

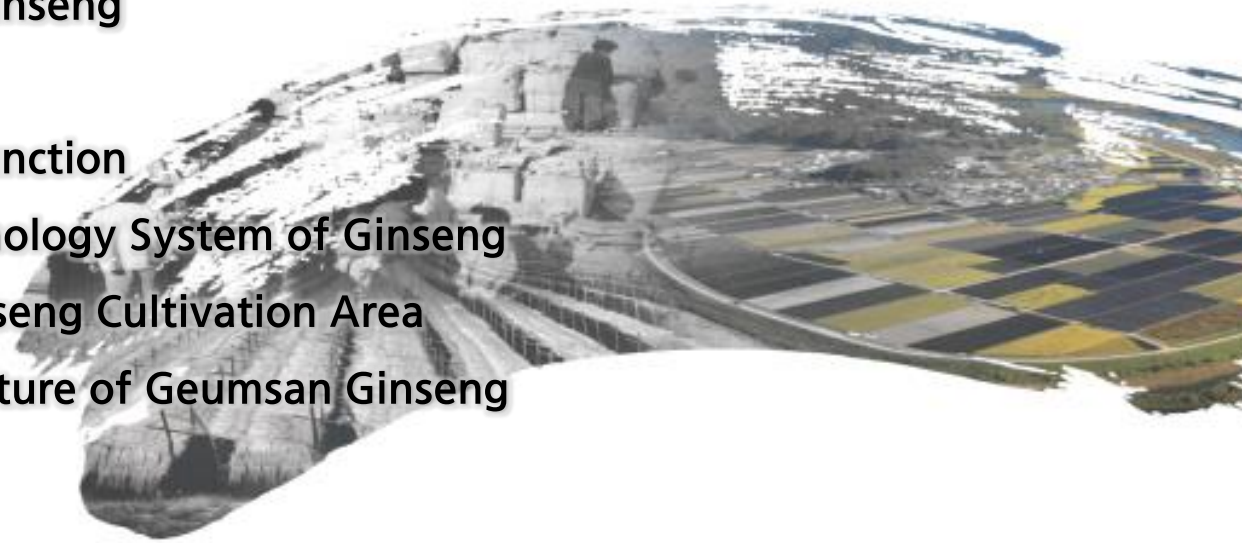
KIAHS Geumsan Ginseng Agricultural System

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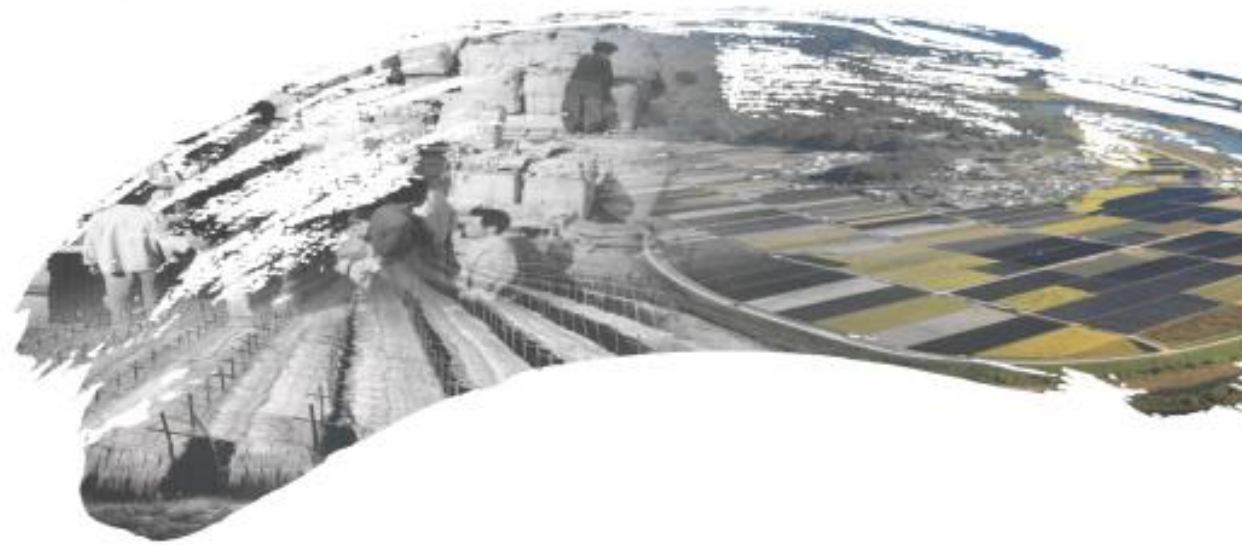


