

Strategic Functional Food Production Project in Hamyang-gun

Hwang, Sang Kyu.¹

1. General Status of Wild Ginseng

1.1 Characteristics of Wild Ginseng

The scientific name for wild ginseng is *Panax Ginseng* C.A. Meyer, which means a cure-for-all in Greek, and is a typical medicinal plant. Wild ginseng (Wild Ginseng) is cultivated in natural state after the seed or seedling of ginseng or wild ginseng, and is different from ginseng artificially cultivated at fields or paddies. Wild ginseng is cultivated at a different producing area from other cultivated ginseng at the farmland, so no fertilizer, agricultural chemicals are added but cultivated in all environment-friendly fashion, and thus it is well preferred by the consumers, and traded for a high price, being evaluated to have a very high added value as an income source for the farms.

The precise cultivated area is not being calculated due to the concern of thefts on the cultivator's side, but it is assumed that as of now in 2009, the annual profit of about 2,200 million KRW is being produced in about 1,80ha, and the cultivation region involves Jeongseon, Samcheok, Yeongyang and such in Gangwon-do, and it is also known to be active in some areas of Hamyang and Sancheong in Gyeongnam.

<Table II -1> Statistics Related to Cultivation of wild Ginseng

Classification	Cultivated Area (ha)	Cultivator (person)	Output (kg)	Income (1 million KRW)
Gyeonggi	30	1	50	250
Gangwon	318.3	336	17,386	4,258
Chungbuk	81.3	354	1,500	180
Chungnam	163	70	340	1,070
Jeonbuk	411	147	2,740	4,300
Jeonnam	46	44	-	-
Gyeongbuk	492	32	408	1,422
Gyeongnam	79	224	69	520
Jeju	-	-	-	-
Total	1,620.6	1,208	22,493	12,000

* Forest Product Statistics (as of end of 2005)

¹Prof., Dept. of Business Administration at International University of Korea,
E-mail hsklmh@hanmail.net, Internet: www.iukris.or.kr

1.2 Efficacy of wild Ginseng

There are more essential components which are the scent components, along with saponin, Ginsenoside, polysaccharides, organic substances and such so that the medical efficacy is excellent. The medicinal quality is mild and non-toxic, and contains a lot of saponin components with almost no hemolytic action.

The saponin in wild ginseng has a unique chemical structure distinct from that of the saponin found in other plants. The saponin component of wild ginseng is Dammarane-type Triterpenoid which is different from regular ginseng.

<Table II-2> Efficacy per Component according to DNA Structure Analysis of wild Ginseng

Classification	Characteristics
G-RO	Alcohol detoxification, anti-infective function, and anti-inflammatory action
G-Rb1	Central nerve suppression, fever alleviation / analgesic, liver function protection
G-Rb2	Anti-diabetes, anti-arteriosclerosis, liver cell proliferation
G-Rc	Analgesic action, protein and lipid synthesis promotion
G-Rd	Promotion action of hormone secretion of adrenal cortex
G-Rf	Brain nerve cell analgesic action, lipid peroxidation suppression
G-Rg1	Learning function improvements, brain cell promotion action, anti-fatigue action
G-Rg2	Platelet cohesion suppression, memory decline improvement action
G-Rg3	Anti-dementia, blood pressure strengthening, cancer cell spreading suppression, anti-cancer medicine tolerance suppression
G-Rh1	Liver protection, anti-tumor action, platelet cohesion suppression
G-Rh2	Cancer cell proliferation suppression, tumor proliferation suppression, skin immunity effect

1.3 Production Status Hamyang wild Ginseng

Examining the current cultivation status of wild ginseng, the number of cultivation farms as of 2010 was 450 and the cultivation area was 2,610,000 m², responsible for 15% of the area for the whole nation.

