

Ginseng Identification

Identification of American Ginseng: Introduction

While American ginseng is not a woody plant, it is nevertheless a perennial plant that develops through a series of distinct growth stages over time. Identification therefore requires an ability to recognize the different vegetative forms that might occur over the life of an individual plant.

The life cycle of ginseng is easily divided into stages with each stage bearing a distinctive leaf appearance (**Figure 1**). Specifically, each stage class is identified by the total number of leaves *and not leaflets* on a plant.

The progressive alteration in ginseng form can take many years to occur in the wild. Habitat conditions and annual fluctuations in weather conditions appear to be the two most important factors influencing rate of development. Given optimal habitat conditions, American ginseng may attain the four or five prong stages rather rapidly, perhaps in as little as 4-7 years. It is more common, however, for plants to require longer periods of time to reach such advanced stages.

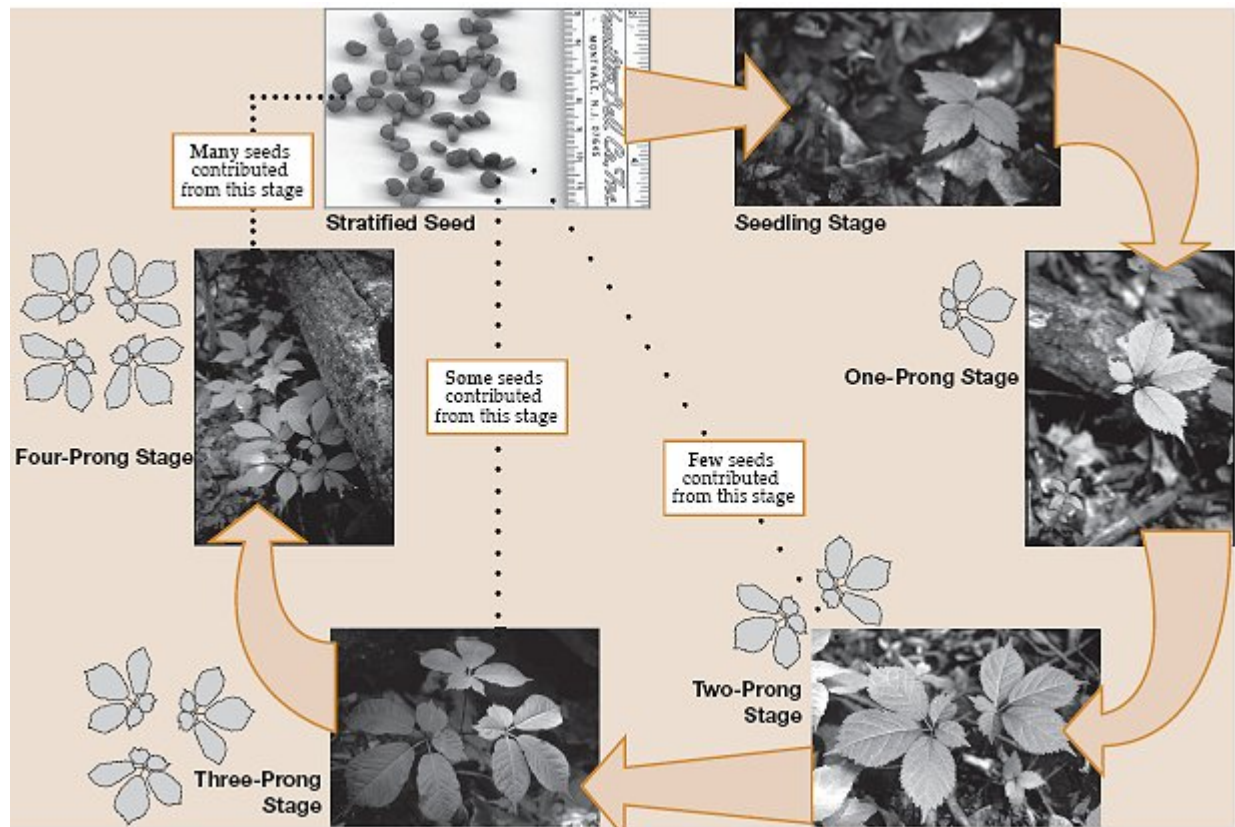


Figure 1: Developmental stages of ginseng

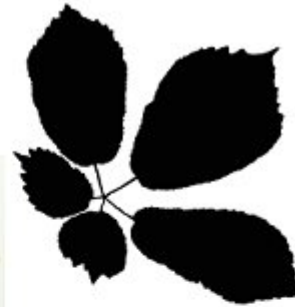
Identification of American Ginseng: Seedling Stage