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1. Current Status: Geumsangun County/ KIAHS Geumsangun Ginseng Agricultural System



1) Geumsangun County

- ➡ Geumsan-gun is located in the southeast of Chungcheongnam-do.
- ➡ Geumsan-gun is famous for producing area of medicinal herbs, and its specialty is ginseng.
- ➡ There are the International Ginseng and Herb Research Institute and International Ginseng distribution center in Geumsan, and the Geumsan Insam (ginseng) Festival is held every year.
- ➡ The area of Geumsan-gun is 576.66km².
- ➡ This region has population of 55,355 for 24,738 households and 42.6% of its population live in Geumsan-eup at the end of the January, 2014.



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錦山人蔘特化
農工團地



國際人蔘市場



錦山人蔘塔



1 Jinsan-myeon



2 Geumsung-myeon



3 Namil-myun

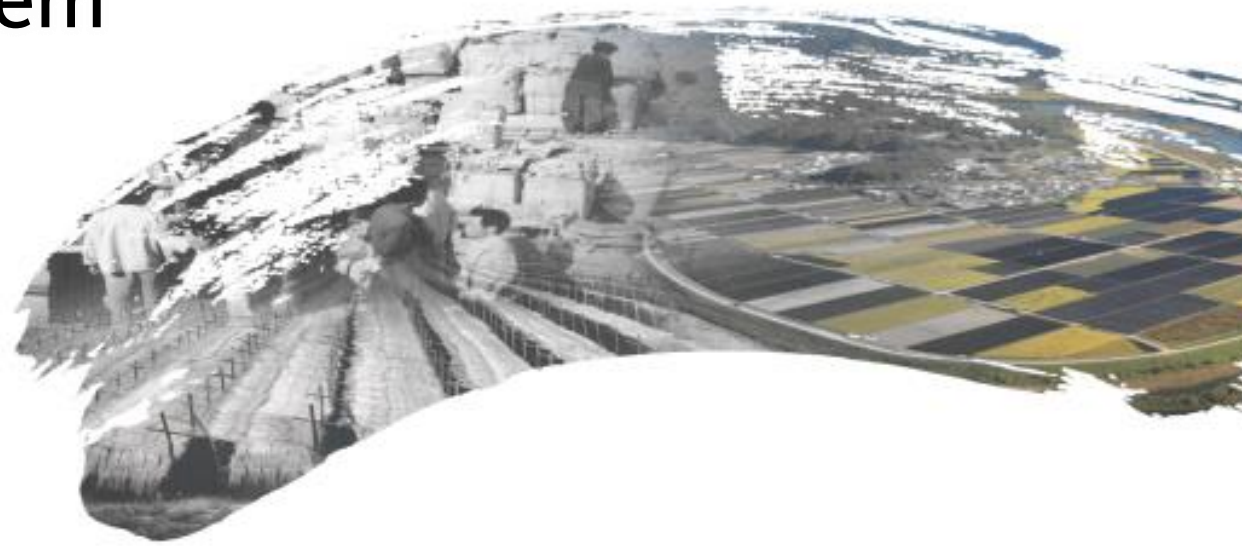


4 Jewon-myeon



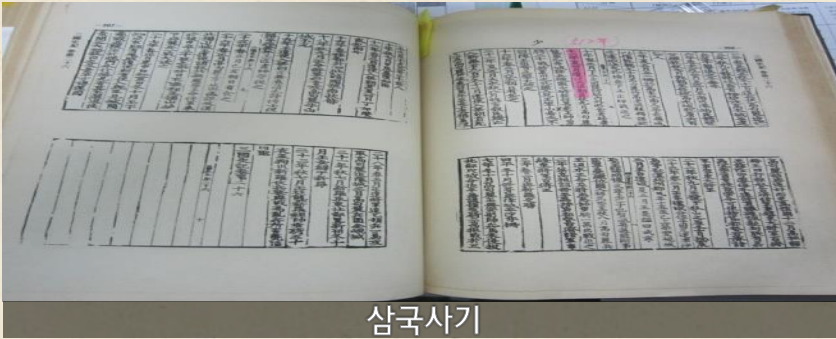
5 Buri-myoun

2. Geumsan Ginseng Agricultural Heritage System

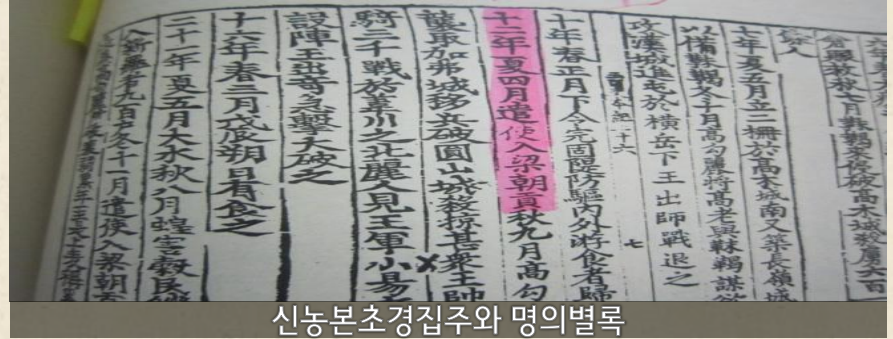


1) Historicity of Geumsan Ginseng