<Table II -3> Production Area per Year

Year	Production Area (㎡)	Output (kg)	Note
2004	1,050,000	-	
2005	1,320,000	-	
2006	1,810,000	32	
2007	2,050,000	189	
2008	2,320,000	275	
2009	2,510,000	315	
2010	2,610,000	435	

※ Source /Hamyang-gun Agricultural Technology Center, Hamyang wild Wild Ginseng Cultivation Status, 2010.

1.4 Issues of Domestic wild Ginseng Industry and Promotion Measures

□ Issues

- Difficulty in species preservation of wild ginseng and security of reliable seeds
- Inadequacy in development and education of standard cultivation technology
- Difficulty in precise production status
- No standard to determine years
- No quality certification institute for wild ginseng
- Little variety in processed products utilizing wild ginseng
- Lack of organization and research manpower
- Ginseng is defined in “Ginseng Industry Law” which details quality determination, cultivation, harvest, supply control and industrialization.
- Wild ginseng has no definition, quality management, or such legal ground, and also quality standard is not prepared so it lacks systematic management
- Accordingly, over-claimed advertisement and distribution of low-quality wild ginseng are messing up and increasing the distribution order.

□ Promotion Measures

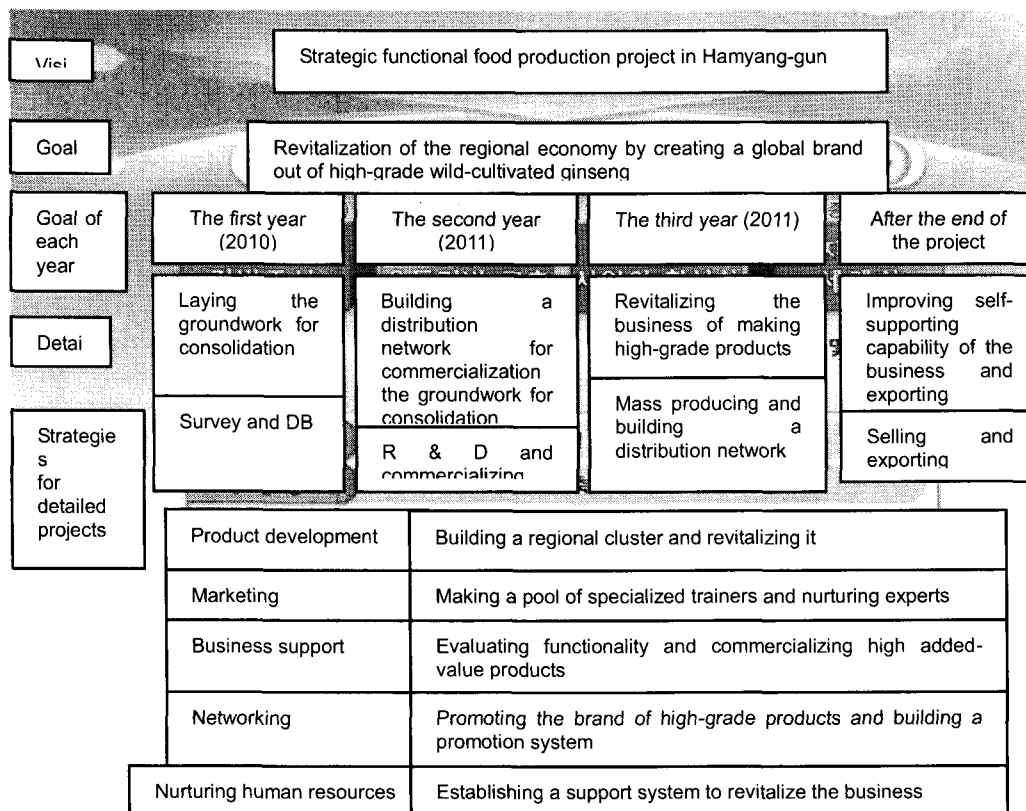
- Clarification of the definition of wild ginseng
- Construction of production basis for high-quality wild ginseng
- Operation of production declaration and production process confirmation system
- Introduction of quality inspection and quality display system for distribution of high-quality wild ginseng
- Quality management for imports
- Vitalization of processing industry and such to raise added value

