Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 03, Issue: 04 (JULY-AUGUST, 2023)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

Pseudo-Ginseng: The Powerhouse Medicinal Herb

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Pseudo-ginseng (*Panax pseudoginseng*or *Panax notoginseng*)(Wall.) Benth also known as the Himalayan ginseng or Indian Ginseng which belongs to the Araliacaea family is widely used as a medicinal and functional herb. Ginseng has been used in traditional Chinese medicine since time immemorial and has been gaining popularity in modern times especially in European countries. It has been estimated to fetch an annual income exceeding 80 billion Chinese Yuan (CNY) and has a market price of approximately 111.17 US Dollars per Kg in 2023, it is expected to fetch more than 127.72 USD per Kg in 2024.

According to Shennong's Herbal Classic which is one of the world's oldest pharmacopeia of medicinal herbs and plants, herbs were classified into three main classes based on the degree of toxicity. Ginseng was classified as a non-toxic medicinal plant and has been used to improve the quality of life of mankind.

Properties

Saponins are the main active ingredients of Pseudo Ginseng which are composed of Triterpenoid aglycone. The majority of useful phytochemicals are created as a result of secondary metabolism in plants. Ginseng saponins, which are secondary metabolites, are efficient at fostering health. Numerous substances, including polysaccharides, saponins, sterols, polyalkenes, and essential oils, can be found in ginseng roots. Triterpenae saponins, commonly known as ginsenosides or panaxosides, are the primary bioactive components present in P. ginseng [21]. The roots, stems, leaves, and flower buds of numerous ginseng species have been used to identify over 150 naturally occurring ginsenosides [22]. Because of the location of the plant, the timing of growth, and the harvest, ginsenosides vary greatly between species. Ginsenoside content can be influenced by a number of variables, including age, root dry weight, soil fertility, light, and growth site. Fresh ginseng that has been collected within the last four years has the least pharmacological value. It can be used as an ingredient in cooking. About 1-2% of the ginsenosides in P. ginseng roots harvested after five years or more are ginsenosides (Bucci, 2000; Hong et al., 2012). With different processing techniques, ginsenoside content and composition also differ in the roots (Gui and Ryu, 2014; Kim, 2015).

Ginseng has immense therapeutic properties, anti-inflammatory, anti-oxidative, anti-diabetic, anti-tumor, anti-hypertensive, some to mention. It also regulates metabolism, immunity, blood pressure, sexual potential, cholesterol level. The flowers and roots of the plant are anti-bacterial, antiseptic, aphrodisiac, diuretic, expectorant, hypoglycaemic and also used as a stimulant. Roots of P.ginseng are used both internally and externally in the treatment of nosebleeds, haemorrhages from the lungs, digestive tract and uterus, injuries and also used as a herbal supplement for the treatment of indigestion, vomiting, coronary heart disease and angina.

Habitat

Pseudo Ginseng grows in temperate regions of the country like Nepal, Eastern Asia. It is widely distributed in the thick forest of the Himalayas at elevations of 2,000 to 4,000 meters where the soil has deep humus content. It is a herbaceous perennial plantdeveloping from a short, stout,fleshy and tuberous rhizome growing upto a height of 50 cm (Clarke,1879).

The palmate leaves have three to five leaves that are arranged in a whorl at the apex of the stem.The small, yellow-green flowers are arranged in a single terminal umbrella. June through August are the months when flowers bloom. When ripe, the drupes, which resemble berries, are vivid crimson and black. Between August and October, there is a fruiting phase. The white, oblate seeds are round. The plant grows best in climates that vary from tropical to subtropical, with typical temperatures between 15°C and 25°C (59°F and 77°F). For the plant to flourish at its best, it prefers a soil type that is well-drained, loamy, rich in organic materials, and has a pH range of 6.0–7.5.