- Records of Geumsan Ginseng's 1500 years: Samguksagi(The Chronicles of the Three States), Sinbongbonchogyoungjipju(神農本草經集註), Myoungueibyounok(名醫別錄)



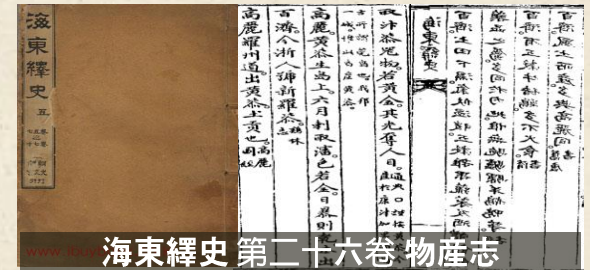
삼국사기



신농본초경집주와 명의별록

• Prior Goryeo Dynasty: Haedong History Book No 26

- 海東繹史 第二十六卷 物産志
- 人蔘 乃重百濟者 形細而堅白 氣味薄於上黨 次用高麗 高麗卽是遼東 形大而虛軟 不及百濟 百濟今臣屬高麗 高麗所獻 兼有兩種 止應擇取之 實用並不及上黨者



海東繹史 第二十六卷 物産志

• During Goryeo Dynasty: Seonhwabongsagoryeodogyoung

- 宣和奉使高麗圖經 卷第二十三 雜俗 2 土產
- 人參之幹 特生 在在有之 春州者 最良 亦有生熟二等 生者 色白而虛 入藥則味全 然而涉夏 則損蠹 不若經湯釜而熟者 可久留 舊傳形匾者 謂麗人以石壓去汁作煎 今詢之 非也 乃參之熟者 積燥而致爾 其作煎當自有法也 館中 日供食菜 亦謂之沙參 形大而脆美 非藥中所宜用 又其地 宜松而有茯苓 山深而產流黃 羅州道 出白附子 黃漆 皆土貢也
- 高麗史節要 卷之二十一 忠烈王[三] 乙未二十一年 元 成宗 元貞元年



宣和奉使高麗圖經

高麗史節要

2) Food/Food Security

(1) Position of Geumsan Ginseng in Korean Ginseng Industry

Type	Area	Farming household	Type	Area	Farming household
Icheon, Gyeonggi	660	801	Boeun Chungbuk	303	301
Yeoju Gyeonggi	635	730	Goisan Chungbuk	586	955
Yeoncheo Gyeonggi	455	1,001	Eumseong Chungbuk	552	614
Hoengseong Gangwon	415	752	Geumsan Chungnam	398	1,164
Yanggu Gangwon	430	327	Youngju Gyeongbuk	288	354
Chungju Chungbuk	315	542	Bonghwa Gyeongbuk	290	389

