

# A Study on the Current Status of Mountain-Grown Ginseng

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**Abstract** - For the current study, 2,000 questionnaire sheets were printed and distributed while at the same time postal questionnaires were also conducted. The questionnaire survey was conducted July 25 through September 25, 2008, whereby 206 copies of desirable responses were secured. Analysis of the survey made it possible to grasp the overall current status and prospects of the mountain-grown ginseng business, and the level of technology required for cultivating mountain-grown ginsengs. It was learned that, with no legal and institutional arrangements now in force, no precise facts and figures concerning the total area cultivated and the quantity produced are currently available, and that the products are being marketed under the table. Under such circumstances, it is high time for the mountain-grown ginseng cultivation business to contribute to the promotion of incomes of the farming households and the generation of national wealth by developing the business into a systematic industry. This study conducted a survey on the current status of mountain-grown ginseng producers and of their production, thereby contributing to the introduction of policies for mountain-grown ginsengs.

**Key words** - Wild ginseng, Semi-wild ginseng, Wood-grown ginseng, Mountain-grown ginseng, Field-grown ginseng

## Introduction

The Korean ginseng (*Panax ginseng* C. A. Meyer) is divided into ginsengs grown in the mountains and those grown in the field, depending on the location grown. As a rule, the beginning of the cultivation of ginsengs in the mountains dates back to the end of Koryo Dynasty in the Korean peninsula. With wild ginsengs going extinct due to the practice of their indiscriminate collection, wild ginsengs, which were exclusively found in the mountains in the early days, began to find their way into dry and paddy fields for cultivation, paving the way for their mass production. With the demand for mountain-grown ginsengs ever increasing on the tide of the recent well-being boom, field-grown ginsengs are finding their way back into the mountains, pushing the area of cultivation and production of mountain-grown ginsengs sharply upward. Statistics for 2009 show that the country-wide production of mountain-grown ginsengs totaled 43 tons, worth 15.2 billion won, that the number of ginseng cultivating households reached 2,136 and the area of ginseng cultivated 5,200 ha (Korea Forest Service, 2010). However, it was learned that, since no legal and institutional arrangements

are now in force, and many of the cultivators are not registered, no precise facts and figures concerning the area cultivated and the quantity produced are currently available, and that the products are also being marketed under the table (Han *et al.*, 2008). The Free Trade Agreement (FTA) yet to be concluded with the United States and China could put the mountain-grown ginseng cultivation business in Korea in jeopardy before it has been established as an industry. Therefore, it is high time for the mountain-grown ginseng cultivation to contribute to the promotion of incomes for the farming households and the generation of national wealth by turning the business into a systematic industry.

Regarding field-grown ginseng, many studies have been conducted surveys on the current status of producers and consumers' behaviors (Jeong *et al.*, 2003; Im *et al.*, 2003 and 2005). However, there is no research on the attitudes and behaviors of both producers and consumers concerning mountain-grown ginseng.

Therefore, this study proposes to conduct a survey on the current status of mountain-grown ginseng producers and of their production. The questionnaire posed questions about comparative advantages of cultivation of mountain-grown ginseng compared with other forest products, the seriousness

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of problems in the production, importance of mountain-grown ginseng cultivation technology, evaluation of mountain-grown ginseng cultivating technology, and damage factors to mountain-grown ginseng cultivation and so forth. Such findings are expected to help to map out policies to promote mountain-grown ginseng cultivation.

## Materials and Methods

### Materials

For the current study, a questionnaire survey was conducted for mountain-grown ginseng cultivators country wide. Questionnaires were designed in May, completed in June, and 2,000 sheets of questionnaires were distributed in July, 2008. Farming households totaling 2,000 including 1,600 farming households registered as mountain-grown ginseng producers country wide and 400 unregistered households were sampled for this study. The period of the questionnaire survey ran from July 25 through September 25, 2008. 206 questionnaires with workable responses were secured, among 232 questionnaires that were recovered. The facts and figures were coded, fed into the SPSS(Ver. 13) statistical program and analyzed.