Preparation Method

The roots of the *Panax pseudoginseng* plant, which are used, are ideally obtained within the ages of 6 and 7 years. After this time, the roots are collected in the fall and can be used either fresh or dried. The roots can also be brewed into a tea, used as a flavour in liqueurs, or chewed. The young leaves and sprouts are harvested along with the flowers, young leaves, and buds.

Present Scenario

The plant must be conserved due to the rising rate of demand on the global market (Wang et al., 2013). The earliest adoption of sustainable growing methods is required to protect the herb's biodiversity.

Rhizome harvesting for medicinal purposes is not done sustainably, and habitat damage is endangering the species in its natural environment. The species is unable to grow and reproduce because of its extremely weak ability to adapt to the synthetic environment. The goal of the current work was to create an effective low-cost propagation technique and clonal planting materials using rhizome splitting and root cutting.

For their continuous survival, the majority of forest plant species typically replenish through their seeds or by vegetative mechanisms. Due to unsustainable harvesting for local medicinal use, the destruction of natural habitats for "Slash and Burn Cultivation," unforeseen development operations, and other anthropogenic activities, many of these plants are threatened and their wild population is dramatically declining. The proportion of plants used for traditional medicine to all the medicinal plants from India that have been recorded is 20%. Out of the 400 different species of medicinal plants, only 20 are being grown for use in the Indian herbal industry (Schippmann et al., 2002). If the proper conservation measures are not done, these factors pose a serious threat to the wild plant species that already exist.

The majority of forest plant species typically rejuvenate via their seeds or by vegetative propagatory means. Effective mass propagation for the protection of these species is one way to preserve these economically and medicinally significant plants; failing to do so would endanger the survival of the currently existent wild medicinal plants. Effective mass propagation is needed to ensure the survival of this species and the preservation of the medicinally significant plants. Both domestic crops and the mass production of threatened wild species depend on widespread propagation. The Panax pseudoginseng is one of the over-harvested plants in the Araliaceae family, which has 16.3 percent of its species classified as threatened (Scippmann et al., 2002). Macro propagation can produce true-to-type clones and stop the local population of a plant species from going extinct (Kipkemoi et al., 2013; Deb et al., 2015).

Cultivation of medicinal plants is the only means of meeting the ever increasing current and future demands of the people and the growing industry (Schippmann et al., 2002) . The species grows at its best in its natural condition but their population is dwindling due to habitat destruction and anthropogenic activities and it is important to develop farmer friendly propagation protocol to large scale propagation to ensure its population survival. Present study therefore aimed in to experiment the production of clonal planting materials of Panax pseudoginseng Wall., an important medicinal and threatened species through different macropropagation techniques.

To guarantee the establishment, growth, reproduction, and disease-free status of the plants, it is crucial to choose the proper site habitat for their growing. The sole natural means of proliferation for the plant is through the production of fruits, which takes a long time to mature. With locals becoming increasingly aware of the value of this medicinal plant and uncontrolled harvesting occurring in its natural habitat for local medicinal uses, the plant population in its native habitat has been significantly diminished in recent years.

Pseudoginseng in Manipur

Ginseng, which has a wide range of therapeutic benefits and is in high demand on the global market, is widely available in Manipur's Ukhrul district. Ginseng from the genus *Panax Pseudoginseng* Wallich, which belongs to the family of Araliacaea and Thalictrum Foliolosum, may be one of the practical substitutes for Poppy plantations, which the government has rightfully outlawed and declared illegal, taking into account the suitability of the soil and climate as well as the sustainability factor.

Conclusion

Pseudo-ginseng is recognized for its amazing therapeutic powers and long-standing traditional use in herbal therapy, making it a truly powerhouse plant. This herb, also known as *Panax notoginseng*, has a great deal of therapeutic potential, especially when it comes to heart health, inflammation reduction, blood reduction, immune system support, and wound healing. As researchers continue to uncover pseudo ginseng's hidden potential, the future holds exciting opportunities for this herbal treasure. The inclusion of pseudo ginseng in scientific investigations and clinical trials further establishes its status as a topic of important interest and exploration in the modern medical world.

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