2) Food/Food Security

(2) Korean Biggest/Most Ginseng Farmers' Associations Obtained

Association	Established	Member(person)	Process Capacity of Fresh Ginseng(ton)
Ganghwa	1968	412	60
Eastern Gyeonggi	1958	809	100
Paju Gimpo	1967	571	270
Gangwon	1979	1,082	35
Chungbuk	1955	2,382	240
Baekje Geumsan	1956	3,658	320
Seosan	1970	933	130
Jeonbuk	1974	2,483	240
Punggi	1956	869	360

Source: MAFRA Statistics Data on Ginseng, 2014

(3) Center of Korean Ginseng Distribution 'Geumsan'

Type	Number of store	Daily sale volume(ton)	Daily gross sale amount (hundred million)	Annual volume(ton)	Annual gross sale volume (hundred million)
Int'l Ginseng Market	189	7.5	6.8	534	470
Fresh Ginseng Ctr	174	85	31	6,130	1,513
Yaknyeong Market	330	50~60	6	4,750	430

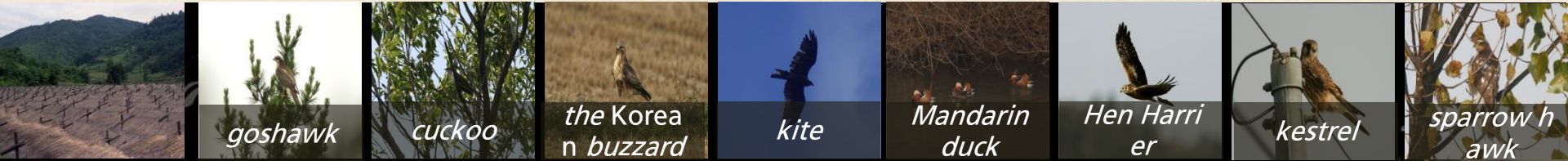
Source: <http://www.geumsan.go.kr>

3) Biodiversity/Ecological Function

• Mammal(Ginseng field)



• Birds(Ginseng field)



• Reptile/Amphibian(Ginseng field)



• Insects(Jewon-myeon Firefly)

• Fish(Near Ginseng field)



3) Biodiversity/Ecological Function

(1) Flora around Geumsan Ginseng Cultivation Area

Type		Result
Jeogok-ri	Forest	32family 46genus 46species 7variety 3kind 56classification
	Graveyard	24family 42genus 37species 10variety 1kind 48classification
	Ginseng field	18family 29genus 27species 3variety 1kind 31classification
	Planned-dry field	20family 38genus 35species 4variety 0kind 39classification
	Planned-paddy field	21family 36genus 34species 4variety 0kind 38classification
	Experiment group-dry field	16family 18genus 18species 0variety 1kind 19classification
	Stream	43family 68genus 61species 14variety 1kind 76classification
	Village	24family 54genus 54species 10variety 1kind 65classification

3) Biodiversity/Ecological Function

(2) Naturalized Plants around Ginseng Field

Type	Forest	Graveyard	Ginseng field	Future (rice paddy)	Future (dry field)	Future (meadow)	Experiment group (rice paddy)	Experiment group (dry field)	village	stream
Ave naturalization rate (%)	1.8	13.8	16.0	20.0	23.0	18.8	15.4	21.1	24.1	24.6

