sales of the root earned almost \$70 million for farmers in Marathon County (Harrison et al. 2000). However, since the middle of 1990s when world-wide production of ginseng increased dramatically and prices started falling, the ginseng industry began to shrink in Marathon County (Table 4). In 2002, only 402 ginseng farmers were located in Marathon County on 1,070 acres of land, which declined from 827 farms with 2,125 acres of ginseng in 1997. Nevertheless, the county is still the largest ginseng producing county in Wisconsin—in 2002, Marathon County ginseng farmers produced 86% of the ginseng harvested in the state (Table 4).

The retail price of Wisconsin cultivated ginseng ranges from \$30 to \$120 or even reaching \$300 per pound, much higher than the export price for dry roots, which ranges from \$15 to \$40 per pound. Table 5 shows the selected 2008 price lists of cultivated ginseng products from three ginseng growers in Wisconsin: Hsu’s Ginseng Enterprises Inc., Schumacher’s Wisconsin Ginseng and FCF Ginseng Farm. The grading standards for ginseng and price units differ from each other, which makes comparisons among them difficult.

Wild Wisconsin ginseng is still available on the market, although it has been defined internationally as an endangered species due to over-harvesting since the mid-1970s. Currently, 18 states including Wisconsin issue licenses to harvest wild ginseng. Besides in Wisconsin a registration and sale certificate from the Wisconsin Department of Agriculture are required to cultivate and sell ginseng.

Table 4 Ginseng Production of Marathon County

Year	Marathon Growers	% of WI	Marathon Acres	% of WI	Marathon Quantity (1000 lbs)	% of WI
1992	649	82.7%	1234	86.4%	1460.8	87.3%
1997	827	83.3%	2125	87.1%	2511.5	84.7%
2002	402	77.0%	1070	84.9%	743.9	85.9%

(Source: USDA, the Census of Agriculture)

Table 5 Selected Ginseng Retail Price Lists of 2008

Description	^a Hsu's Ginseng Enterprises Inc. (\$/lbs)	Description	^b Schumacher's Ginseng LLC. (\$/lbs)	Description	^c FCF Ginseng Farm Price list (\$/lbs)
Long		Long		Root (Mix sizes, 4 oz.)	102
Jumbo	116	Extra Large	97	Root (Mix sizes, 8 oz.)	96
Extra Large	109	Large	84	Root (Mix sizes, 1lb)	56.5
Large	96	Small	28.7	Powder (4 oz.)	64
Medium	87	Half Short		Powder (8 oz.)	48
Small Bulk	42	Extra Large	97	Powder (1 lb.)	34.85
Half Short		Large	82	Cut/Slices (Mix sizes, 4 oz.)	70
Extra Large	111	Medium	76	Cut/Slices (Mix sizes, 8 oz.)	63
Large	103	Short		Cut/Slices (Mix sizes, 1 lb.)	46
Medium	93	Large	89		
Small #1	77	Medium	85		
Short		Small	87		
Extra Large	124				
Large	114				
Medium	107				

Note: All prices are converted to dollar per pound.

(Source: ^a<http://english.hsuginseng.com/product/product.aspx?CatId=102153718>,

^b<http://www.schumacherginseng.com/Page3.html>, and ^c<http://www.fcfginseng.com/site/679718/page/45031>).

Ginseng Board of Wisconsin and Wisconsin Ginseng Seal

In order to advertise and promote the sale of Wisconsin ginseng in national and international markets, the Wisconsin ginseng growers established the Ginseng Board of Wisconsin (GBW) in 1986 as a non-profit organization. The GBW is managed by a member-elected board of seven ginseng producers who represent all the registered ginseng producers. The board functions under a marketing order managed by the Wisconsin Department of Agriculture, Trade and

Consumer Protection which is responsible for collecting the assessment on sales of ginseng. This board is responsible for the management of an annual assessment totally between \$60,000 and \$80,000, and the current rate is 20 cents per pound of dry root and \$3 per pound of seed. (Ginseng Board of Wisconsin 2008; Wisconsin Department of Agriculture, Trade and Consumer Protection 2008)

To help consumers identify authentic Wisconsin ginseng in a simple, consistent and convenient way, in 1991 the GBW initiated the Wisconsin Ginseng Seal Program, which requires that packaged ginseng products bearing the official Wisconsin Ginseng Seal® must contain 100 percent pure Wisconsin Ginseng, grown and harvested in Wisconsin. The Wisconsin Ginseng Seal (Figure 7) is intended to be seen as an indication of the product's quality, as ginseng grown in Wisconsin is internationally revered for its potency due to a high percentage of ginsenoside as mentioned above (HerbalGram 2007). The GBW authorizes use of the Wisconsin Ginseng Seal® to distributors who meet criteria established on the board.



Figure 7 Wisconsin Ginseng Seal and an example of its exclusive use by Eu Yan Sang

(Source: Ginseng Board of Wisconsin www.ginsengboard.com and Wisconsin Ginseng and Herb Cooperative www.ginsengherbco-op.com).

During the early 1990s just after the seal was first implemented, consumers regarded Wisconsin ginseng as the best and there were at least 250 members of the Wisconsin Ginseng Seal Program. However, because the GBW did not require members of the program to renew their membership, importers still continued to use the GBW seal on their ginseng roots and ginseng products after registering and paying the license fee for only one year. As a result, some importers imported cheaper ginseng from Canada and China and mislabeled the product with the GBW ginseng seal. Due to the lack of effective monitoring and management of their seal in the market from GBW, both the export price and value of Wisconsin ginseng decreased dramatically over the next ten years, and the number of members of the Wisconsin Ginseng Seal Program dwindled to around 50 by 2006 (HerbalGram 2007). To revitalize the industry and protect the image and reputation of Wisconsin-grown ginseng from false and misleading marketing practices, in December of 2006 the Ginseng and Herb Cooperative entered into an exclusive distribution agreement with Singapore-based Eu Yan Sang (EYS), a 120-year-old company that specializes in traditional Chinese medicine products. This contract granted EYS exclusive rights to carry the Wisconsin Ginseng Seal globally (Figure 7) and guaranteed that EYS would purchase a significant share of Wisconsin's ginseng crop each year (Eu Yan Sang 2006). As part of this arrangement, all the previous memberships of other companies are permanently expired (HerbalGram 2007).

