

Woody Peony Culture and Care

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-Major Points of Culture-

Typically, woody peonies do not require much special treatment and their culture is fairly intuitive for the gardener, with some exceptions. However, they are a plant that is not commonly grown at this time in most gardens, thus some basic cultural information related to them may be helpful.

- 1) Plant in a well-drained site, which never becomes wet and allows roots to prosper. It is especially important to know the winter season's site properties, as this is period in which many soils may become saturated. Typically, gardeners do not notice winter soil conditions due to inactivity in the garden, thus extra attention is required to the site before planting. Winter kill from excessive moisture is one of the most common reasons for woody peony plant failure.
- 2) Select a site which does not have competition from other plants – especially shrubs and trees. Lilacs and some other shrubs produce root systems which compete with the roots of peonies for the same nutrients.
- 3) The planting site should be one not subject to late spring frosts, as this may prevent young buds from developing further. Low sites are most often impacted by late frosts.
- 4) Provide a site with full sun or very light shade. Those planted in hot summer climates are best when some shade is provided to protect the leaves from burning.
- 5) Water only if needed. Woody peonies are quite drought resistant and resent wet feet. Keep plantings well clear of automatic sprinklers, such as those to keep lawns green and growing. Do not plant near downspouts and roof driplines.
- 6) Provide a site which will have good air movement and is not crowded. Good air movement around plants prevents foliar and stem diseases.
- 7) Plant in predominately native soil found at your location, if at all possible. Amending soils heavily with organic material in the planting hole often creates a 'BIRD BATH EFFECT' in which water is held and causes rooting issues. The goal is to create a homogenous soil in which roots do not encounter pockets of variable constituents (roots have to adapt to each soil variable they encounter). If amending the soil, do so broadly over the entire planting area, not just the planting hole. DO NOT USE excessive amounts of peat as an amendment – it holds water and is acidic. Peat is a very good dry packing material for shipping peonies due to its antiseptic properties, but is not useful as a growing medium by peonies. However, peat may be well mixed with native soils in very minor amounts to improve soil structure without detriment.
- 8) Soils which support best growth have a near neutral pH (6 to 7). Clay soils are often highly fertile and may support excellent growth, but may hold excessive water which damages roots. Avoid soils with fresh and excessive organic material included, as this may promote disease. Soil predominantly composed of sand are not particularly fertile and peonies will not prosper.
- 9) Removal of old, dead or weak stems allows new growth to progress unimpeded and promotes new healthy stem production. Woody peony stems are not particularly long lived in most situations. If planted deeply, any woody peony which loses its stems will almost always regrow from basal shoots, given proper growing conditions.



- 10) Containerized culture is not recommended and less than positive results may be expected over time. Plant woody peonies in the ground where they may grow their extensive root systems which will feed their large stems.
- 11) Fertilize only if necessary. Allow plants to establish at least 5 years before considering the application of fertilizer (true for all peonies). Avoid the use of fresh manure, as this may burn root systems or carry diseases. Woody peonies grow slowly the first few years and their growth is always measured, thus it is unlikely any large increase in growth will ever be noted after fertilizing. High nitrogen fertilizers, as those found in lawn and bedding plant ratios, are to be avoided. High nitrogen fertilizers will promote soft growth susceptible to disease.
- 12) Plant them in the late summer into the fall season as soils begin to cool. This period of time is when root growth occurs. The month of planting will depend upon the region in which the garden is located. Those in the northern tier of the United States usually plant at the end of September to mid-October. More southerly locations will have best results in mid-October to November. Spring planted woodies can be expected to flounder (or die) and do not produce roots until soils begin cooling in late summer – spring planting is not recommended and will not produce a larger plant the following year.
- 13) Avoid the use of mulch near woody peonies. Mulch often holds excessive moisture and does not allow for good aeration of the soil below it, creating a wet situation. Mulching plantings has become popular and is one of the main causes related to plant failure and development of disease. If plantings are mulched, make sure it is applied no closer to the woody peony plant than 16 inches. Additionally, many of the commonly available mulches are now treated with preservatives and coloring to enhance their longevity and visual appeal, these may be detrimental peony growth. Mulch contamination from oils, herbicides and other contaminants may occur at the production site before it is sold to end consumer – these may also present issues with its use. Lastly, some wood mulches may be produced from tree species which contain chemicals which adversely impact peony growth (ex: Black Walnut).