### Methods

For the analysis, a general basic statistics analytic technique was employed in which analysis of frequency and averages and the preferential standards considered by the respondents to be important were given certain relative points. An analysis of frequency makes it possible to tell what kind of distributive characteristics facts from the raw data have on the frequency distribution. This paper provides the frequency and percentage (%) only, where by number of responses for each item is named frequency and the number responded was expressed as  $(fc/n)*100 = \text{percentage} (\%)$ . Statistic figures including the mode that expresses the tendency to be centralized, the median and the arithmetic mean are made available, and such statistic values as the range representing the measure of dispersion, average deviation, dispersion and standard deviation were also analyzed. For the analysis in the current study project, the frequency for the question item, the minimum and maximum values, averages, standard deviation

and order of priority were given certain relative points.

## Results and Discussion

### Demographic Analysis

A look at the age groups of the respondents indicates that those in the 50's numbered 89 or 43.2% of the total, followed by those in the 60's with 41 persons or 19.2%. When it comes to trades of the respondents, those in agriculture totaled 130 persons or 55.3%, followed by those in the forestry with 54 persons or 23% of the total respondents. A look at the annual incomes shows that 50 persons or 25.7% of the respondents earned 30 million won up to 40 million won, followed by the group who earned 10 million won up to 20 million won, thereby representing 24.3% of the total respondents. As regards the age group and the mountain-grown ginseng cultivation career, the age averaged 56 years with 34 years at the minimum and 76 years at the maximum. The career of cultivating mountain-grown ginsengs averaged eight years, ranging from 1 year to 40 years.

### General status of mountain-grown ginseng cultivation

95 persons out of the total respondents were full-time ginseng cultivators, and another 95 persons took up ginseng cultivation as a sideline, the two groups equally accounting for 46.1%, respectively, of the total respondents. Responses to the question about the ownership of mountain-grown ginseng cultivation fields indicated that those who owned their own fields totaled 115 persons or 55.8%, and those who leased cultivation fields numbered 49 persons or 23.8% and those who leased state-owned forests numbered 18 persons or 8.7% of the total respondents. The maximum area under mountain-grown ginseng cultivation per household was 350 ha, while an average area under cultivation stood at 15.2 ha. The total area now planted with mountain-grown ginsengs reached 70 ha at the maximum while the average area stood at 4.6 ha, which is expected to be ever expanded over time. 92 persons or 44.7% earned an yearly income of 10 million or less from the mountain-grown ginseng cultivation, mostly falling below a high-income level. However, those high-income earners who earned 50 million or over numbered 14 persons. As regards the way farming is managed, 170 persons or a

predominant 82.5% of the total respondents indicated they managed the farm on their own as a family. This is because the mountain-grown ginseng cultivating business is not managed on a large scale and the workforce put into the business is relatively small on the one hand, and partly because the business owners want it (the cultivation knowhow) kept unknown to outsiders other than their own family on the other. 14 farming households were known to be employing workers on a regular basis, while 12 households were employing workers part time. To the question asking if they had a shelter on the spot, 132 persons or 64.1% of the total respondents answered that they did. This is most likely because they want to keep an eye on the ginsengs on the spot. The survey also showed that those registered with the city or county office for ginseng cultivation totaled 145 persons or 70.4% of the total respondents. To the question asking if they are supported by local autonomous bodies or the government, 102 or 49.5% of the total respondents answered affirmatively, while 98 persons or 47.6% of the total respondents answered they are not supported in any form. Under such circumstances, it seems recommendable that the applicants for ginseng cultivation should register with the city or county office for cultivation and that only those who are registered should be authorized to cultivate mountain-grown ginsengs, thereby straightening out the situation in an orderly manner. As regards the harvesting of mountain-grown ginsengs after cultivation, 133 persons or 64.4% of the respondents answered that they had not harvested ginseng roots yet, showing that the mountain-grown ginseng cultivation business is in its embryo, with only

a brief history behind it.