【Scientific significance】

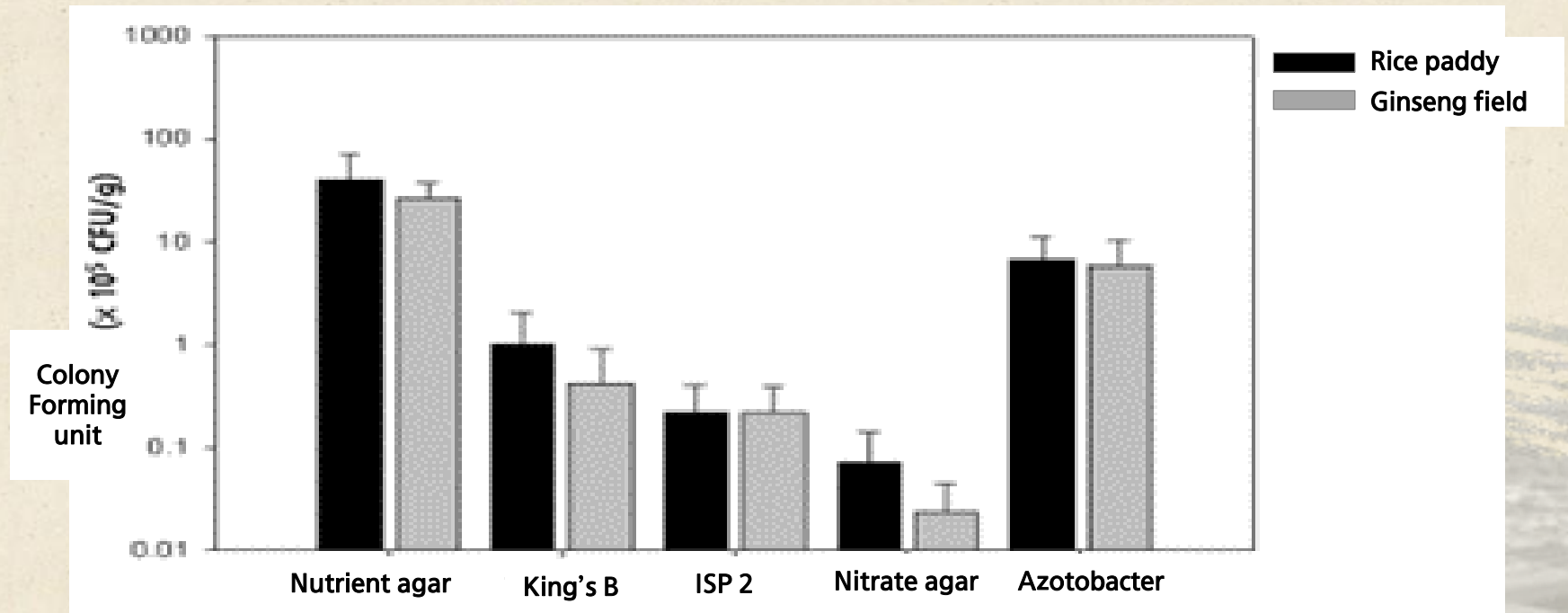
- Naturalized rate in Ginseng field holds similar rate to rice paddy in Experiment group area(15.4%) but lower than dry field area of Experiment group(21.1%), and it is fair to say the vegetation environment is relatively healthy.

* Naturalized Plant: the foreign plant being transferred via human movement from its origin to a different location

* Naturalization rate: rate of naturalized plants against the overall flora in a set space

3) Biodiversity/Ecological Function

(3) Density Analysis on Soil Bacteria around Geumsan Ginseng Field



【Scientific Significance】

- The statistic significance between density of soil bacteria in Ginseng field vs, rice paddy in other area show mere gap, indicting the healthy soil condition in Ginseng field.

4) Traditional Farming Technology System of Ginseng

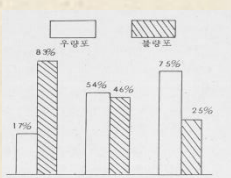
• Systematic management & cultivation of Ginseng system

① Area selection

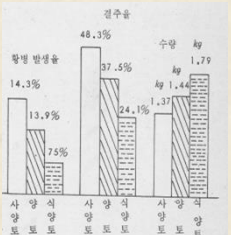
Climate/region



Topography



Soil component



Productivity

Crop

Soil management

② Set area managing

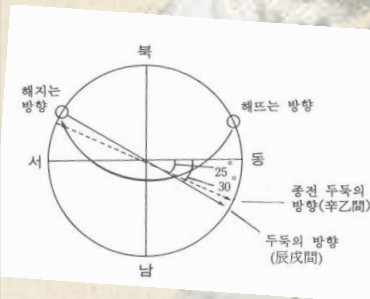
Plowing

Topography

Soil pest control

비종	기비		삼요소성분량		
	예정지	직파	질소 (N)	인산 (P2O5)	가리 (K2O)
청초	3,000-4,500kg	-	21-36kg	4.5-7kg	23-35kg
유박	90-150kg	-	4-7kg	2-4kg	5-9kg
골분	-	150kg	6kg	36kg	

Ridge building



Ridge/screen control

③ Ginseng seed pick & germination

Blossom/plant



Sprouting method



Seed/sprouting

④ Seedbed: seed plant

Seedbed placing

Planting

Sunscreen

Seedbed managing

Seed Ginseng pick



Plantation control

⑤ Permanent field

Implantation

Sunscreen

Sprouting

Ridge control

Winter control

Harvest



Cultivation·Harvest

4) Traditional Farming Technology System of Ginseng

(1) Selecting intended spot for Ginseng field

- ➔ Ginseng field spot selection is the most essential key factor for successful farming. The traditional knowledge suggests a spot with good drainage, north or northeast ward easy slop, no blocking mountain in north and with clear open space.