The process begins following germination, when the *seedling* emerges and appears with three leaflets (*trifoliate*). Seed germination requires on average 18 to 22 months. The seedling form does not change the entire first growing season and, on occasion, for multiple seasons thereafter.



Identification of American Ginseng: One-prong Stage

Generally following the first year of growth, the leaf form in American ginseng transitions to *palmately compound*, meaning that each leaf consists of three to seven leaflets arranged around a central point at the tip of the leaf stem (*petiole*). Such a plant is called a stage class one plant or, more commonly in the ginseng trade, a *one-prong plant*.



Identification of American Ginseng: Two-prong Stage

A single-leaf plant, or *one-pronger*, will eventually attain a two-leaf form, with six to ten total leaflets (sometimes fewer or more) and is called a *stage class two* or *two-prong plant*.



Identification of American Ginseng: Three-prong Stage

After three or more years a two-leaf plant or *two-pronger* will attain a three-leaf form with 11 to 15 total leaflets (sometimes fewer or more) and is then called a *stage class three* or *three-prong plant*.



Identification of American Ginseng: Four-prong Stage

A three-leaf plant, or *three-pronger*, in turn, will become a four-leaf plant, with 16 to 20 or more leaflets. It is then called a *stage class four* or *four-prong plant*.



Identification of American Ginseng: "Patches"

A healthy, vigorous ginseng population or "patch" will thus consist of plants representing many stages of development. Whether a collector or grower, ginseng stewardship requires an ability to recognize the numbers of any particular stage class. This is necessary since adjustment of collection/harvest practices in an area should always encourage and retain **both** earlier *stage class plants* (i.e., seedlings, *one-* and *two-prongers*) **and** older "seed" plants (i.e., *three-* and *four prongers that tend to produce the most berries and seed*). Further discussion of ginseng biology as it pertains to stewardship and husbandry is found under [collection considerations and guidelines](#).



Identification of American Ginseng: In flower

Ginseng reproduction is largely limited to seed production rather than vegetative spread. Flowering begins only after plants have matured to the *two-prong* stage.

Small, inconspicuous, whitish-green flowers appear on ginseng plants in *umbelliform* clusters (an *umbel* type inflorescence). The flowers are both self and cross-compatible---i.e., they may set fruit and seed without cross-pollination and fertilization from another plant. In the wild and in "gardens," there are many visitors to ginseng flowers. Some of the most common and likely visitors include small bees.

In Pennsylvania, plants generally flower over a period of 4-6 weeks from mid-June through late July. The flowers begin to open first around the outside of the ginseng flower cluster (*inflorescence*). There then follows a sequence in which flowers open and mature from the outside towards the inside of the cluster over time (*centripetal inflorescence*).



Identification of American Ginseng: In fruit

Each flower on a cluster (*inflorescence*) has the potential to develop and ripen into a bright red *drupe* (if one seeded) or *berry* (if more than one seed). In the ginseng trade, these are most commonly referred to as *berries* or *seed pods*.

Because flowers open and mature in each cluster over an extended period of 4-6 weeks, the fruits similarly requires an extended time to mature. For this reason, it is common to observe both mature and immature fruit on the same plant during the period of time from late summer to early autumn.

Research and observation has yielded the very important practical finding that fruit and seed production in ginseng generally increases with stage. A *three-prong* plant, for example, will usually produce more fruit and seed than a *two-prong* plant. Thus, later stages of ginseng development (i.e., *three-* or *four-prong plants*) are more likely to serve as "seed" plants in an area.



Identification of American Ginseng: Leaf color at senescence

Late in the growing season---or if plants are stressed from drought, disease or other adverse conditions---ginseng will die-back (*senesce*). The color of the foliage during *senescence* is yellow, often strikingly so, and because of this it is often the easiest time to locate plants in an area.

