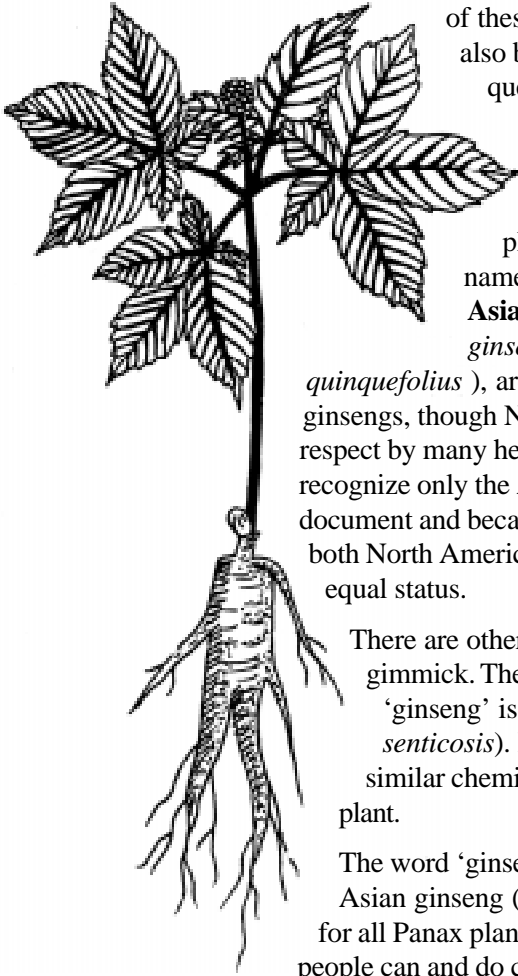


GINSENG – WHAT IT IS AND ISN'T!

Introduction

When you go into a retail outlet to buy ginseng, you may face a dilemma. A number of different products labeled 'ginseng' may be on the shelf and the confusion over what really is 'ginseng' begins. In reality, only a few of these may be a true ginseng product. There may also be a considerable price range, raising the question, if they are all 'ginseng', why the large difference in price?



The most important task then, is to sort out what is and what isn't a 'true ginseng'. All plants with *Panax* as part of their technical name are closely related and are called ginsengs. **Asian** (Chinese or Korean) ginseng (*Panax ginseng*) and **North American** ginseng (*Panax*

quinquefolius), are considered to be the only two true ginsengs, though Notoginseng (*Panax notoginseng*) is gaining respect by many herbalists and scientists. Some scholars recognize only the Asian species but for the purposes of this document and because they are so similar in content and action, both North American ginseng and Asian ginseng are given equal status.

There are other plants labelled as 'ginseng' as a sales gimmick. The most common plant wrongly labelled as 'ginseng' is Siberian ginseng (*Eleutherococcus senticosus*). It is a relative of true ginseng plants and has similar chemistry but it is not a true ginseng or *Panax* plant.

The word 'ginseng', although part of the Latin name for Asian ginseng (*Panax ginseng*) is also a common name for all *Panax* plants. Common names are not controlled and people can and do call many things 'ginseng'. There may be a family connection, or the plant may look or taste or have similar

properties to ginseng. See the table in the centre of this document 'Ginseng Relatives and Impostors', for a list of plants other than the *Panax* group that use ginseng as a common name. There are other instances where four or five plants have the same common name, (i.e. 'bloodroot').

True ginsengs are widely available in the marketplace and you will find them as a pure product or mixed with other constituents (i.e.: vitamins, royal jelly, etc.). Capsules, are the most popular form in North America, as the taste can be avoided by swallowing the product encapsulated in gelatin. True ginseng has a pleasant earthy, bitter, sweet taste, and seldom creates an after-taste in any of its forms.

Ginseng FACTSHEET



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Ginseng Note 97-01

When purchasing a North American ginseng product, the label is a most important information source. Legally the label must give the common name of what is in the container, the net quantity of the product for sale, a list of ingredients if applicable and the name and address of the company selling the product. Other requirements may also apply.