Current Condition of the Wisconsin Ginseng Industry

The Wisconsin ginseng industry has endured several problems hampering its development in the past ten years. From 1996 to 2002, Wisconsin ginseng growing acreage plunged by more than 50% and from 1996 to 2006. The quantity sold shrank by about 90%. The number of ginseng growers also fell dramatically. In 1995 there were 1,468 ginseng growers in Wisconsin, but by 2006 there were only 190 (WASS 2006). There are a variety of reasons such as increased competition from Canada and China, lack of marketing efforts in Asia, and price depression due to counterfeit ginseng using the Wisconsin Ginseng Seal®.

In recent years, the Ginseng Board of Wisconsin has undertaken several activities to help the industry. These have included hiring a marketing firm to help develop a new marketing strategy for the industry and successfully obtaining USDA Foreign Agriculture Service Market Access Program (MAP) funds to aid with development of export markets. Part of this new strategy is the marketing agreement between the Wisconsin Ginseng and Herb Cooperative and Eu Yan Sang International Ltd. of Singapore mentioned above. Growers could sign a three-year marketing contract with the Co-op beginning with the 2007 harvest. The success of this marketing agreement remains to be seen, as it is still in its infancy.

This overview and these statistics describing the industry focus largely on the aggregate level performance (total production, typical prices, value of total exports) and on industry strategy. The industry is composed of individual growers, yet little data exists regarding these growers or their perspectives on the recent changes in the industry. To better understand the current status of the Wisconsin ginseng industry from the growers' perspective, the Ginseng Board of Wisconsin collaborated with the University of Wisconsin-Madison's Department of Agricultural and Applied Economics and Program on Agricultural and Technology Studies, and the University of Wisconsin-Extension to conduct a mail survey of Wisconsin ginseng growers. All four organizations contributed both financial and other resources for the completion of this survey, with efforts coordinated in the Department of Agricultural and Applied Economics. The purpose of the survey is to document grower characteristics, practices, and concerns at this time of change in the industry to potentially help the industry. The remainder of this Section summarizes the survey and grower responses.

Executive Summary

The final survey instrument was developed through several rounds of refinement. Preliminary and further refined versions of the survey were sent to the Ginseng Board of Wisconsin and to Program on Agricultural Technology Studies faculty associates. Changes were made following suggestions to correct errors, clarify questions, remove potentially inappropriate questions, and improve the overall quality of the survey, and then a more refined version sent back until a final version was developed. The University of Wisconsin-Madison Institutional Review Board (IRB)

also approved a preliminary version of the survey as part of its human subjects review. Appendix A provides a copy of the final survey as mailed.

The mail survey was conducted following Dillman's (2000) method. The survey process involved sending pre-survey letters and informing growers of the survey at a meeting, an initial survey mailing with a follow-up postcard a few weeks later for non-respondents, then a second survey mailing to non-respondents with another follow-up post card a few weeks later to the remaining non-respondents, and then finally, a third mailing of the survey to all remaining non-respondents. Initial mailings began in late December of 2007 with the last returned surveys received from growers in late April of 2008.

To maintain grower anonymity, a "double blind" process was used for the mailing list and data that would not allow linking individual names and addresses with individual survey responses. The Ginseng Board of Wisconsin maintained an address list of all members, each with a unique identification number, while the UW Department of Agricultural and Applied Economics (AAE) received the survey responses with these numbers, but not the names and addresses. AAE filled the envelopes and numbered the surveys and outside envelopes with matching identification numbers, then sent them as a package to the Board. The Board then affixed address labels corresponding to the identification number on each envelope and mailed the surveys to growers. Growers completed the survey and mailed them to AAE, where responses were coded to create an electronic file, with each set of responses known to AAE only by the survey identification number. Finally, data shared by UW with the Board are stripped of all identification numbers and responses that could allow linking to individual growers, plus some specific responses (e.g., acres) are converted to categories or ranges in order to maintain the "double blind" nature of the anonymity. The Board knows addresses and names, but cannot link them to specific responses, while AAE has the specific responses, but cannot link them to names and addresses.

The Board's mailing list contained 188 individuals and the first survey mailing was sent to all the potential ginseng growers. A total of 109 surveys (58%) were eventually returned from this list, including 10 surveys with the identification number removed and 2 blank surveys. Of the 107 surveys with responses, 7 reported conducting no ginseng cultivation in 2007. Thus the final data set consisted of 100 surveys with useable responses to most questions.

The survey asked a variety of questions concerning the general business characteristics of respondents, their marketing and management practices and labor issues, as well as their future plans. The next section contains a series of tables providing an extensive summary of the information collected through the mail survey. Each table summarizes responses to a specific survey questions identified in the table title. Readers should consult the copy of the survey in Appendix A for the specifics of each question asked and available response categories.

The “Typical” Wisconsin Ginseng Grower

Following are several general statements that describe the “typical” Wisconsin ginseng grower based on the responses to the mail survey and summarized in the indicated tables.

General Characteristics: (Tables 6-7 and 12)

- More than half (55%) of the growers grew ginseng on land they owned in 2007, and one third grew on land they rented.
- Most (81%) growers are older than 40 years old, with an average age of 51.
- Almost all (85%) of the growers’ families have been growing ginseng for more than 10 years, and some (8%) for more than 40 years, but the average is 24 years.
- Most (69%) growers have been growing ginseng for 10-30 years, and almost all (93%) have grown ginseng for at least 10 years.
- Sole proprietor is the most common business form (63%), then partnerships (16%).
- Most (79%) growers’ ginseng acreage is located in Marathon County.
- Most (77%) growers are white (non-Hispanic), then Hmong (21%).