**Prospects for the mountain-grown ginseng cultivation business**

To the question asking if they are satisfied with the income from the cultivation of ginsengs, 54 persons or 26.2% indicated that they are not very satisfied, 30 persons or 14.6% of the total respondents answered that they are mostly satisfied. However, those who did not answer the question numbered 91 persons or 44.2%, suggesting that most of the cultivators did not have a chance to generate satisfactory incomes out of ginseng cultivation, with only a few years' experience of cultivation. When asked if they experienced a failure in cultivating mountain-grown ginsengs, 102 persons or some 50 % of the total respondents, answered that they did. Those who did not respond or those who indicated that they did not stand at some 50%, suggesting that it is not long since mountain-grown ginsengs were brought into cultivation. To the question asking about the prospect of the mountain-grown ginseng cultivation business, 82 persons or 39.8% answered that they are optimistic about the prospect of the business. With respect to the question asking how they feel about their professionalism in cultivating mountain-grown ginsengs, those who answered that they are 'fairly proud' and 'extremely proud' combined totaled 147 or 71.4%, suggesting that most of the cultivators were proud of their professionalism in cultivating mountain-grown ginsengs. With regard to the question asking about the feasibility of mountain-grown ginseng cultivation generating national wealth, 146 persons

Table 1. Comparative advantages of cultivation of mountain-grown ginseng compared with other forest products.

(Unit: No. of respondents (%))

Category	Not true Altogether	Do Not Agree	Unable to indicate	Agree	Completely Agree	No Answer Indicated	Total
Outstanding average income	5 (2.4)	7 (3.4)	56 (27.2)	89 (43.2)	40 (19.4)	9 (4.4)	206 (100)
Pride as a nation	8 (3.9)	14 (6.8)	31 (15.0)	98 (47.6)	42 (20.4)	13 (6.3)	206 (100)
A chance to make a large sum of money	7 (3.4)	16 (7.8)	70 (34.0)	70 (34.0)	31 (15.0)	12 (5.8)	206 (100)
Numerous forms of governmental support available	50 (24.3)	54 (26.2)	44 (21.4)	40 (19.4)	2 (1.0)	16 (7.8)	206 (100)
Plenty of leisure available	15 (7.3)	38 (18.4)	21 (10.2)	98 (47.6)	19 (9.2)	15 (7.3)	206 (100)
Easy to cultivate	32 (15.5)	43 (20.9)	30 (14.6)	68 (33.0)	17 (8.3)	16 (7.8)	206 (100)

or 70.9% indicated that they “agree,” and “totally agree,” suggesting that it is highly possible to generate national wealth out of the mountain-grown ginseng cultivation. This suggests that the government should map out a policy to develop the mountain-grown ginseng business into a steady industry. Table 1 indicates that to the question asking if there is any comparative advantage in favor of the mountain-grown ginseng cultivation compared with the production of other forest products, the majority of the respondents answered affirmatively, while they indicated that they did not agree with the items: “The government is very supportive.” and “It is simple to cultivate.” This indicates that the mountain-grown ginseng cultivation is not easy, but a hard job to do. It is high time, therefore, for the government to map out a positively supportive policy for the business.

**Current status of mountain-grown ginseng cultivation and production**

Table 2, which shows the extent to which the problem of the mountain-grown ginseng cultivation is serious, indicates that about half of the respondents experienced “difficulty in securing and selecting cultivating areas” and the remainder did not, while they indicated that they are seriously faced with such problems as “ageing of the cultivators and manpower shortage” and “developing cultivation technology.” Also

indicated as serious are the problems of “financing,” “uplifting of productivity,” “increased non-environment-friendly cultivation,” “fraudulent indication of the place of origin,” “unidentified age of ginseng roots,” “fraudulent indication of seeds and seedlings,” and “the cultivator’s moral laxity.” Government policies to straighten out such issues are urgently in order. With regard to the method of selecting suitable cultivation areas 122 persons or a predominant 59.2% indicated that they “select the cultivation area in consideration of numerous cultivation environments,” followed by the group who indicated that they “select upon the recommendation of the authorities concerned or colleagues.” To the question about the way they deal with the situation where the cultivation area is declared inappropriate 72 persons or 35% of the total respondents indicated that they “give up cultivation,” followed by the group who indicated that they had no idea since they had no experience in examining the soil for suitability. This suggests that many cultivators still select cultivation grounds without examining the suitability of the soil, calling to mind the need for appropriate training of the cultivators in the days to come.