【 Scientific significance 】

- Cool climate area is ideal for the hardy crop Ginseng cultivation, avoiding hot summer. Geumsan holds best condition in latitude and topography. The highest daylight temperature in Geumsan is 30° for 40~50 days in a year.
- Open area facing north or northeast with blocking mountain in the west absorbs enough sunray in the morning and sun gets blocked in the afternoon, minimizing the hear damage.

4) Traditional Farming Technology System of Ginseng

(2) Plowing

- ➔ Over 15 times in a year with 15cm depth is plowed for the selected spot. More plowing brings better yield. Summer season plowing is done with green tobacco to control soil bacteria and insect eggs in the sunlight.



【Scientific significance】

- Sufficient plowing supplies enough oxygen in soil, bringing aggressive activities of organism and decomposition which gets absorbed by crop transforming the unavailable nutrients to available nutrients.
- Control of soil bacteria and insect in sunlight brings higher soil production with lower density insect, and frequent plowing also control weed.

4) Traditional Farming Technology System of Ginseng

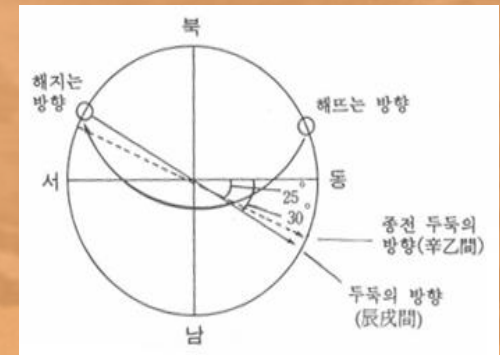
(3) Ridge building

- ➔ The valley section of Ginseng field ridge faces Shineul(辛乙) direction with metal establishment westward and fixation of the higher side toward north.



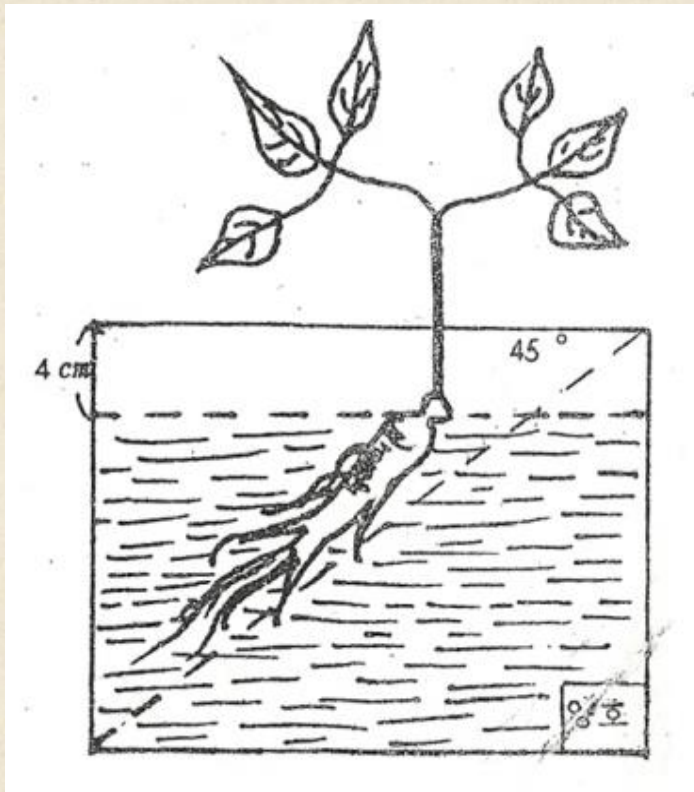
【 Scientific significance 】

- Shineul (辛乙) direction is 25~30° inclined from east toward south and allows suitable sunrays for half-shadow Ginseng plant.