Revenue & Cost Characteristics: (Tables 11 and 20)

- On average, growers reported that 37% of the family income comes from the ginseng business.
- One third of growers reported no other agricultural activities earning more than \$10,000 in gross revenue.
- Among all ginseng growers, grain production is the most common agricultural activity (9%), and ginseng is second (8%).
- Most (61%) growers cite inputs as the greatest agricultural cost and more than one third cite labor as the second greatest cost.

Management & Labor Characteristics: (Table 22-24)

- Almost all (93%) reported 2 or fewer owners/managers in 2007.
- On average, growers have 2 full-time employees in 2007.
- Most (72%) spent less than \$17,000 for temporary labor, but some producers’ temporary labor costs are quite large—4% reported spending more than \$100,000 for temporary labor.
- The average reported wage rate for temporary labor in 2007 was \$8.87/hour.
- The most common ethnic group of temporary hired labor was Hmong (42%); the second most common was white (non-Hispanic) (33%).
- Almost half (44%) reported never or rarely having problems finding temporary employees, but 6% report often or always having such problems.

Cultivation Practices: (Table 8-10, 17 and 21)

- Most (73%) had less than 9 acres of ginseng under cultivation in 2007; the median was 3 acres.
- Most (75%) harvested less than 3 acres of ginseng in 2007.
- The average reported ginseng harvested in 2007 was 4847 lbs, but some growers were quite large—6% reported harvesting more than 12,000 lbs in 2007.
- In 1987, one third (34%) did not grow ginseng, and 17% who grew ginseng in 1987 had much lower acreage under cultivation than compared to in 2007.
- In 1997, most (67%) had less than 8 acres of ginseng under cultivation; the median was 4 acres.
- Growers reported a typical yield for Wisconsin ginseng of 1,760 lbs/ac on average, with a median of 1,800 lbs/ac.
- Growers reported a typical yield for themselves of 1,590 lbs/ac on average, with a median of 1,700 lbs/ac.
- Half (49%) have tried different management practices to increase the size of their ginseng yield, but 13% never or rarely do.
- More than half (57%) have tried different management practices to increase the quality of ginseng roots, but 10% never or rarely do.

Marketing Practices: (Table 13-16, 18 and 19)

- Most (66%) had already sold all the ginseng they harvested in 2007.
- Most (71%) will not store any ginseng to sell in later years.
- Most (67%) sold their 2007 harvest to only one buyer, but 11% reported more than one buyer in 2007.
- Almost half (44%) of the buyers who bought the largest share of individual growers' 2007 harvest are from Wisconsin.
- The most common (43%) method of delivery is to ship the ginseng to a location in Wisconsin; the second common (26%) is for buyers to pick it up from the farm.
- Almost half (41%) responded "maybe" when asked if they would sign a marketing contract with Wisconsin GHC, while 37% had already signed such a contract or planned to soon.
- The average reported price received for ginseng harvested in 2007 was \$24.18 /lb, with 35% reporting receiving an average price higher than \$24.18/lb.
- Almost half (45%) think their price is about the same as the Wisconsin average for ginseng harvested in 2007.
- The reported profitable price for Wisconsin ginseng was on average \$29.74/lb.
- Almost half (44%) would grow ginseng for less than 4 years if the price remained below the profitable price level.

Grower Association Performance: (Table 25)

- Most (63%) rate the recent performance of the GBW as good, very good or excellent.
- Half (55%) rate the recent performance of the GHC as good, very good or excellent.

Future Plan: (Table 26 and 27)

- Half (48%) of the growers plan to continue their current operation or expand
- Half (51%) will not improve their ginseng equipment; one fifth don't know their plans.
- Almost half (46%) believe that prospects are good for the long-term profitability of the Wisconsin ginseng industry, while 40% think it is fair or poor.
- The most serious problems for the industry are price (35%), and diseases and pests (28%).

Tables Summarizing Survey Responses

The following several pages present the tables summarizing the survey responses and were used to develop the summary of the “typical” Wisconsin ginseng grower described in the previous section.

Table 6 Summary of Responses to Question 1: Property Right of Farm Land

Owned	Rented	Both owned & rented	Will not grow in 2008	Blank
Responses (%)	Responses (%)	Responses (%)	Responses (%)	Responses (%)
41 (41%)	33 (33%)	14 (14%)	1 (1%)	11 (11%)

Table 7 Summary of Responses to Questions 2-4: Length of Practice

Range	Current age Responses (%)	Length of practice of family Responses (%)	Length of practice of individual Responses (%)
Equal 0	0	1 (1%)	0
Exceeding 0	96 (96%)	98 (98%)	96 (96%)
Unusable	4 (4%)	1 (1%)	4 (4%)
Average of useable Responses Exceeding 0	51.0	23.7	21.5
Years		Years	Years
< 30	1 (1%)	<10	3 (3%)
31-40	14 (14%)	10-20	36 (36%)
41-50	26 (26%)	20-30	25 (25%)
51-60	36 (36%)	30-40	26 (26%)
Over 60	19 (19%)	Over 40	8 (8%)
Average	51.0	24.0	21.5
Minimum	25	3	3
Maximum	73	58	38
Median	52	24	20

Table 8 Summary of Responses to Questions 5-6: Cultivated Acreage in 2007

Range	Acreage cultivated Responses (%)	Acreage harvested Responses (%)
Equal 0	0	2 (2%)
Exceeding 0	97 (97%)	95 (95%)
Unusable	3 (3%)	3 (3%)
Average	8.77	3.11
Responses Exceeding 0		
Average	8.77	3.18
Minimum	0.25	0.25
Median	3	1.5

Table 9 Summary of Responses to Question 7: Harvested Weight in 2007

Range	Weight harvested Responses (%)	Range (weight)	Weight harvested Responses (%)
Equal 0	2 (2%)	< 200	5 (1%)
Exceeding 0	87 (87%)	200-499	7 (7%)
Unusable	11 (11%)	500-899	10 (10%)
Average	4846.96	900-1999	19 (19%)
Responses Exceeding 0		2,000-2999	19 (19%)
Average	4958.39	3,000-4999	9 (9%)
Minimum	0.016	5,000-11,999	12 (12%)
Median	2000	> 11,999	6 (6%)

