

Brief Introduction of *Panax ginseng* C.A. Meyer

For many many thousand years, mankind has been using various plants as nutrient, beverage, cosmetics, dye and medicine to maintain health and to improve quality of life. In Aisa, particularly, *Panax ginseng* C.A. Meyer is considered to be the most precious plant among herbs, and ginseng has been in the spotlight worldwide. Even in the Western world, where there are greatly advanced research facilities and highly qualified man-power available, and are regarded to be capable of conquering any hard-to-cure ailments, many peoples has recently been reported to use herbal medicine, particularly ginseng. In the present compilation of papers, many scientists contributed papers pertaining to "Chemopreventive effects of ginseng". In order to facilitate the readers understand easier and better, I catalogued this collection as follows: The spiritual nature of ginseng in the Far East, the history of ginseng, nomenclature and geographical distribution of ginseng, and type of ginseng products.

Key Words : *Ginseng*; *Chemoprevention*; *Panax ginseng* C.A. Meyer

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THE SPIRITUAL NATURE OF GINSENG IN THE FAR EAST

Ginseng, a medicinal herb, has long been used in the Far East, particularly in Korea and China as a respected herbal medicine in maintaining physical vitality. The genus name *Panax* (Pan=all + axos=medicine) means 'cure all' in Greek. The herbal root is so named as ginseng, because it is shaped like a man (Fig. 1), and is believed to embody his three essences (i.e. body, mind and spirit) and is known as the lord or king of herbs (1). Ginseng had been used mainly as a tonic to invigorate weak bodies, but only rarely as a curative medicine, although, according to the *Bancao Gangmu* (Encyclopedia of Herbs) written by Li Shizhen in China, 1596 A.D. (2), it was included as an ingredient for curing 23 diseases. It is also included in 653 (16.6%) of the total 3,944 prescriptions in *Dongeuui Bogam* (Korean Clinical Pharmacopoeia), written by the Korean herbalist, Huh Joon, in 1610 A.D. (3) (Fig. 2).

THE HISTORY OF GINSENG

The origin of ginseng dates back to prehistory. In China, Shennong (Divine Peasant) also known as Emperor Yan, the Yellow Emperor, or one of the "Three Emperors" (the Emperor who is said to have started herbal medicine about 5,500 yr ago) is reported to have tasted hundreds of plants to discover many medicinal herbs (4). The original work was lost long ago, however, studies performed by Shennong were handed down verbally over many generations and were com-

plied into a commentary book "Shennong Bencao Jing (Shennong's Herbal)" by Tao Hongjing during the Liang Dynasty, 502-557 A.D. (5).

Three hundred and sixty-five kinds of herb are listed and they are divided into three classes according to the degree of toxicity. The superior ones are non-toxic and serve to reinforce vital energy, and can be taken regularly. Examples include *Radix Ginseng*. Ginseng was also mentioned in *Jijuzhang* (Interpretation of Creatures) written by Shi You of China, as



Fig. 1. Fresh *Panax ginseng* C.A Meyer shaped like a person.

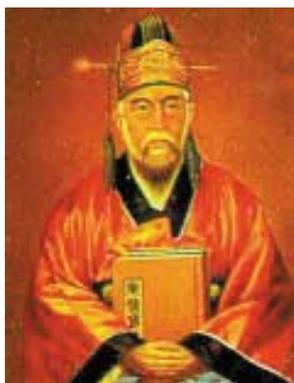


Fig. 2. Portrait of Huh Joon, an ancient Korean Herbalist.

Table 1. Species of Ginseng

1. <i>Panax ginseng</i> C. A. Meyer (Korean ginseng)
2. <i>Panax japonicus</i> C. A. Meyer (Japanese ginseng)
3. <i>Panax major</i> Ting
4. <i>Panax notoginseng</i> (Burkill) F. H. Chen (Sanchi ginseng)
5. <i>Panax omeiensis</i> J. Wen
6. <i>Panax pseudoginseng</i> Wallich
7. <i>Panax quinquefolius</i> L. (American ginseng)
8. <i>Panax sinensis</i> J. Wen
9. <i>Panax stipuleanatus</i> H. T. Tsai & K.M. Feng
10. <i>Panax trifolius</i> L. (Dwarf ginseng)
11. <i>Panax wangianus</i> Sun
12. <i>Panax zingiberensis</i> C.Y. Wu & K.M. Feng
13. <i>Panax vietnamensis</i> Ha et Grushv. (Vietnamese ginseng)

early as between 48 and 33 B.C. (6). Ginseng prescriptions are found in Shanghan Lun (Treatise on Fevers) between 196 and 200 A.D. (7). There are many mythical story. A legendary story relates that a young man whose mother was suffering from incurable disease found a miraculous remedy in the deep mountain in the dream: The mountain spirit presented a ginseng plant to him when he met fantastic old man in a ecstasy.