4) Traditional Farming Technology System of Ginseng

(4) Traditional implantation method



資料: 錦山人蔘協同組合(1991) 人蔘耕作教材

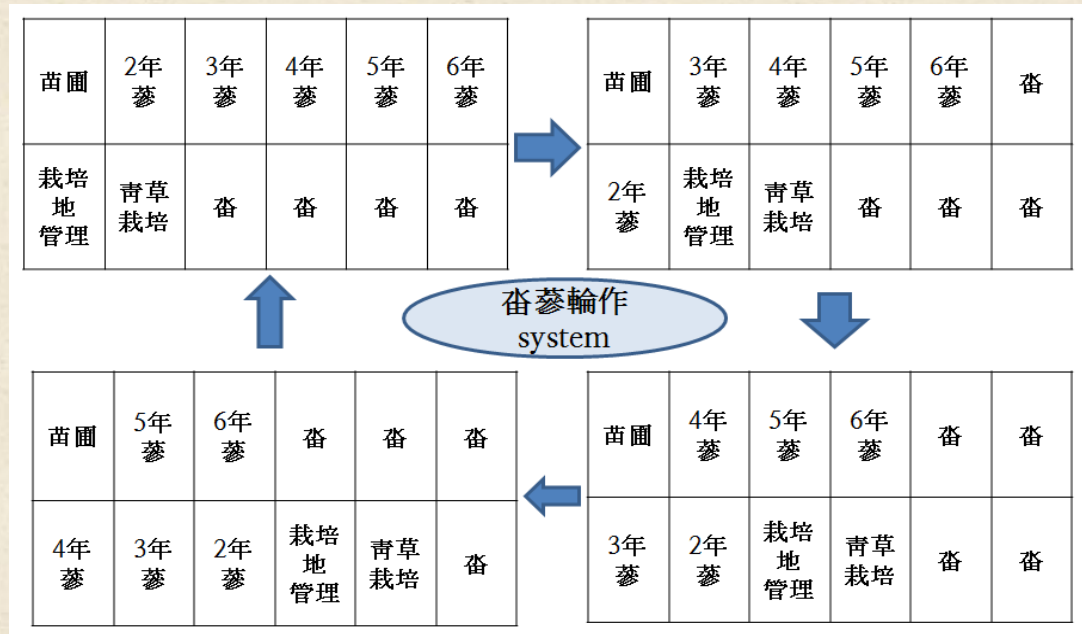
【 Scientific significance 】

- Ginseng is implanted in 4cm depth at 45 degree to reduce dry damage and salt concentration, while developing better rootlet, part and root size.

4) Traditional Farming Technology System of Ginseng

(5) Crop rotation for paddy Ginseng

- Field Ginseng is cultivated in paddy. For repeated cultivation is not suitable for Ginseng, and moving fields can be expensive, paddy Ginseng method has solved the matter.



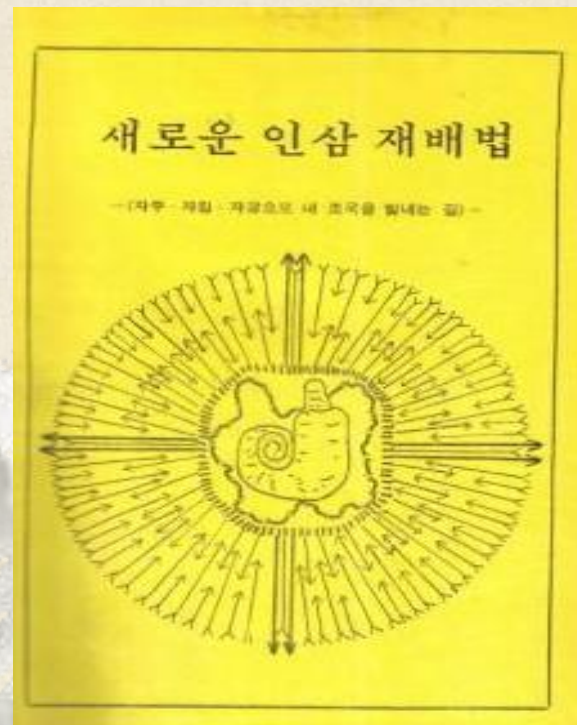
【Scientific significance】

- Paddy Ginseng's scientific value lies with its soil fertility. The active ingredients of soil can prevent exploitation and respond well with soil fertility improving crop. Further benefit includes lower soil sickness, lesser harmful insects, wiser effort allocation and stability increase of Ginseng operation.