Table 10 Summary of Responses to Questions 8-9: Cultivation History Before 2007

Range	Acreage cultivated in 1987 Responses (%)	Acreage cultivated in 1997 Responses (%)
Much lower	17 (17%)	Equal 0 1 (1%)
Lower	13 (13%)	Exceeding 0 87 (87%)
About the same	12 (12%)	Didn't grow 4 (4%)
Higher	8 (8%)	Unusable 8 (8%)
Much higher	13 (13%)	Average 7.89
I didn't grow ginseng in 1987	34 (34%)	
Unusable	3 (3%)	Responses Exceeding 0
		Average 7.98
		Minimum 0.5
		Median 4

Table 11 Summary of Responses to Questions 10-11: Share of Ginseng in Income

	Responses (%)	More than \$10,000 in gross revenue Responses (%)
Equal 0	8 (8%)	Unusable 43 (43%)
Exceeding 0	84 (84%)	Dairy 7 (7%)
Unusable	8 (8%)	Other livestock 6 (6%)
Average	37%	Grain 9 (9%)
		production
		Forage 3 (3%)
		production
Responses Exceeding 0		Other 42 (42%)
Average	41%	Other
Maximum	100%	Ginseng 8 (8%)
Minimum	1%	None 31 (31%)
Median	35%	

Table 12 Summary of Responses to Questions 12-14: General Characteristics

	Operation form		Location in Marathon County		Ethnicity
	Responses (%)		Responses (%)		Responses (%)
Unusable	9 (9%)	Unusable	1 (1%)	Unusable	1 (1%)
Sole proprietorship	63 (63%)	Yes, all of it	76 (76%)	White (non-Hispanic)	77 (77%)
Partnership	16 (16%)	Yes, but not all	3 (3%)	Hispanic	0
Limited liability partnership	2 (2%)	None	20 (20%)	Native American	0
Cooperative	1 (1%)			Hmong	21 (21%)
C Corporation	4 (4%)			Other Asian	2 (2%)
S Corporation	1 (1%)			African American	0
Limited liability company	6 (6%)			Other	1 (1%)

Table 13 Summary of Responses to Question 15-16: Sales of Harvest in 2007

	Already sold Responses (%)	Will sell Responses (%)
Equal 0	19 (19%)	71 (71%)
Exceeding 0	77 (77%)	19 (19%)
Unusable	4 (4%)	10 (10%)
Average	73%	18%
Response Exceeding 0		
Average	91%	86%
Minimum	3%	25%
Maximum	100%	100%
Median	100%	100%

Table 14 Summary of Response to Question 17: Number of Buyers

Range	Numbers Responses %	Range	Numbers Responses %
Equal 0	9 (9%)	<1	9(9%)
Exceeding 0	78 (78%)	=1	67 (67%)
Unusable	13 (13%)	2-5	8 (8%)
Average	1.2	>5	3 (3%)
Responses Exceeding 0			
Average			
Maximum	1.4		
Minimum	8		
Median	1		

Table 15 Summary Responses to Question 18-19: Characteristics of Buyers in 2007

	Oringin Responses %		Delivery Responses %
Wisconsin	44 (44%)	Unusable	16 (16%)
Other U.S. state	12 (12%)	Picked up from farm	26 (26%)
International	15 (15%)	Shipped to WI	43 (43%)
Don't know	13 (13%)	Shipped to U.S.	3 (3%)
Unusable	16 (16%)	Shipped to outside of U.S.	1 (1%)
		Other	11 (11%)

Table 16 Summary Responses to Question 20: Cooperation with GHC

YES	No, but soon	No, but maybe later	No and don't plan to	Unusable
Responses (%)	Responses (%)	Responses (%)	Responses (%)	Responses (%)
32 (32%)	5 (5%)	41 (41%)	20 (20%)	2 (2%)

Table 17 Summary Responses to Questions 21-22: Typical Production

	Typical yield (lbs/ac)	Individual typical yield (lbs/ac)
	Responses (%)	Responses (%)
Exceeding 0	83 (83%)	87 (87%)
Unusable	17 (17%)	13 (13%)
Responses Exceeding 0		
Average	1760	1587
Minimum	50	51
Median	1800	1700

Table 18 Summary Responses to Question 23-24: Price in 2007

	Individual average price (US\$/lbs)	WI average price
	Responses (%)	Responses (%)
Exceeding 0	72 (72%)	Above 15 (15%)
Unusable	28 (28%)	Same 45 (45%)
Responses Exceeding 0		Below 21 (21%)
Average	24.18	Unusable 19 (19%)
Maximum	120	
Minimum	9	
Median	24.25	

Table 19 Summary Responses to Questions 25-26: Standard of Profitability

	Profitable price (\$/lbs) Responses (%)	How long if below (years) Responses (%)
Useable	89 (89%)	74 (74%)
Unusable	11 (11%)	26 (26%)
Useable Responses		
Average	29.74	3.9
Minimum	13	0
Maximum	180	15
Median	27.5	3

Table 20 Summary Responses to Questions 27: Cost

	Greatest cost Responses (%)	2 nd Greatest Responses (%)
Land	8 (8%)	13 (13%)
Machinery & Equip	4 (4%)	16 (16%)
Inputs	61 (61%)	22 (22%)
Building & Facilities	5 (5%)	10 (10%)
Labor	22 (22%)	40 (40%)
Marketing & Manage	5 (5%)	6 (6%)
Other	1 (1%)	3 (3%)
Unusable	10 (10%)	12 (12%)

Table 21 Summary Responses to Questions 28-29: Improvement Activities

	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)	Unusable (%)
Increase yield	6 (6%)	7 (7%)	36 (36%)	28 (28%)	21 (21%)	2 (2%)
Increase quality	6 (6%)	4 (4%)	31 (31%)	32 (32%)	25 (25%)	2 (2%)