When it comes to the question of obtaining seeds, 120 persons or a predominant 44.6% indicated that they “buy them,” followed by the group of 83 persons or 30.9% who indicated that they “sow and grow the seeds” on their own,

Table 2. Level of the seriousness of problems in the production of mountain-grown ginseng. (Unit: No. of respondents (%))

Category	Very serious	Serious	Not very satisfied	Not serious	No problem at all	No answer indicated	Total
Difficult to obtain a cultivating site	34 (16.5)	49 (23.8)	35 (17.0)	53 (25.7)	27 (13.1)	8 (3.9)	206 (100)
Difficult to select a cultivating site	25 (12.1)	45 (21.8)	45 (21.8)	50 (24.3)	28 (13.6)	13 (6.3)	206 (100)
Ageing and manpower shortage	16 (7.8)	77 (37.4)	51 (24.8)	33 (16.0)	19 (9.2)	10 (4.9)	206 (100)
Development of cultivating technology	26 (12.6)	86 (41.7)	44 (21.4)	20 (9.7)	22 (10.7)	8 (3.9)	206 (100)
Financing	43 (20.9)	69 (33.5)	55 (26.7)	22 (10.7)	6 (2.9)	11 (5.3)	206 (100)
Uplifting Productivity	8 (3.9)	64 (31.1)	70 (34.0)	35 (17.0)	15 (7.3)	14 (6.8)	206 (100)
Increased non-environment-friendly cultivation	49 (23.8)	66 (32.0)	25 (12.1)	25 (12.1)	20 (9.7)	21 (10.2)	206 (100)
Fraudulent indication of place of origin	92 (44.7)	78 (37.9)	10 (4.9)	9 (4.4)	1 (0.5)	16 (7.8)	206 (100)
Age of ginseng roots unconfirmed	6 (27.2)	78 (37.9)	39 (18.9)	12 (5.8)	6 (2.9)	15 (7.3)	206 (100)
Fraudulent indication of seeds and seedlings	73 (35.4)	76 (36.9)	27 (13.1)	12 (5.8)	3 (1.5)	15 (7.3)	206 (100)
Cultivator’s moral laxity	33 (16.0)	91 (44.2)	41 (19.9)	12 (5.8)	7 (3.4)	22 (10.7)	206 (100)

while 66 persons or 24.5% indicated that they sometimes sow seeds and buy seeds other times. As regards the kind of seeds, 151 persons or 59.7% indicated that they buy mountain-grown ginseng seeds, followed by the group of 69 persons or 27.3% who indicated that they buy the seeds harvested from ordinary wet or dry fields. The group who buy the seeds of natural wild ginseng numbered 33 persons or 13.1%. No one indicated that he gets seeds of Chinese origin. However, an industry source states that seeds of Chinese origin are finding their way into Korea, making it urgent build system whereby to confirm this is the case. Furthermore, differentiation of the seeds of field-cultivated ginsengs in the wet and dry fields from mountain-grown ginseng remains an importation research project gino tackle in the days to come. With respect ways of obtaining ginseng seedlings 99 persons or 39.8% answered that they “grow them first hand”. Those who answered that they “buy and grow them” totaled 87 persons or 34.9%, making the group a predominant one, and those who “sometimes grow first hand and other times buy and grow them” numbered 63 persons or 25.3%. As regards the kind of seedlings 117 persons or 39.8% indicated that they buy mountain-grown ginseng seeds, followed by the group of 58 persons or 19.7% who indicated that they buy the seedlings grown on wet or dry fields. Those who buy seedlings of natural wild ginseng numbered 20 persons or 6.8%. No one was known to have used seedlings of Chinese origin. However, a source from the industry stated that lots of ginseng seedlings of Chinese origin are finding their way