2. Background and purpose of the project

2.1. Hamyang-gun in Gyeongsangnam-do, Korea has the optimal natural environment for wild-cultivated ginseng agriculture and is a well-known county throughout the nation. It is home to various medicinal plants and has a superior functional food industry. The geological features include veins of germanium. Hamyang is producing wild-cultivated ginseng which has good medicinal components, and has built consumer trust through its pesticide-free environmentally friendly cultivation and the extensive traceability system (primary industry).

2.2. However, the weak basis of the secondary and the tertiary industries has made it harder to develop, promote and market wild-cultivated ginseng products, providing challenges to creating a brand out of them.

2.3. Thus, this RIS project is aimed at turning the RIS of Hamyang into a driving force for growth by making a high-grade brand out of Hamyang wild-cultivated ginseng, to increase the income level of the region and to create jobs, thus helping revitalize the economy of the region.



3. Details of the project

3.1. Product development project

Evaluation of the functionality of wild-cultivated ginseng and commercialization of high added-value products

- Building a system for joint researches of industry-academia alliance and technology development
 - Verifying the superior activities of Hamyang wild-cultivated ginseng and establishing an promotion system
 - Establishing a system for evaluation of the functionality of Hamyang wild-cultivated ginseng
 - Completing the commercialization of high added-value products of Hamyang wild-cultivated ginseng
 - Making food-based medicine and developing fermented food and multi-purpose food
-

3.2. Promotion and marketing project

Promotion of an high-grade wild-cultivated ginseng brand and building a marketing system

- Building and running an Internet shopping system
 - Building a promotion and marketing system for sales promotion
 - Making and distributing various promotion materials
 - Drawing up a joint marketing strategy
-

3.3. Business support project

Establishing a support system to revitalize the wild-cultivated ginseng business

- Drawing up a strategy for Hamyang wild-cultivated ginseng sales promotion
 - Building and operating a business support system
 - Running an antenna shop and a shop-in-shop to increase sales
 - Participating in domestic and oversea exhibitions and running a market pioneer center
-

3.4. Human resources nurturing project

Building a pool of experts and nurturing experts to improve wild-cultivated ginseng-related capabilities

- Assessing the status of the existing training programs
 - Developing step-by-step training programs to improve capabilities
 - Running a training program for wild-cultivated ginseng business establishment
 - Running an internship program to create jobs
-

3.5. Networking project

Organizing a project management center, and establishing and revitalizing a regional cluster for the wild-cultivated ginseng industry

- Organizing and running the Hamyang functional food RIS project management center
 - Building a network of industry-academia alliance and exchanging information systematically
 - Building a business support network by building an Internet web site and holding meetings, forums and workshops
 - Supporting technology development projects by using the business support network and the information sharing network
-