Table 22 Summary Responses to Questions 30-33: Management and Labor

	# owners /managers	#full-time employees	Total cost for temporary labor in 2007 (\$)	Average wage rate for temp labor (\$/hour)
	Responses (%)	Responses (%)	Responses (%)	Responses (%)
Equal 0	7 (7%)	57 (57%)	15 (15%)	8 (8%)
Exceeding 0	89 (89%)	37 (37%)	68 (68%)	75 (75%)
Unusable	4 (4%)	8(8%)	17 (17%)	17 (17%)
Average	1.3	1.9	13557	7.93
Responses Exceeding 0				
Average	1.4	4.7	16,547	8.78
Minimum	1	1	7	6
Median	1	1	3750	9

Table 23 Summary Responses to Question 34: Ethnicity of Labor

	Most common Responses (%)	2 nd common Responses (%)
White (non-Hispanic)	31 (31%)	32 (32%)
Hispanic	3 (3%)	5 (5%)
Hmong	42 (42%)	25 (25%)
Other Asian	0	2 (2%)
Native American	1 (1%)	2 (2%)
African American	0	0
Unusable	27 (27%)	34 (34%)

Table 24 Summary Responses to Question 35: Difficulty of Access to Temporary Labor

Never	Rarely	Sometimes	Often	Always	Not applicable	Unusable
27 (27%)	17 (17%)	29 (29%)	3 (3%)	3 (3%)	15 (15%)	6 (6%)

Table 25 Summary Responses to Questions 36-37: Performances of GBW and GHC

	Excellent	Very good	Good	Fair	Poor	No opinion	Unusable
GBW	12 (12%)	26 (26%)	25 (25%)	13 (13%)	8 (8%)	14 (14%)	2 (2%)
GHC	12 (12%)	22 (22%)	21 (21%)	14 (14%)	9 (9%)	18 (18%)	4 (4%)

Table 26 Summary Responses to Questions 39-41: Future Production of WI Ginseng

	Acreage planned		Update equipment		Profitability
Phase out and quit	19 (19%)	Yes, substantially	6 (6%)	Excellent	1 (1%)
Reduce but continue	9 (9%)	Yes, but not substantially	21 (21%)	Very good	13 (13%)
Continue current	41 (41%)	No	51 (51%)	Good	32 (32%)
Expand	7 (7%)	Don't know	21 (21%)	Fair	32 (32%)
Don't know	20 (20%)	Unusable	1 (1%)	Poor	8 (8%)
Other	1 (1%)			No opinion	8 (8%)
Unusable	3 (3%)			Unusable	6 (6%)

Table 27 Summary Responses to Question 42: Problems

	Most Serious Responses (%)	2 nd Most Serious Responses (%)
Price	35 (35%)	22 (22%)
Finding labor	1 (1%)	1 (1%)
Counterfeit	23 (23%)	14 (14%)
Exchange rate	2 (2%)	2 (2%)
Competition	13 (13%)	10(10%)
Production and quality	9 (9%)	26 (26%)
Diseases and pests	29 (29%)	28 (28%)
Other	0	3 (3%)
Unusable	8 (8%)	10 (10%)

Table 28 Summary Responses to Question 38: Suggestions for GBW & GHC

Comments	Responses (%)	Citation
Information	12%	“stop being secretive which cause negative rumors”; more monthly newsletters on price and chemical; better communication among growers, members and dealers;
Disease	3%	“never get help to solve ginseng disease problems”; “develop a chemical rotation for disease prevention”; “provide info on chemicals and other that protect the ginseng plant”
Coordination between GBW&GHC	3%	“act together”; “going in the same direction”
Payment from GHC	2%	“need to be paid when digging roots”; “shorten the time when you get your money”;
Quality	2%	focus on product/control; “better roots better price”
GBW membership	2%	“new blood for members of board”; “divers members”; “serious problems of conflict of interest of board members”;
Insurance and disaster program	2%	“fight the government to pay for the loss of roots due to calamities”; “should fight for the disaster program”;
Price	2%	complain about price not going up
GHC	5%	“improve management practices”; “didn’t work hard to realize GBW has planned”; worry about the contract with only one company in case the price goes down. Ask for multiple companies; “should weigh and label roots correctly”
Other comments	4%	expect to get protection from insured producers of other crops and show the value of growing ginseng; “better marketing”; “develop US market and value added products”; “should have completely different members for each organization”.
Positive	3%	“everything is ok”; “doing a good job”; partner with MI state and China law suit is excellent

Table 29 Summary Responses to Question VI: Comments

Comments	Responses (%)	Citation
Management of GHC	2%	hope GHC can get its act together with GBW; “GBW has to closely monitor GHC”;
Calamities and diseases	3%	Calamities, diseases and invasion of other crops threaten ginseng growing; need help from calamities; restrictions on chemicals cause disease problems;
Price	5%	GHC should be stronger to fight for a higher price against buyers; hope GBW could lower the cost and the raise the price; “if prices rise, large producers will over plant and drive the price back down”; inquire if it is profitable to sell through GHC; doubt the profitability of growing ginseng since the price and root quality are unpredictable and cost is growing.
Others	4%	“The Ginseng Board seems to have a very high per acre yield on dry pounds I have never been able to get to” ; “by doing everything myself is how I feel i can profit”; “Very serious mistake letting only one company use WI seal”; Coop unequal/unfair treatment
Positive Comments	2%	praise Mary Hausbeck from MI Univ. and GHC; GBW’s work such as U of MI research.

Conclusions and Suggestions

In this section, we discuss some of the problems that the Wisconsin ginseng industry is currently facing, based on the historical information and this survey, and then we identify likely causes for these problems and suggestions for improvement.

First, Figures 5 and 6 show that Wisconsin ginseng acreage, the number of growers and sales have decreased dramatically since 1997. The survey finds that over the last ten years, the average acreage under cultivation by each farmer increased from 7.79 to 8.77 acres while the median dropped from 4 to 3 acres, indicating that several large growers expanded but growers at average level contracted. The most important reason for the decrease is that cultivated ginseng prices have remained low and unstable since 1996 (Figure 2). For this reason together with other risks brought by disease and calamities, most growers reduced their share of ginseng cultivation to diversify their income sources and business activities to reduce risk. Another reason is that most growers are older than 40 years old, which means more and more growers will quit the ginseng business due to age every year. For example, three growers reported quitting for this reason in 2007.