into Korea. Therefore, the building of a system whereby to confirm this is the case is urgently in order. Furthermore, differentiation of ginsengs grown in wet or dry fields from natural and mountain-grown ginsengs remains an important research project to tackle in the days to come. With regard to the question asking if an agency is needed that will take charge of the supply of seeds and seedlings of mountain-grown ginseng, 169 persons or 82% answered that “such an agency is needed.” Therefore, it is absolutely necessary for the government to map out policies in support of the business by establishing a “ginseng seed bank” or a “ginseng seedling bank.” Scoring the highest among the answers to the question asking about the reason such banks are needed is the group of 137 persons who scored 56.5 points and indicated they need such banks “in order to uplift productivity by means of good quality,” followed by the group of 114 persons who scored 38.9 points, thus winning the second place. Table 3 shows the level of importance of technology in the mountain-grown ginseng cultivation, where the majority of the respondents indicated that most of the items are important. Seed screening technology and the technology of locating suitable cultivating sites ranked higher than any other item, suggesting that the governmental supportive policies for such items are in order.

Table 4, which showed the evaluation of the mountain-grown ginseng cultivation technology, indicated that most of the respondents answered that the technological level is just passable or somewhere around the middle, suggesting that it is necessary to study and develop the cultivating technology

Table 3. Level of importance of mountain-grown ginseng cultivation technology. (Unit: No. of respondents (%))

Category	Unimportant at all	Unimportant	Not very satisfied	Important	Very important	No answer indicated	Total
Seed selecting technology		6 (2.9)	13 (6.3)	98 (47.6)	83 (40.3)	6 (2.9)	206 (100)
Ginseng seedling production technology	2 (1.0)	7 (3.4)	9 (4.4)	85 (41.3)	90 (43.7)	13 (6.3)	206 (100)
Environment-friendly pest control technology	9 (4.4)	5 (2.4)	10 (4.9)	69 (33.5)	101 (49.0)	12 (5.8)	206 (100)
Soil management technology	2 (1.0)	9 (4.4)	17 (8.3)	92 (44.7)	76 (36.9)	10 (4.9)	206 (100)
Suitable cultivating site selecting technology	2 (1.0)	4 (1.9)	8 (3.9)	95 (46.1)	86 (41.7)	11 (5.3)	206 (100)
Moisture management technology	3 (1.5)	9 (4.4)	27 (13.1)	92 (44.7)	62 (30.1)	13 (6.3)	206 (100)
Inorganic cultivating technology	8 (3.9)	10 (4.9)	20 (9.7)	75 (36.4)	77 (37.4)	16 (7.8)	206 (100)
Post-harvest management technology	3 (1.5)	6 (2.9)	12 (5.8)	85 (41.3)	81 (39.3)	19 (9.2)	206 (100)

Table 4. Evaluation of mountain-grown ginseng cultivating technology.

(Unit: No. of respondents (%))

Category	Extremely inferior	Somewhat inferior	Not very satisfactory	Somewhat superior	Extremely superior	No answer indicated	Total
Seed selecting technology	30 (14.6)	22 (10.7)	107 (51.9)	26 (12.6)	8 (3.9)	13 (6.3)	206 (100)
Ginseng seedling production technology	18 (8.7)	20 (9.7)	119 (57.8)	25 (12.1)	7 (3.4)	17 (8.3)	206 (100)
Environment-friendly pest control technology	35 (17.0)	27 (13.1)	99 (48.1)	18 (8.7)	4 (1.9)	23 (11.2)	206 (100)
Soil management technology	26 (12.6)	34 (16.5)	96 (46.6)	26 (12.6)	3 (1.5)	21 (10.2)	206 (100)
Suitable cultivating site selecting technology	15 (7.3)	25 (12.1)	91 (44.2)	48 (23.3)	8 (3.9)	19 (9.2)	206 (100)
Moisture management technology	19 (9.2)	29 (14.1)	106 (51.5)	23 (11.2)	7 (3.4)	22 (10.7)	206 (100)
Inorganic cultivating technology	28 (13.6)	29 (14.1)	96 (46.6)	23 (11.2)	7 (3.4)	23 (11.2)	206 (100)
Post-harvest management technology	21 (10.2)	27 (13.1)	105 (51.0)	20 (9.7)	3 (1.5)	30 (14.6)	206 (100)