The label may be vague so you must read it carefully. Statements like pure ginseng are quite definitive. Others like 'contains ginseng' are vague. If a label doesn't make a statement as to the purity, it must be considered suspect. A product like ginseng, where the word is a common name for a number of plants, should have the botanical name on the label. Price is not a determining factor in purity or value received and the actual contents of the package must be known before an actual value can be determined.

- | | |
|--|--|
| <ul style="list-style-type: none"> • If it is inexpensive • If it is expensive • Look on the label for descriptors as to what is in the container. | <ul style="list-style-type: none"> – it is probably not North American or Asian ginseng, or – it may contain very small amounts of ginseng, or – it may be made from a low quality product, or – it is probably Siberian ginseng, not a true ginseng – it still may not be a high quality ginseng, or – it may also be less than 100% pure ginseng, or – it may be mixed with other products, or – it may be exactly what you want |
|--|--|

There is a new selling feature in the marketplace, called 'guaranteed potency' or 'standardized' products. In the case of true ginseng, they would guarantee a minimum percentage of ginsenosides (the phytochemicals or the chemical marker compounds in ginseng that make it different from other plants). This is a good feature as you know what percentage of ginsenosides you are receiving, but the nature of the pure product itself can be considerably altered. In a guaranteed potency ginseng product, additives for stability, less expensive root portions or fillers may be used, as they are basically selling chemistry (ginsenosides), not pure or whole products. Guaranteed potency products are in themselves not bad or poor products, just different from a whole root product and as such it is hard to determine their value. The Koreans, for example, generally feel that the whole root, body, prongs and fibre, (see figure 1. later in this text) are necessary to give the consumer the proper effects.

Ginseng has been used by indigenous peoples in North America and Asia for as many as 5,000 years. Little written history is available but when historical uses from these two diverse areas are compared, similar patterns are identified.

Ginsenosides—What are they?

Ginsenosides fall into a group of related phytochemicals (plant chemicals) called saponins that are found in many plants. The ones in ginseng are called ginsenosides. The range for samples tested will be from one to five per cent. Asian and North American ginseng have different amounts of these chemicals in their structure causing them to do slightly different things, yet they are much the same. North American ginseng (*Panax quinquefolius*) has 29 * different

ginsenosides, which are a higher total percentage than the 20 * ginsenosides found in Asian ginseng (*Panax ginseng*). This does not necessarily make North American ginseng better for all things, as the distribution of the individual ginsenosides is important; for example, Rb₁ is very high in North American ginseng, compared

to Asian. Rg₁ is not absent in North American ginseng, but is found only in negligible amounts. The ginsenoside Rg₁ is considered to be the stimulatory chemistry in Asian ginseng making it more useful as a medicine.

* *Scientists differ as to the actual number of ginsenosides in ginseng as some are found in negligible amounts and are hard to detect.*

The extra ginsenosides found in North American ginseng are thought to be the chemistry responsible for helping the body cope with stress, by means of adaptogens, which help the body to adapt to various stresses.

The percentage of ginsenosides varies in ginseng. The age of the roots, how and where it was grown, the part of the root used, the genetic makeup of the seed as well as the species of ginseng all play a role. Claims made that a ginseng product has over six percent ginsenosides should be regarded with suspicion unless it is stated that they are artificially supplemented, then they should be labeled as an 'enhanced' or as a 'guaranteed potency' product.

Why should we use ginseng?

The short answer is that ginseng is a general stimulator and helps many bodily systems work better. There are lots of testimonies to support this but not many clinical trials. One of the greatest testimonies for ginseng, is the 3,000 plus years of recorded use in China for many ailments. It is seldom used alone as a medicine, but often as a health food. Ginseng tea is a favorite way to use it in Asia and is gaining popularity in North America as well.

In North America, stress reduction is probably the most common reason for taking ginseng. Other common claims are that it aids in controlling diabetes, cholesterol, blood pressure and fatigue. North American ginseng is also touted as an immune system enhancer, an antioxidant and as an aid to treating liver disorders. There are other claims, but for more information refer to Factsheet 97-02 "Ginseng—Why and How It Is Used".