Next, most Wisconsin growers cultivated ginseng on a very small scale. According to the survey, 76% of growers have less than 10 acres and 71% harvested less than 5,000 lbs of ginseng in 2007. In addition, over the last ten years, small-scale growers decreased their acreage, while large-scale growers expanded. In 1997, there were 21 growers with under 3 acres with a minimum acreage of 0.50 acres, while in 2007 this number increased to 42 growers with a minimum acreage of 0.25 acres. At the same time, in 1997 there was only one large grower with 100 acres above 50 acres, but in 2007 there were 3 growers having acreage above 50 acres with a maximum of 160 acres. The change in farming size indicates that small scale of operation halted the development of small ginseng growers, while large ginseng growers were encouraged to expand by large scale of operation. It also implies that most ginseng growers are part-time ginseng growers, which does not allow them to expand their ginseng cultivation quickly. On average, earnings from ginseng business only account for one third of family revenue.

The decrease of price is the main reason for industry falling and also the biggest concern for ginseng growers according to the survey. The price they received in 2007 was lower than the profitable price they believe by \$5/pound on average. This mainly resulted from competition with ginseng industries in Canada and China. Ginseng quality is also a factor for the low price since very few growers are willing to grow more than three years old roots any more due to high risk from weather and diseases. Another reason is that WI ginseng growers did not have a

strong bargain power against dealers to maintain the level of price given that the retail price in China and Chinatown hasn't fallen, and growers' financial situation does not allow them to reject the offer and wait until the next year. To maintain stabilization of ginseng prices, GHC set up an exclusive distribution agreement with the Eu Yan Sang company, who guarantees a big purchase from GHC at an agreed price. However, the exclusive agreement may also bring problems of supervision and so on which result from lack of competition. Furthermore, GBW and GHC should help to unite growers and get more support from credit market to strengthen their bargaining power. The two organizations should also promote the domestic ginseng market by developing value-added products and supporting research projects on possible uses of ginseng in treating diseases such as cancer and diabetes as reported. Some Asian countries except China and Hong Kong such as Japan may become the target of market expansion. Production control may be a consideration by the industry to support prices, as some comments revealed in the survey blamed large growers of causing price decreases.

The secondary biggest concerns are disease, calamities and the increasing cost of production. Excessive rain during past three to four years has hampered crop growth; the survey reports that chemicals are the No. 1 cost for most growers. Given the fact that more than half of growers had often tried different practice to improve cultivation, it means growers tend to keep their successful experiences secretive from other growers including the method to deal with disease and calamities, which lead to the overall cost of production still being high. GBW and GHC did not provide effective channels for communication and information. The restrictions on chemicals also deteriorated disease problems and GBW have to apply for permission every year even for the same chemicals. Therefore, GBW and GHC would better initiate more programs for studying chemicals for disease prevention such as the one with MI State University. They should also try to get support from government in a form of subsidies, disaster program or insurance program for the loss due to calamities as well as long-term registration for new chemicals.

Most complaints about GBW and GHC from growers target lack of communication and failure to provide information. For example, the survey indicated that most growers considered their typical yield lower than the state yield. Since some growers suggests secrecy activity among this industry, GBW and GHC should do much more work such as providing more frequent newsletters on price and disease control problems, setting up more regular meetings among growers, board members and dealers, and making a practical website including a forum of discussion for uploading and exchanging cultivation experiences, market information and so on.

This industry is badly in need of some stimulation right now as one fifth of surveyed growers could not make a decision as to whether they would continue in ginseng business or quit, and of the rest half will continue while half will quit. The next one to two years will be very critical

for the future of WI ginseng industry. Growers need some good signs to reinforce their confidence in the industry.

This hesitation is also reflected in growers' attitude to the industry. Almost half growers are indecisive to sign contracts with GHC and are waiting for a clearer understanding of what GHC's new movement will bring. Growers' weak confidence in GHC may result from growers' dissatisfaction with management in the past. First, growers complained that they could not get payment from GHC promptly; that the board membership is not well diversified; that GHC did not implement and develop the plan of GBW and the two organizations did not coordinate with each other very well; that there are conflicts of interests among board members; that roots were not weighted and labeled correctly; of the lack of better marketing activities; and finally, that GHC did not advertise itself enough to make all growers clear about the price it offered and the new contract.

Although WI ginseng industry is experiencing a gloom period now, there are chances to revive it. China, the biggest market for American ginseng, has seen a growing population with more and more affluent consumers. Besides, domestic ginseng market is expanded by value-added products such as capsules, teas, tonics, soup base, beer, boxes of candy, and even cranberry-flavored "ginseng chew". The most important is that, Wisconsin ginseng is unique from other ginseng and famous for a higher quality and a minimum amount of chemical residue though at a cost of low production. This uniqueness could bring a big value if it got wide recognition. GBW and GHC should play a role of leadership to explore those opportunities. In addition, now it is a good time to enter and expand this business because the price of ginseng seeds is only one tenth of that of ten years ago, which is a good chance for small growers to bring their business into a large-scale level. Before reaching a large scale, small growers would better unite together through GHC to strengthen their bargain power. Facing all the opportunities and challenges, GBW and GHC need to think of strategies dealing with different growers, such as which group they are going to focus on, small growers or large growers or both.