Table 5. Damage factors to mountain-grown ginseng cultivation.

(Unit: No. of respondents (%))

Category	Very seriously damaged	Seriously damaged	Not very seriously damaged	Not seriously damaged	Not damaged at all	No answer indicated	Total
Root rot	33 (16.0)	50 (24.3)	51 (24.8)	45 (21.8)	8 (3.9)	19 (9.2)	206 (100)
Blight (yellow-leaf, spotted leaf, etc.)	14 (6.8)	61 (29.6)	69 (33.5)	35 (17.0)	9 (4.4)	18 (8.7)	206 (100)
Damage by pests (snails, cut worms, etc.)	5 (2.4)	29 (14.1)	71 (34.5)	61 (29.6)	15 (7.3)	25 (12.1)	206 (100)
Physiological disorders (yellowing disorder, bark reddening, etc.)	7 (3.4)	52 (25.2)	75 (36.4)	37 (18.0)	9 (4.4)	26 (12.6)	206 (100)
Damages by animals (field rats, pheasants, etc.)	49 (23.8)	78 (37.9)	31 (15.0)	26 (12.6)	8 (3.9)	14 (6.8)	206 (100)
Thefts	43 (20.9)	52 (25.2)	40 (19.4)	32 (15.5)	23 (11.2)	16 (7.8)	206 (100)
Meteorological calamities (flooding, tempests, etc.)	6 (2.9)	34 (16.5)	72 (35.0)	59 (28.6)	19 (9.2)	16 (7.8)	206 (100)

steadily with continuous support from the government. As regards the evaluation of other mountain-grown ginseng cultivation technologies, the answer listed atop was “the development of suitable cultivation site selection technology” with a score of 73 points, followed by “environment-friendly

cultivation technology,” which in turn is followed by the soil management technology, study on blight and insects, and post-harvest management technology. With respect to the introduction of a mountain-grown ginseng cultivation and production tracing program, 154 persons or 74.8% answered

that “It is necessary to introduce such a system” and “It is highly necessary to introduce such a system,” suggesting that the government should push forward such a policy. To the question concerning the readiness for the introduction of production traceability program 93 persons or 45.2% answered that they are “ready” and “positively ready,” suggesting that they are recognizing the necessity to introduce the program. Table 5 that presents factors damaging to mountain-grown ginseng cultivation lists damages by wild animals (field mice, pheasants and so forth) and thefts atop.

This paper addressing the results of a survey on the current status of mountain-grown ginseng production by the mountain-grown ginseng cultivators makes it possible to grasp general status of mountain-grown ginseng cultivation, prospects of the mountain-grown ginseng business, the current status of mountain-grown ginseng production, and the importance of technology in the mountain-grown ginseng cultivation. It was also confirmed that the country’s mountain-grown ginseng cultivation business is in its embryo, with only a brief history behind it. However, with the significant contribution of the business to the income of farming households and the generation of national wealth the business is generating in view, a positively supportive policy for the mountain-grown ginseng cultivation business from the government is in order. At the same time, legal and institutional arrangements in support of the business are to be made, thereby developing the business into a sound industry, so that the business may significantly contribute to increases in overall incomes of farming households. The results of this study, which is a basic study on the feasibility of developing the mountain-grown ginseng cultivation business into a sound industry, are expected to serve as a source of significant facts and figures for use of policy makers for the mountain-grown ginseng cultivation business and others related with mountain-grown cultivation business.

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