4. Results

Project name	Key activities	Goal	Result	Key achievement
Organizing an RIS Project management center	<ul style="list-style-type: none"> - Organizing a RIS project management center - Academia (5 persons), government (5 persons), research institute (1 person) press (1 person), industry (3 persons) 	15 persons	15 persons	<ul style="list-style-type: none"> - Organization of a project management center - Establishment of operation rules
Academic forum and workshop	<ul style="list-style-type: none"> - Date: Nov 26, 2010 - Venue: Hamyang-gun Office - Attendees: Appx. 400 persons 	1 time	1 time	<ul style="list-style-type: none"> - Hamyang functional food (wild-cultivated ginseng) academic forum
Setting up a web server	<ul style="list-style-type: none"> - Place: RIS project management center office - Web site and shopping mall 	1 server	1 server	<ul style="list-style-type: none"> - Web site of the project management center with online shopping mall
Building a web site for the project management center	<ul style="list-style-type: none"> - Promotion of the project management center and providing access to information - Internet: www.iukris.org 	1 site	1 site	<ul style="list-style-type: none"> - Promotion of the project management center and information sharing
Holding a meeting of the steering committee	<ul style="list-style-type: none"> - Appointing a steering committee - The first steering committee 	2 times	1 time	<ul style="list-style-type: none"> - Oct 15, 2010 - Jan 19, 2011
Holding a meeting of the evaluation committee	<ul style="list-style-type: none"> - Evaluating the achievements of the project management center 	1 time	-	<ul style="list-style-type: none"> - Held in March
Entering into MOUs	<ul style="list-style-type: none"> - Providing and sharing information between project management centers - Sharing information between companies - Entering into an MOU for the mini cluster of Pusan-Ulsan-Gyeongnam 	1 MOU	3 MOUs	<ul style="list-style-type: none"> - Cheongyang Wellness Business
Publishing newsletters	<ul style="list-style-type: none"> - Publishing a newsletter of the project management center 	3 newsletters	-	<ul style="list-style-type: none"> - Publishing 3 newsletters

- Publishing online and offline newsletters

Project name	Key activities	Goal	Result	Key achievement
Creating a pool of experts in functional food	- Creating a pool of experts in functional food in Gyeongsangnam-do - Creating a nationwide pool of wild-cultivated ginseng experts	1 pool	1 pool	- Special lecture - Workshop and forum
Training on the marketing strategy for the promotion of functional food (wild-cultivated ginseng)	- Farming group related to Hamyang wild-cultivated ginseng - Training on the marketing strategy for the promotion	20 persons	25 persons	- Nurturing marketing experts - Customized training

Project name	Key activities	Goal	Result	Key achievement
Examining the functionality of the effective materials derived from wild-cultivated ginseng	- Inflammation control and immunity activation improvement 1 technology development and 1 SCI research paper	2 items	-	- Completed
Making and commercializing food based medicine using wild-cultivated ginseng	- 1 technology development, 1 commercialization and 1 patent application of food-based medicine for kidney	3 items	3 items	- Completed technology development, patent application and commercialization of Acti-gin
Development of multi-purpose food and commercialization using wild-cultivated ginseng	- Development of 2 technologies and 2 commercialized products such as functional gel	4 items	2 items	- Completed technology development of wild-cultivated ginseng gel and wild ginseng candy
Development and commercialization of wild-cultivated ginseng wine	- 1 technology development, 1 commercialization and 1 patent for high grade (high price) rice	3 items	1 item	- Completed technology development of wild ginseng rice wine

	wine			
Development and commercialization of high functionality wild-cultivated ginseng product	- 1 technology development and 1 commercialization of multi function big-pill products	2 items	1 item	- Completed technology development of wild-cultivated ginseng big-pill product

Project name	Key activities	Goal	Result	Key achievement
Making video clips for online sales promotion	- Making a promotion video clip of the project management center - Making a video clip for product promotion	-	1 item	- Made a promotion video clip - Made an improved and revised version
Building and running a Hamyang functional food shopping mall	- Building an online sales network - Creating a revenue source through the shopping mall	1 mall	1 mall	- Completed
Test-marketing of prototypes	- Pretest of prototypes	-	3 items	- Completed
IMC Model Development	- Consolidated promotion strategy - Setting the direction and goal of IMC	1 item	-	- Completed
Development of a story of Hamyang wild-cultivated ginseng for storytelling	- Making a story of Wild-cultivated ginseng for storytelling - Using it for festivals and promotion	1 story	1 story	- Completed
Marketing mix strategy for on and off-line sales promotion	- Building a sales network - Expanding the sales network for commercialization	-	-	- Completed