References

- Buettner, C., G.Y. Yeh, R.S. Phillips, M.A. Mittleman, and T.J. Kaptchuk. 2006. Systematic review of the effects of ginseng on cardiovascular risk factors. *The Annals of Pharmacotherapy* 40:83-95.
- Carlson, A.W. 1986. Ginseng: America's botanical drug connection to the orient. *Economic Botany*. 40(2): 233-249.
- Census of Agriculture 1992, 1997. U.S. Department of Agriculture, National Agricultural Statistics Service.
Online: http://agcensus.mannlib.cornell.edu/area_to_county.php
- Dillman, D. A. 2000. *Mail and Internet Surveys: The Tailored Design Method*, 2nd ed. New York: John Wiley Company.
- Duke, James A. 1989. Ginseng: A Concise Handbook. Michigan: Reference Publications, Inc.
- Ellis, J.M., and P. Reddy. 2002. Effects of *Panax ginseng* on quality of life. *The Annals of Pharmacotherapy* 36:375-379.
- Eu Yan Sang. 2006. Eu Yan Sang secures exclusive worldwide distributorship for prized Wisconsin grown American ginseng (press release). Singapore: Eu Yan Sang International LTD.
Online: <http://www.thenextview.com/ir/docs/7cf2116a8a232a4b48257242001346e7-1.pdf>
- Ginseng Board of Wisconsin. 2008.
Online: <http://www.ginsengboard.com/japanese/links.cfm>
- Harding, A.R. 1936. *Ginseng and Other Medicinal Plants*. Columbus, Ohio: A. R. Harding.
Scanned Version: <http://www.henriettesherbal.com/eclectic/harding/index.html>.
- Harrison, H.C., J.L. Parke, E.A. Oelke, A.R. Kaminski, B.D. Hudelson, L.J. Martin, K.A. Kelling, and L.K. Binning. 2000. Ginseng.. Purdue University: Alternative Field Crop Manual.
Online: <http://www.hort.purdue.edu/newcrop/AFCM/ginseng.html>
- Helm, S. 2004. *Panax ginseng* and cancer. *Alternative Medicine Review* 9(3): 259-274.
- HerbalGram. 2007. Wisconsin Ginseng Farmers Fight to Protect Product Reputation. *The Journal of the American Botanical Council*. 75:54-61

- Higby, G. 2002. A pioneer herbal drug: The early history of American ginseng. *Apothecary's Cabinet* 5:1-6.
- Johannsen, Kristin. 2006. *Ginseng dreams: the secret world of America's most valuable plant*. Lexington: University Press of Kentucky.
- Kim, Young-Sik. 2003. A brief History of the US-Korean Relations Prior to 1945. Online: <http://www.freerepublic.com/focus/f-news/943949/posts>.
- Nix, Steve. 2007. Finding American Ginseng in Eastern Forests. About.com: Forestry. Online: <http://forestry.about.com/b/2007/08/23/finding-american-ginseng-for-fun-and-profit.htm>
- Pinkerton, K. 1947. *Bright with Silver*. New York: William Sloane Associates.
- Robbins, C.S. 1998. *American ginseng: The root of North America's medicinal herb trade*. Washington DC: TRAFFIC North America.
- U.S. Department of Agriculture, Economic Research Service. 1997. Agricultural Resource and Environmental Indicators (AREI) Database and Mapping Tool. Online: <http://maps.ers.usda.gov/AgResources/>.
- U.S. Department of Agriculture, National Agricultural Statistics Service, the Census of Agriculture, 1992, 1997, 2002
- U.S. Department of Commerce-Foreign Trade Service. 2008. U.S. Trade Reports. Online: <http://www.fas.usda.gov/ustrade/USTExFAS.asp>
- Vuksan, V., and J.L. Sievenpiper. 2005. Herbal remedies in the management of diabetes: Lessons learned from the study of ginseng. *Nutrition, Metabolism and Cardiovascular Diseases* 15(3):149-160.
- Wisconsin Agricultural Statistics 2006, 2007. Wisconsin Agricultural Statistics Service. Online: http://www.nass.usda.gov/Statistics_by_State/Wisconsin/index.asp
- Wisconsin Department of Agriculture, Trade and Consumer Protection. 2008. Online: <http://datcp.state.wi.us/mktg/agriculture/crops/market-orders/ginsengbrd.jsp>
- Wisconsin Ginseng and Herb Cooperative. 2008. Online: <http://www.ginsengherbco-op.com>.
- Wisconsin Ginseng Growers Association (WGGA). 1910. Second annual report of the Wisconsin Ginseng Growers' Association.

Appendix A: Mail Survey

This appendix provides a copy of the actual survey mailed to Wisconsin ginseng growers.

Survey on Wisconsin's Ginseng Industry

Please return your completed survey in the enclosed envelop to:

Paul D. Mitchell, Agricultural and Applied Economics

University of Wisconsin-Madison

427 Lorch Street, Room 411 Taylor Hall

Madison, WI 53706

<http://www.aae.wisc.edu/mitchell>

If you have any questions, please call Dr. Mitchell at (608) 265-6514 or email to pdmitchell@wisc.edu

Purpose of This Survey

This survey is designed to gather general information about Wisconsin's ginseng industry to better understand its current status. Your personal information will not be used for business purposes, and researchers will not have access to your address or other personal information, only your anonymous responses to this written survey. Only answer those questions you feel comfortable answering and know that all of your responses will be treated confidentially. We anticipate that you will be able to complete the survey within 20 minutes. **Thanks for your time. Please answer each question as completely as possible.**

I. GENERAL INFORMATION

- In 2007, did you own or rent land that you use to grow ginseng?
 I grew ginseng in 2007 only on land I owned.
 I grew ginseng in 2007 only on land I rented.
 I grew ginseng in 2007 both on land I owned and on land I rented.
 I grew ginseng in 2007, but I will not grow ginseng in 2008. (Please continue the survey.)
 I did not grow ginseng in 2007. ➡ Please return the survey in the enclosed envelope.
- What is your current age: _____
- How many years has your family been growing ginseng? _____
- How many years have you been growing ginseng? _____
- How many acres of ginseng did you have under cultivation in 2007? _____
- How many acres of ginseng did you harvest in 2007? _____
- How many pounds of ginseng did you harvest in 2007? _____
- Compared to your acreage in 2007, your ginseng acreage under cultivation in 1987 was:
 Much lower Lower About the same
 Higher Much higher I didn't grow ginseng in 1987
- In 1997, how many acres of ginseng did you have under cultivation: _____
 I didn't grow ginseng in 1997

