

On Cultivation of Medicinal Plant Resources Grown in Frigid Zones

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[Abstract]

Recent Trends on Herbal Medicines in Japan

The proportion of elderly people in Japan rapidly increased. Recently herbal medicines are used not only as a curative medicine but also as a preventive medicine for several diseases such as Alzheimer's disease, diabetes, stroke, cancer and osteoporosis and so on.

Ca 100 kinds of herbal medicines are mainly used in Kampo (Japanese traditional medicines). Before 1960s, almost all of those herbal medicines were produced in Japan and then its supply was first depended on Korea in 1960s and 1970s. Now Japan depends on foreign countries especially China for its supply and the self-support ratio of herbal medicines in Japan is presently below 10 %. Total area of farm land for cultivation of medicinal plants in Japan peaked in 1988 (3,916 ha), then gradually decreased 2,580 ha in 1996, 1,234 ha in 2000 and 1,188 ha in 2005.

Marvelous Change of Chinese Economy and Supply of Herbal Medicines Collected in China

As the Chinese economy has achieved explosive growth in the last two decades (present GDP of China: fourth place in the world), the population of farmers and the farm land area in China decreased because farmers moved from local areas to urban ones, and consequently primary industry has been gradually declining. In addition to this, as the supply of many kinds of herbal medicines depends on wild plants, preserving wild medicinal plant resources from impending depletion is necessary. In fact, Chinese government prohibited the wild plants of Ephedra Herb and Glycyrrhiza from collecting in 1999 and 2000, respectively, for protection those wild plant resources and their natural habitats from extinction and desertification. In near future, the amount of supply of herbal medicines, which are now collected from the wild plants in China, such as *Atractylodes lancea* Rhizome, *Atractylodes* Rhizome, Rhubarb, *Pueraria* Root, *Cimicifuga* Rhizome, *Lithospermum* Root, *Scutellaria* Root and *Pinellia* Tuber etc. could be limited because of protection of wild plant resources.

Cultivation Studies for Sustainable Supply of Herbal Medicines

As a countermeasure to this situation mentioned above, the following plans are being performed.

1) Establishment of large scale cultivation technique systems using agricultural machines to produce herbal medicines at a low cost in Japan. 2) Preservation, propagation and availability of correct plants as the origin of herbal medicines, and breeding of new varieties and their extension. 3) Studies of conditions of cultivation and post-harvest preparation with respect to the quality of herbal medicines.

Recent situation of cultivation studies of such medicinal plants grown in frigid zones are introduced in the lecture, as *Glycyrrhiza* (*Glycyrrhiza uralensis* Fisher), Rhubarb (*Rheum palmatum* L.), Astragalus Root (*Astragalus mongholicus* Bunge), Saussurea Root (*Saussurea lappa* Clark), *Lithospermum* Root (*Lithospermum erythrorhizon* Siebold et Zucc.), *Cnidium* Rhizome (*Cnidium officinale* Makino), *Asiasarum* Root (*Asiasarum heterotropoides* var. *mandshuricum* F. Maekawa), Gentian (*Gentiana lutea* L.), Coix Seed (Job's tears, *Coix lacryma-jobi* L. var. *ma-yuen* Stpf), Paeony Root (*Paeonia lactiflora* Pallas) and so on.