Project name	Key activities	Goal	Result	Key achievement
Development of product packaging designs	- Development of high functionality product packaging designs - Supporting the organizations that	Development of 2 species, 5 kinds and 4 species	Development of 2 species, 5 kinds and 4 species	- Completed development

	benefit form the designs			
Providing support for participating in overseas exhibitions	<ul style="list-style-type: none"> - Participating in international functional food exhibitions - Expanding export of high functionality products 	1 time	-	- Completed
Development of consolidated exhibition space and display	<ul style="list-style-type: none"> - Various exhibitions and display - Using exhibitions and showrooms 	2 species 10 kinds 4 species 15 kinds	2 species 10 kinds 4 species 15 kinds	- Completed development
Drawing up strategies for sales promotion of Hamyang wild-cultivated ginseng	<ul style="list-style-type: none"> - Making a roadmap for functional food sales promotion - Presenting methods for sales promotion 	2 species	-	- Completed
Building a business model	<ul style="list-style-type: none"> - Building a business model - Providing support for companies through commercialization 	1 time/ 2 items	1 time/item	- Completed development
Developing designs for a shop-in-shop and an antenna shop	<ul style="list-style-type: none"> - Expanding the sales network in metropolitan cities such as Seoul, Daejeon, etc. - Building a remote place sales network 	-	-	- Completed
Domestic exhibitions	<ul style="list-style-type: none"> - Participating in domestic exhibitions and promoting sales - Promotion and marketing of functional food 	2 times	2 times	- Completed

5. Conclusion

The Hamyang functional food RIS project management center contributes to the revitalization of the regional economy and job creation, by developing functional, high added-value food products out of wild-cultivated ginseng cultured in the pristine natural environment and through the convergence of the primary, secondary and tertiary industries.

□ References

1. Lee Dong-sup, Weather Characteristic and Growth of a Forest Ginseng Cultivation Site, *Journal of Korean Forest Society*, Vol.99, No.6 pp.863-870.
2. Ju-Yeon Hong, Pancreatic Lipase Inhibitors Isolated from the Leaves of Cultivated Mountain Ginseng(*Panax ginseng*), *The Korean Society of Food Preservation*, Vol.17 No. pp.727-732, October 2010.
3. Seo Se Myung, A Study on the Photosynthetic Rates of *Panax ginseng* in the Different Age and Provinces, *Journal of Korean Forest Society*, Vol.96, No.3 pp.357-361.
4. Myoung Sub Choi, Comparison of Morphological Characters and Stable Isotopes of Seeds between Wild Simulated Ginseng and Cultivated Field Ginseng, *Journal of Korean Forest Society*, Vol.97, No.4 pp.357-362.
5. Se-Myoung Seo, Eco-physiological Characteristics and Ingredient Differences of Forest Ginseng in Various Forest Environments, University of Seoul
6. Sang-Jeong Moon, The problem of mountain ginseng market and improvement plan, Graduate School of Industry/Entrepreneur Management, Chung-Ang University, Distribution Industry Major, 2009.2
7. Yu-Jin Hwang, Studies on the physiological activities of Korean cultivated wild ginseng, Sungkyunkwan University, General Graduate School, Food and Life Engineering Program, 2007.2
8. Jae-Yeon Park, Studies on activation and physiological activities of cultivated wild ginseng, Inje University Pharmaceutical Engineering Program, 2010. 2
9. Myung-Ha Yoo, Growth stimulation of *Panax ginseng* by phosphorus enrichment in mountain forest, Gangwon University Graduate School, Forestry Program, 2009.2
10. Yeong-Min Ahn, Anti-cancer and anti-oxidant efficacies of wild ginseng and cultivated wild ginseng of Korea and China, Sangji University Graduate School, Department of Oriental Medicine Acupuncture Major, 2007.2.
11. Jong-Seong Wi, Proteome Analysis of various types of *Panax ginseng* using 2-dimensional electrophoresis, Sangji University Graduate School, Department of Oriental Medicine Acupuncture Major, 2007.2