10. In most years, about what percentage of your family's income comes from ginseng cultivation and marketing, including processing ginseng for other growers? _____%
11. In 2007, did your family earn \$10,000 or more in gross revenue from any of the following agricultural activities (mark all that apply):
 Dairy Other livestock Grain production Forage production
 Other agriculture (please explain) _____
12. In what form did you operate your ginseng cultivation and marketing business in 2007?
 Sole Proprietorship Partnership Limited Liability Partnership Cooperative
 C Corporation S Corporation Limited Liability Company
13. Did you have ginseng acreage located in Marathon County, Wisconsin in 2007?
 Yes, all of it Yes, but not all of it No, none at all
14. What ethnicity below most closely describes the family member most closely associated with the ginseng cultivation and marketing business in 2007?
 White (non-Hispanic) Hispanic Native American
 Hmong Other Asian African American
 Other (please describe) _____

II. MARKETING AND MANAGEMENT PRACTICES

15. What percentage of the ginseng you harvested in 2007 have you already sold _____%
16. What percentage of your 2007 harvest will you store to sell in a later year _____%
17. To how many different buyers did you sell your 2007 harvest? _____
18. Where was the buyer from who bought the largest part of your 2007 harvest?
 Wisconsin Other U.S. state International Don't know
19. How did you deliver your ginseng to the buyer who bought the largest part of your 2007 harvest?
 The buyer picked it up from my farm I shipped it to a location in Wisconsin
 I shipped it to a location in the U.S. I shipped it to a location outside of the U.S.
 Other (please explain): _____
20. Have you signed a marketing contract with the Wisconsin Ginseng and Herb Cooperative?
 Yes No, but I plan to soon No, but I may in later years
 No and I don't plan to (please explain): _____
21. What do you consider to be a typical yield for Wisconsin ginseng? _____ pounds/acre
22. What is your typical ginseng yield? _____ pounds/acre

23. What was the average price you received for your ginseng harvested in 2007? \$ _____/pound

24. How do you think your price compares to the average Wisconsin price for ginseng harvested in 2007?
 above the average about the same as the Wisconsin average below the average

25. What do you think is a profitable price for Wisconsin ginseng? \$ _____/pound

26. How many years would you grow ginseng if the price remained below this level? _____

27. What are your TWO greatest costs for growing ginseng?

Greatest Cost 2nd Greatest

- | | | |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Land for growing ginseng |
| <input type="checkbox"/> | <input type="checkbox"/> | Machinery and Equipment (owning and operating) |
| <input type="checkbox"/> | <input type="checkbox"/> | Inputs (chemicals, rails, posts, covering, etc.) |
| <input type="checkbox"/> | <input type="checkbox"/> | Buildings and Facilities (owning and operating) |
| <input type="checkbox"/> | <input type="checkbox"/> | Labor for planting, cultivating, harvesting and processing ginseng |
| <input type="checkbox"/> | <input type="checkbox"/> | Marketing and management |
| <input type="checkbox"/> | <input type="checkbox"/> | Other, please specify _____ |

28. Over the last three years, how often have you tried different cultivation practices to increase the size of your ginseng yield? Never Rarely Sometimes Often Always

Comments (optional): _____

29. Over the last three years, how often have you tried different cultivation practices to improve the quality of your ginseng roots? Never Rarely Sometimes Often Always

Comments (optional): _____

III. MANAGEMENT AND LABOR ISSUES

30. How many owners/managers did your ginseng business have in 2007? _____

31. How many full-time employees did your ginseng business have in 2007? _____

32. How much did you spend in 2007 for temporary labor for your ginseng business? \$ _____

33. What was your average wage rate for temporary labor in 2007? \$ _____/hour

34. Which TWO ethnic groups was your temporary hired labor most commonly from in 2007?

Most Common 2nd Most Common

- | | | |
|--------------------------|--------------------------|----------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | White (non-Hispanic) |
| <input type="checkbox"/> | <input type="checkbox"/> | Hispanic |
| <input type="checkbox"/> | <input type="checkbox"/> | Hmong |
| <input type="checkbox"/> | <input type="checkbox"/> | Other Asian |
| <input type="checkbox"/> | <input type="checkbox"/> | Native American |
| <input type="checkbox"/> | <input type="checkbox"/> | African American |

35. How frequently in 2007 did you have problems finding temporary employees?
 Never Rarely Sometimes Often Always Not applicable

IV. GROWER ASSOCIATIONS

36. Rate the recent performance of the Ginseng Board of Wisconsin in improving the ginseng industry.
 Excellent Very Good Good Fair Poor No opinion
37. Rate the recent performance of the Wisconsin Ginseng and Herb Cooperative in marketing ginseng.
 Excellent Very Good Good Fair Poor No opinion
38. Do you have suggestions for improving the Ginseng Board of Wisconsin or the Wisconsin Ginseng and Herb Cooperative? _____

V. FUTURE OF WISCONSIN GINSENG

39. Given current prospects for ginseng prices and marketing, what are your plans for your ginseng acreage over the next 2-3 years?
 Phase out and quit growing ginseng Reduce acreage, but continue production
 Continue current acreage and production Expand acreage and production
 Don't know Other (please explain): _____
40. Do you plan to improve/update your ginseng equipment, buildings or facilities over the next 2-3 years?
 Yes, substantially Yes, but not substantially No Don't know
41. Rate the prospects for the long-term profitability of the Wisconsin ginseng industry.
 Excellent Very Good Good Fair Poor No opinion
42. Currently, what are the TWO most serious problems or limitations for the Wisconsin ginseng industry?

Most Serious	2 nd Most Serious	
<input type="checkbox"/>	<input type="checkbox"/>	Price variability
<input type="checkbox"/>	<input type="checkbox"/>	Finding dependable labor
<input type="checkbox"/>	<input type="checkbox"/>	Counterfeit ginseng labeled as Wisconsin ginseng
<input type="checkbox"/>	<input type="checkbox"/>	Exchange rate fluctuations
<input type="checkbox"/>	<input type="checkbox"/>	Competition from other states and countries
<input type="checkbox"/>	<input type="checkbox"/>	Production and quality
<input type="checkbox"/>	<input type="checkbox"/>	Diseases and pests
<input type="checkbox"/>	<input type="checkbox"/>	Other, please specify: _____

VI. COMMENTS: Please give any comments you have regarding this survey or on any aspect of ginseng.