Technical Nomenclature (naming) of North American Ginseng

Panax quinquefolius L.

All known plants in the world are classified and named using a bi-nomial naming system (genus and species) consisting of two Latin words. These usually describe the plant, i.e. *Panax quinquefolius* = North American ginseng. *Panax* means 'cure-all or panacea' and *quinquefolius* means 'five leaves'. These two Latin words refer to the genus and species portion below. These two parts of the bi-nomial system are used in the botanical world for all plants. Common names are often confusing as they can change from area to area.

- Kingdom – Plants or Animals, in this case plants
- Division – the highest rank or taxon used to separate plants into groupings
- Class – the second taxon or grouping used in naming plants
- Order – Umbellales (parsley order) the third taxon, this one includes ginseng
- Family – Araliaceae (ginseng family)—there are 55 genus groups and approximately 700 species of plants in this taxon
- Genus** – *Panax* (a ginseng), one of the 55 genus groups in the Araliaceae family of related plants
- Species** – *quinquefolius* L. (signifies exactly which ginseng is being discussed)
- Sub Species – none recognized at this time for North American ginseng
- Cultivars – none recognized at this time
- Note:**
 - the *ius* ending denotes male where an *ium* ending denotes female, therefore ginseng, considered male, with references to 'man root' or 'man essence', should be spelled with *ius* at the end.
 - the L. designates who actually first named the plant, in this case Linneaus.
 - the genus and species categories are always underlined or put in *italics*, with the genus always beginning in a capital letter and the species always lower case: i.e. *Panax quinquefolius* or *Panax quinquefolius*

GINSENG PLANTS (*Panax*)

Botanical Name	Common Name	Native To	Comments
COMMERCIAL or 'TRUE' GINSENG PLANTS - all in the 'Araliaceae' family			
<i>Panax ginseng</i> or <i>P. shenseng</i> (old spelling)	Asian ginseng Chinese ginseng Korean ginseng Jen-shen or Hong shen Sheng shai shen	North East China South East Russia	Is the ginseng used in China for 3,000-5,000 years depending upon literature sources Often called the 'true' ginseng
<i>Panax quinquefolius</i>	American Ginseng Canadian Ginseng North American Ginseng Shang Xi yang shen	East North America (Ontario and Quebec south to Georgia)	Used by the North American Indians for virtually the same reasons as the Chinese used <i>P. ginseng</i>
<i>Panax notoginseng</i>	Notoginseng South China ginseng Sanchi ginseng San-qi or San qui ginseng Teinqi	South West China and Vietnam	Gaining popularity in the world of medicinal herbs. Claims made are for blood enhancement and a high ginsenoside content

OTHER GINSENG PLANTS—all of the following plants having the genus of *Panax*, (in the 'Araliaceae' family), are of uncertain status as far as accurate taxonomy (classification) is concerned, except *P. trifolius*.

<i>Panax japonicus</i>	Japanese ginseng Bamboo ginseng Zhuijieshen Tikusetuninzin (Japanese) Chu-chien-jen-shen	Japan to India	This species is used very little but is available in some regions
<i>Panax pseudoginseng</i>	Tienchi ginseng Chai-jen-shen	Western China	This species is used very little
Note: The species found below are not likely to be found anywhere commercially.			
<i>Panax stipuleanatus</i>	Pingbiann ginseng Ping-ping	Western China and North Vietnam	
<i>Panax trifolius</i>	Dwarf ginseng	East North America	Has very small globose roots like American ginseng with no medicinal value
<i>Panax zingiberenseis</i>	San qi ginseng Chaing-chuang Ginger shaped ginseng	Western China and North Vietnam	

Panax sinensis
Panax major
Panax bipinnatifidus
Panax omeiensis
Panax wangianus

Note: The above chart follows the classification according to a recent article in the - *Molecular Phylogenetics and Evolution Journal*, volume 6, No. 2, October 1996, pp 167-177, by Jun Wen and Elizabeth A. Zimmer, titled - *Phylogeny and Biogeography of Panax L. (the ginseng genus, Araliaceae) : Inferences from ITS sequences of Nuclear Ribosomal DNA, Smithsonian Institute.*

