



Growing Woody Peonies From Seed

Nate Bremer-Solaris Farms, Reedsville, Wisconsin

Growing woody peonies from seed is an interesting and relatively easy task to accomplish. Seed treatment is the same as for herbaceous peonies in most instances. Seedlings of woody peonies produce rather exotic looking leaves their first year (plumules), which are often precisely indented and notched. After germination, flowering generally occurs a year earlier than herbaceous seedlings and some much earlier.



Seed sources vary widely and choosing inexpensive seed from unfamiliar sources may be a waste of money. Avoid the purchase of Chinese origin *P. suffruticosa* seed, since resulting plants typically do not grow well in American gardens. Seeds from Chinese origin *P. suffruticosa* are also likely to have come from a mixture of open pollinated plants, many of which were not selected cultivars. These seeds will likely bloom with inferior flowers and plant habits.

Often incorrectly sold by color, seedlings will produce a wide range of variation, even if collected from a single colored parent. Thus, purchasing seed labeled 'red' will likely produce pink, white, red and perhaps lavender seedlings. As in herbaceous peonies, woody peony seedlings do not bloom true to their parent's color or plant habit.

The woody peony group may be divided into two groups to address growing differences in seeds.



Group 1 includes the more winter hardy stemmed cultivars of Japanese *P. suffruticosa* and *P. rockii* hybrids. Plants in this group generally produce abundant quantities of seed and are best planted outside for Mother Nature to administer her seasonal temperature cycles. Seeds from this group will be most readily available for purchase from reliable sources. *P. rockii* hybrid seed often takes an additional year to begin growth, presumably due to a large amount of dormancy that needs to be overcome through temperature change.



Group 2 includes hybrids of *P. delavayi*, the lutea hybrids, which have less stem hardiness. These plants do not often produce large quantities of seed due to limited fertility. The seeds are often large and prone to decay if planted outside. Thus an indoor treatment is provided in growing these more successfully in cold climates. Seeds from this group are seldom available for sale due to the amount of effort required to produce them.

Outdoor Method. Group 1 seed. Outdoor planting will supply the needed temperature changes to breakdown dormancy factors in the seed during late summer, winter and spring. Mother Nature performs these duties far better than human invention does.

- 1) Select a planting site that will receive at least ½ day of sunlight during the growing season, is well drained and does not become wet at any time during the year. The area should also be protected from drying wind or excessive heat. This area will serve as a nursery bed that will provide the young plants with suitable growing conditions for their first 2 to 3 years of life.
- 2) Fresh seed will be planted immediately after harvest (early autumn) and generally produces superior results. Dry seed, such as, those purchased in winter and spring should be planted in mid-summer. Dry seed takes longer to hydrate than fresh seed and dormancy is more difficult to break, thus they are given a longer period in damp warm soil.
- 3) Till or cultivate the area to a fine texture. Soil should be moist, but not wet. If the soil is one of the heavy dense sorts (clay), mix coarse sand, gravel, peat and vermiculite into it as it is being cultivated before planting. A somewhat sandy loam soil is desired for species, as they require good drainage and soil aeration.
- 4) Press peony seeds into the surface of the area, no more than ½ inch depth. The seeds do not need to be covered with soil, simply firm or pack them into the surface. Space seeds the 1 to 2 inches apart to conserve space in the controlled bed. Seeds may be given greater space, but maintenance in the form of weeding and watering may be greater. Please remember to place a long lasting garden marker in the seed bed so that plants can be identified later in life. Knowing the identity of what comes up in the bed is both interesting and valuable, especially if you end up with a superior plant that could be shared or distributed later on. As mentioned earlier, *P. rockii* hybrid seed often takes an additional year for all or some of the seed to begin growth.
- 5) Cover the bed with approximately one inch of fine wood chips, wood/bark/mulch, sawdust, or wood shavings. The wood mulch will keep the bed evenly moist and supply the young seedlings with a degree of protection from atmospheric change. Young peonies appear to have an affinity to decaying wood, which promotes growth.