Among many forces influencing the present health care environment is a rapid increase of the use of complementary and alternative medical therapies. In the U.S.A., it has been reported that 40% of the public use alternative therapies (8), and herbal medicine is among the most prevalent complementary/alternative therapies (CATs). In 1998, total U.S.A. sales for herbal remedies approached dollars 4 billion, suggesting an annual growth rate of approximately 25% (9). This is also confirmed by a recent assessment of the U.S.A. herbal market. The annual sale of ginseng was \$98 million U.S. dollars with a growth rate of 26% (10).

NOMENCLATURE AND GEOGRAPHICAL DISTRIBUTION OF GINSENG

The ginseng plant is a deciduous perennial belonging to the Family Araliaceae. Thirteen species of ginseng include:

Panax ginseng C.A. Meyer (in 1833, once known as *Panax schinseng* Nees after a German botanist, Nees van Esenbeck and later renamed by the Russian scientist Carl Anton Meyer in 1843), which is cultivated in Korea, Japan, China, Russia and Germany; *Panax quinquefolius* L. (American ginseng; once known as *Aralia canadensis*), found in Southern Canada and the United States of America, from Maine to Minnesota, south to Florida, and west to Oklahoma; *Panax japonicus* C.A. Meyer (Japanese ginseng), grown in Japan; *Panax notoginseng* (Burk.) F.H. Chen (Sanchi ginseng) grows in China's Yunnan province; *Panax trifolius* L. (Dwarf ginseng), found from Nova Scotia to Wisconsin and further south; *Panax major* Ting; *Panax omeiensis* J. Wen; *Panax pseudoginseng* Wallich, grown in Nepal and the eastern Himalayas; *Panax sinensis* J. Wen; *Panax stipuleanatus* H.T. Tsai & K.M. Feng; *Panax wangianus* Sun; *Panax zingiberensis* C.Y. Wu & K.M. Feng (11) and *Panax vietnamensis* Ha et Grushv (12) (Table 1). Siberian ginseng does not belong to the genus *Panax*, but to the genus *Eleutherococcus senticosus* (maxim.) containing no ginsenosides (13, 14). Asian ginseng is not a generic name. When one uses the name Asian ginseng, it includes all ginsengs originated from Asian countries, i.e., *Panax ginseng* C.A. Meyer, *Panax japonicus*, *Panax notoginseng* (Sanchi ginseng) and *Panax sinensis* J. Wien.

Cultivation of *Panax ginseng* C.A. Meyer in Korea started around 11 B.C. by transplantation of wild ginseng. In 1122 A.D., during the era of King In Jong of the Koryo Dynasty, ginseng cultivation was also attempted through the propagation of transplanted ginseng from seeds (15).

Panax quinquefolius (American ginseng): in 1709 the French Jesuit missionary Father Jartoux recognized ginseng roots in China and wrote a letter to Father Lafitau in St Louise, Canada (near Montreal) accurately describing its appearance. Father Lafitau read the letter in 1714, and one day he stumbled across ginseng growing at the site of a new house (16). The quantity of wild ginseng was not sufficient to meet the demand, so experiments on cultivation were undertaken in 1878 at the Botanical Gardens in Jamaica without success. American ginseng cultivation, however, was achieved in Fabius, New York by George Stanton, a retired tinsmith turned to farmer. His story appeared in a New York newspaper in 1897, stressing the importance of shade for the successful cultivation of ginseng, a technique practiced in Korea for centuries (17).

Germany is one of the countries which has imported Korean ginseng for a long time. In 1982, Heinrich Wischmann who had been farming since 1960 in an old farm inaugurated in 1438 at Winsrode, happened to read an article on Korean ginseng in the newspaper "Die Welt", and in 1983 he acquired the seed of *Panax ginseng* C.A. Meyer from Hong Kong through a Chinese. At the beginning, he planted the seed only in an area of 50 square meters and harvested the first crop in 1992 & nice then, he established a distribution company called "FloraFarm".

TYPES OF GINSENG PRODUCTS

The conventional sun-drying of ginseng was switched to the steaming method to meet the great demand for ginseng which was stimulated by active trade with China during the reign of King Ae, the 14th King of Balhae. Xu-Jing of the Sung Dynasty, an attendant to a special envoy of the Chinese Emperor to Korea, wrote in "Kaoli T'suching" of the impression of his visit to the (Korean) Kingdom of Koryo in 1123, during the reign of King In Jong. He described in his book that there were two kinds of ginseng products in Koryo, sun-dried and steamed ginseng; red ginseng (18).

Panax ginseng C.A. Meyer cultivated in Korea (Korean ginseng) is harvested after 4 to 6 yr of cultivation, and it is classified into three types depending on how it is processed: (a) fresh ginseng (less than 4 yr old; can be consumed in its fresh state); (b) white ginseng (4-6 yr old; dried after peeling); and (c) red ginseng (harvested when 6 yr old, and then steamed and dried). Each type of ginseng is further subcategorized as ginseng products; fresh sliced, juice, extract (tincture or boiled extract), powder, tea, tablet, capsule, etc. Two years old fresh ginseng is also used as an ingredient in the Korean chicken-ginseng soup known as "Samketang".

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