GINSENG RELATIVES & IMPOSTORS

Botanical Name	Common Name	Native To	Comments
1. Related Plants —that improperly use the common name of ‘ginseng’			
<i>Eleutherococcus senticosus</i> Araliaceae Family	Siberian ginseng ** Eleuthro ginseng Ciwujia	Eastern Russia North East China Northern Japan	Has properties similar to the ginseng group, but not the same. Is related to the ginsengs, <i>Panax</i> spp.
<i>Acanthopanax sessilifloris</i> Araliaceae Family	Wujiashen ** Thorny wujia ginseng	China	Related to ginseng, <i>Panax</i> spp. but no similar properties.
<i>Aralia nudicaulis</i> & spp. Araliaceae Family	Sarsaparilla ** Wild ginseng	North America	Related to ginseng, <i>Panax</i> spp. but no similar properties.
<i>Echinopanax horridum</i> aka - <i>Oplopanax horridum</i> Araliaceae Family	Devils club ** Alaskan ginseng Rocky Mt. ginseng	Found all over the North Western North American wet areas	Related to ginseng, <i>Panax</i> spp. but no similar properties. A medicinal plant in Native-Indian culture.
2. Impostors —Non-related plants using the common name ‘ginseng’— not in the ‘ Araliaceae ’ Family			
<i>Pfaffia paniculata</i> or <i>P. iresinoides</i> Amaranthaceae family	Suma ** Brazilian ginseng South American ginseng	Brazil	Not related to ginseng and no similar chemistry.
<i>Withania somnifera</i> Solanaceae family	Ashwagandha ** Ayurvedic ginseng Indian ginseng Winter cherry	India	Used in Ayurvedic medicine Not related to ginseng no similar chemistry.
<i>Lepidium meyenii</i> Cruciferae family	Maca ** Ginseng of the Andes	Native to Peru over 12,000 ft elevation	Not related to ginseng and no similar chemistry.
<i>Rumex hymenosepalus</i> Polygonaceae family	Tanners dock ** Wild red American ginseng Wild red desert ginseng Canaigre	South Central USA	Not related to ginseng and no similar chemistry.
<i>Pseudostellaria heterophylla</i> Caryophyllaceae family	Prince’s ginseng ** Tai ze shen	China	Not related to ginseng and no similar chemistry.
<i>Angelica sinensis</i> Umbelliferae family	Women’s ginseng ** Dong quai Dang gui or Tang kwai	China	Not related to ginseng and no similar chemistry.
<i>Codonopsis pilosula</i> Campanulaceae family	Dang shen ** Bastard Ginseng Poor man’s ginseng False ginseng	China	Considered by many to have similar effects to Asian ginseng but much cheaper. Not related to ginseng and no similar chemistry
<i>Adenophora polymorpha</i> Campanulaceae family	False ginseng	China	Not related to ginseng and no similar chemistry
<i>Caulophyllem thalictroides</i> Berberidaceae family	Blue ginseng	North America	Not related to ginseng and no similar chemistry

** Name used most often

Buyer Purchasing Criterion

This perennial root gains in value with age, quality, and often, shape. An Asian name for ginseng is 'man root', and roots having a 'man form' often have more value when sold as an individual whole root. Ginseng is traditionally purchased by examining the age, colour, size, shape, texture, fracturing quality, freedom from visual disease and taste.

These are all relatively subjective processes. There is a recent move by some manufacturers of ginseng products to purchase root by the determination of the actual ginsenoside in a sample. A high analysis of Rb₁ for example in North American ginseng may be a price determiner in the future.