4) Traditional Farming Technology System of Ginseng

(6) Records of Traditional Cultivation of Geumsan Ginseng

- ➡ Traditionally inherited cultivation experiences of Ginseng in Geumsan were recorded in 'Book of New Cultivation Method for Ginseng' in 1970.



5) Unique Landscape of Ginseng Cultivation Area

(1) Characteristics of Agricultural Landscape in Geumsan

- ➔ Rural villages in Geumsan farm various dry field crops in hills of mountain foot area and Ginseng paddy farms in between, forming its complex landscape. The majority ecotone area holds Ginseng fields like other Ginseng cultivation areas, and most paddy are occupied by Ginseng cultivation as Geumsan county's unique agricultural landscape.



5) Unique Landscape of Ginseng Cultivation Area

(2) Characteristics of Ginseng Field Landscape in Geumsan

- ➡ Villages usually settled in about 150m above sea level and surrounded by low height mountains of 250m sea level range.
- ➡ Majority fields are mix-cultivated with rice and paddy Ginseng. The characteristics of Geumsan county's hilly agriculture landscape includes various crops, including sweet potato, bean, corn, pepper, peanut, potato among the system.



6) Related Tradition and Culture of Geumsan Ginseng

KIAHS tangible culture & cultural resources



Gaesamgak



Gaesam Park



Geumsan Ginseng trading arcade



Geumsan Ginseng exhibition hall



Ginseng Medicinal plant Health Hall

KIAHS intangible culture



Ginseng wine(Chungnam Intangible Heritage)



Geumsan Jwado Nongak music



Geumsan Farmers' Music Preservation Association



Ginseng Nongak Music Contest

KIAHS association/organization



Geumsan Ginseng Cooperatives(1923)



Geumsan Int'l Ginseng Market Association



Geumsan Ginseng Yakyoung Market



Geumsan Ginseng Hotel Association



Geumsan Cultural Center

KIAHS food cultural resources



Ginseng Samgyetang Chicken Soup



Fresh Ginseng Fried Dish



Ginseng Fishcake



Ginseng Honey Preserved



Red Ginseng Candy

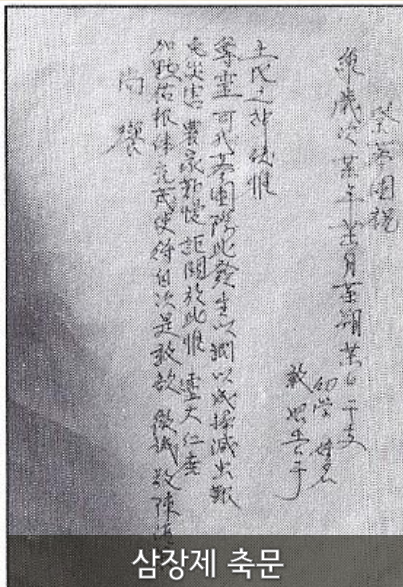


Red Ginseng Drinks

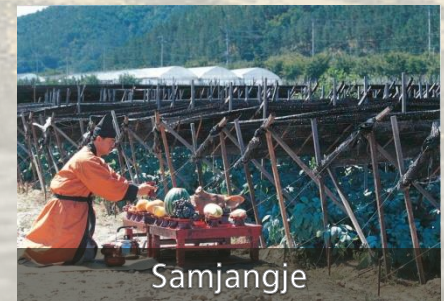
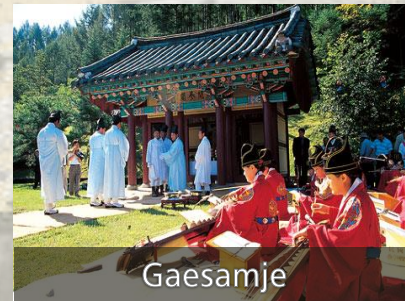
6) Related Tradition and Culture of Geumsan Ginseng

- ➡ Tradition exists in culture of Samjangje and obituary notification in formality
- ➡ Gaesamje ceremony: ceremony of appreciation and wishing for rich harvest at the first Ginseng planting field called Gaesamteo
- ➡ Samjangje: Service to Mountain god for rich harvest of Ginseng farming

Samjangje service and death notice



Ceremony of mount entering and ritual service



Thank you very much!