Plastic covered seed bed

6) Cover the entire bed (wood mulch and all) with a sheet of clear plastic. You can bury the edges of the plastic with soil so that it seals and is not easily moved by the wind or other conditions. The plastic will create a greenhouse effect, warming them during their first stage of dormancy reduction. The plastic will also protect the seed bed from evaporation or excessive watering (natural or gardener produced). The covering should remain on the bed through the entire winter and be removed as soon as possible in the spring. If left on too long, the small seedlings will begin to grow under the plastic and will not be in

synchronization with the season. We often remove the plastic when snow still remains and temperature are still below freezing at night.

- 7) Young seedlings will emerge as the temperatures allow in the spring. It is not unusual for seedlings to emerge in the bed for up to 3 years (most will come up in the first year), thus patience is required. The first season, the plants will only produce a single leaf (plumule). Keep them well watered (never wet), and protect them from hot sun if possible.



Seedlings emerging in spring

- 8) The bed should be left intact for two to three years, after which time the seedlings will have grown large enough to transplant in early fall with greater spacing between them. Some may begin to bloom in the third year, some in the fourth year, and the stragglers in the fifth/sixth years. If they are well taken care of, most will bloom in year four.

Indoor Method. This is used for **lutea hybrid seed**, which does not perform well with outdoor planting. Lutea hybrid seed appears to require a longer period of warmth after harvest than can be provided in an outdoor planting. These seeds are also the latest to mature, causing an even shorter period for the seed to root outdoors.

Some growers choose to use a bag method to germinate this type of seed. Many seedlings are lost due to disease, poor timing and mishandling using this technique, thus it is no longer considered a viable option for this type of seed.

The following method has been trialed for more than 5 years and has produced excellent results.

- 1) Purchase or build wooden boxes with dimensions that are roughly 12" wide x 12" long x 6-8" high, the bottom is made of the same material. Pine, oak or any other wood works fine and should be from $\frac{3}{4}$ " to 1" in thickness. The choice of a wooden box vs. plastic or other material is important, in that, wood breathes and moisture levels are remain rather constant using this material.
- 2) Fill the box to within an inch of the top with sterile soil mix, which does not contain any added fertilizer. The addition of a 2 to 3 of cups of



Wooden seed starting box

course sand, mixed with the soil, helps soil aeration, but is not necessary.

- 3) Press seeds into the surface and no more than ½" deep. Cover the seeds and firm the soil.
- 4) Water the soil liberally for two days, to the point that water runs from voids between the wood sides and bottom.
- 5) Using a large, clear garbage bag, enclose the entire box and tie off the bag. No more watering will be required until the bag is removed. The use of a clear bag allows visual access to the surface of the seed box, for monitoring any growth later on.
- 6) Place the bagged box in a warm location for three months. A temperature of 68F to 80F degrees works well.
- 7) After 3 months of warmth place the box in a cool location for 2-3 months. Temperature during this period may be 35F to 45F degrees for dormancy reduction. Some plants may begin to emerge early, but should remain in the bagged box if at all possible. Transplanting seedlings separately out of the box into another container often damages them.
- 8) After the cold period, remove the plastic bag and place the box outdoors (if all chance of frost is passed). Seedling will begin to emerge over the next 6 weeks. Monitor the box for water needs during this period, as it will now evaporate water quickly.
- 9) In mid to late July the entire box may be tipped on its side and seedlings removed. Plant each seedling in the garden with 8 to 10 inches of spacing. Mulch the surface closely around the seedlings and provide enough water to keep them from wilting.



Seedlings in spring

Woody peonies are relatively easy to grow from seed, only requiring a bit of patience. Growing seedlings and tracking their progress through the years is both interesting and satisfying. When they begin to bloom after 4 or 5 years, there will likely be a good percentage of keepers, although, most will not be worthy of registration and distribution. However, many will make excellent garden plants and reward the gardener yearly with ornate large blooms.