Ginseng Terms

Red Ginseng

High quality roots of Asian ginseng (*Panax ginseng*) are often processed by steaming and drying to produce red ginseng. It is **not a species** of ginseng as is commonly thought. The process of making red products involves steaming for eight to ten hours at approximately 105°C. The root is then dried and usually sold in a whole root form or may be further processed into teas, capsules, slices, etc. When sold as whole root product it is graded into three grades, heaven, earth and good. Each grade has nine size categories giving a total of 27 different categories. Other ginseng species could be processed into this red product but a market for them is not developed at this time.

China White Ginseng

1. Asian ginseng (*Panax ginseng*) grown in China that is not processed into a red ginseng product and is dried normally in the open air or in a dryer is called China white. It is graded into many categories and is the most common way that Asian ginseng is sold in China. It is readily available in North America in whole root or in processed forms.

2. North American ginseng (*Panax quinquefolius*) grown in China is often **wrongly** given this name. The proper term for this should be simply 'North American ginseng grown in China'.

Asian or Korean White Ginseng

Asian ginseng (*Panax ginseng*) grown in China, Korea or Japan, that is not used for making red ginseng is called white ginseng. The roots are often changed by scraping or removing the very outside layer of root tissue giving it a whiter look when it is dried. Fresh Asian ginseng also falls into this category.

North American Ginseng

Panax quinquefolius, one of two *Panax* species native to North America (but the only one used commercially). It is more popular in South-East Asia than it is in North America or in Europe. This is gradually changing as it becomes more available in various forms and is better understood. It is considered by the user of ginsengs to be complementary to Asian ginseng (*Panax ginseng*). American is considered to be a 'cooling' (non stimulating) ginseng while Asian is a 'hot' ginseng (or a stimulant). American ginseng is traditionally sold as a dried whole root, directly to Asia.

Tael

The basic unit of measure used when purchasing ginseng in a traditional Asian store. It is equivalent to 1/12 of a pound (1.3 oz) in imperial measure or 37.8 grams in metric measure. To determine the price per dry pound in this measuring unit you would multiply by 12, not 16.

Catty

Ginseng in Asia or here in traditional Chinese stores can also be sold by a unit of measure called a catty. It is equivalent to 600 grams in the metric system. This measure is typically used for packaged ginseng such as red ginseng products. The box or can will contain 600 grams of a certain quality and a certain size count, designating how many of this size roots it takes to make one catty.

Prongs or Tail

Ginseng roots are often branched and a prong or tail is the root(s) that come directly off the main root or body. Often they are numerous and large, reducing the value of the main root and are considered prongy root.

Fibre

These are the smaller roots that branch off the main and prong roots. These generally break off in the drying and handling processes. These fine roots are often used to make value

added products and are considered to have a higher percentage of ginsenosides. The best value added products in many opinions, are those made from the natural balance of all three root sizes, or by using the whole root.

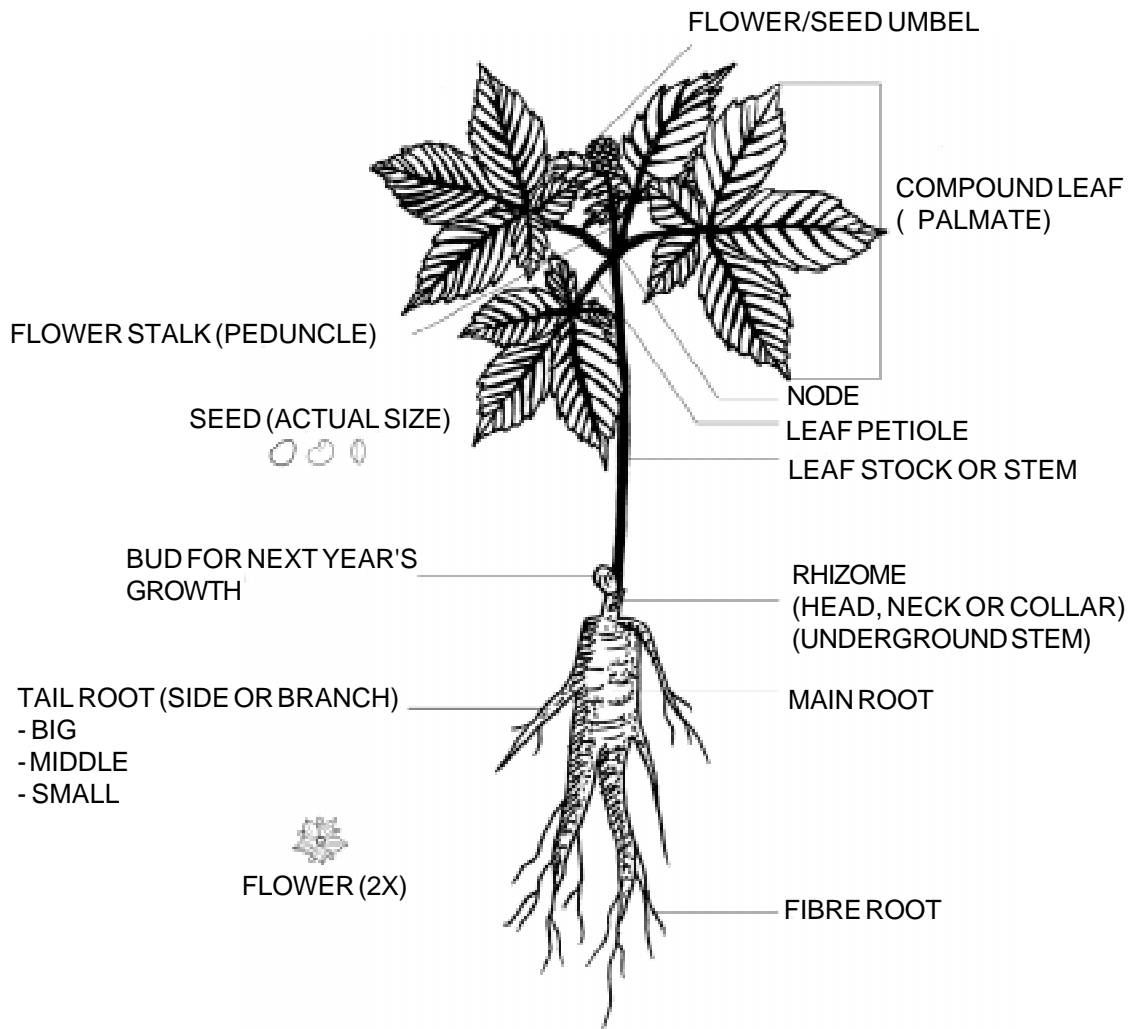
Radix

A term used to designate the root of any plant, i.e. ginseng radix.

Shen

Means a fleshy root, not specifically attached to ginseng.

Figure 1: Anatomy of a ginseng plant



Ginseng Production Methods in North America

Wild

Ginseng that is growing naturally in areas where it is indigenous and has received no human interference. There is no wild ginseng in western North America. Such ginseng is indigenous only to southern Ontario and Quebec in Canada and south to Georgia in the United States. It is protected in all areas and rare in many areas.

Wild Simulated

Ginseng that is growing where it was indigenous, or in similar climate and soil conditions but where the seeds have been sown by farmers. It is then left to its own defenses.

Woods Grown

The next method of ginseng production is where farmers use a natural forest canopy to shade the plants. All the other activities are the same as cultivated (see below).

Cultivated

A system of growing where the crop is shaded, mulched, watered, fertilized, cooled, and protected against pests by the farmer.

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1. *Molecular Phylogenetics and Evolution Journal*, volume 6, No. 2, October, pp 167-177, 1996, by Jun Wen and Elizabeth A. Zimmer, titled - Phylogeny and Biogeography of *Panax L.* (the ginseng genus, Araliaceae) : Inferences from ITS sequences of Nuclear Ribosomal DNA
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Prepared by: Al Oliver, Provincial Special Crops Horticulturist, and produced by the Ministry of Agriculture and Food.

**Current translation for
ginseng in the
following languages:**

**Korean—Insam
Japanese—Ninjin
Chinese—Renshen**

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