- What to expect -

As you read, please keep in mind the information included is based primarily on experiences growing woody peonies in one of the most demanding winter climates in the United States – Wisconsin. Wisconsin is a northern tier state which is subject to wide climate variations, but woody peonies do well here. Experiences in other locations may differ and we make note to those where we have information.

Woody peony plant growth is relatively slow and it may take certain cultivars three or more years to produce stable flowering habits. Young tree peonies often do not bloom true to form and color, and will only show fully developed and colored flowers on mature/established plants. Once plants are established, they may grow in one place in excess of 50 years. Most cultivars require 10 years of growth to attain mature size – sometimes more. Plant performance and flower characteristics will vary due to site, climate and other variables.

All woody peonies require a cold dormancy period, although certain cultivar groups have been grown in warmer climates successfully. USDA Hardiness Zones likely to experience the most success are Zones 4 through 8. Hardiness and performance are not completely reliant on low winter temperatures and therefore using the “zone formula” should not be used exclusively. Variability in temperature, precipitation, exposure and air properties through all seasons play a major role in the hardiness and performance of woody peonies. Winter conditions which are extremely variable in precipitation forms (rain, ice, snow) can cause numerous issues in planting sites. Equally problematic may be summer conditions which present low humidities, excessive UV exposure and heat. All gardens are now being impacted by climate change and further diligence may be needed. Each gardener should evaluate their own conditions and make commensurate adjustments to their siting choices for best success.

Woody peony groups and cultivars are extremely diverse and their behavior in the garden is equally diverse. Equal treatment of all cultivars will not produce the same results. Climate, soil and numerous other variables all play a part in the performance of these plants in our gardens. If new to woody peonies, begin by growing

those that might be considered “easy” or “reliable” and definitely purchase a number of plants from different cultivar groups (see groups). All said, these are not difficult plants to grow, but the more you know the better your chances for success.

- Commercial Availability -

Reliable woody peony sources will ship bare root plants with most of the stems cut off or completely cut off, leaving a large root to stem ratio. This is very beneficial to the plant, as it will grow new stems the following growing season that are proportionate in size for the plant’s root system. Typically, plants that arrive with many branches (unreduced) will lose these older stems over first or second winter, or will not prosper. Thus, whether the plants are grafts or own root divisions, it is to the benefit of the plant to have few branches or a reduction of older branches.

Grafts



Grafted woody peonies

Tree peonies are typically propagated by grafting a scion (stem and bud) on to a peony root (usually a herbaceous peony’s root). Grafted plants that are 3 years or older usually begin to bloom reliably and begin developing their own root systems, with one caveat -grafted plants must be planted deeply (see planting). Grafted plants have received much bad press, but in reality, are excellent choices for northern gardeners planting in the fall. The herbaceous root stock of grafted plants is well adapted to growing in cool, damp soils and is more vigorous than own root plants in cold climates.

Most woody peonies available commercially are 1 or 2 years old from grafted propagation and will require time to mature. Look for grafted plants which are in the three- to five-year-old range if you’d like a faster start. Three-to-5-year plants are prime candidates for transplant due to their bulkier size and their youthful growth habits.



Herbaceous peony stems growing from adventitious nurse root

Certain sources use “adventitious” root stock for their grafts, but not all. Adventitious rootstock has the capability of producing the original herbaceous peony upon it roots, which will ultimately out-compete the woody peony grafted to it. Imports from Japan, China and certain European propagators will most often be grafted to this inexpensive and troublesome rootstock. Some domestic sources may also use this type root stock as well. **Solaris Farms uses rootstock which does not produce adventitious growth and there will never be a need to address growing issues associated with the nurse root.** Gardeners should be watchful for herbaceous leaves arising from the bases of grafted woody peonies which were purchased from other sources. If this very different leaf type is detected, the stems carrying these leaves should be cut away from the root they attached to, including any herbaceous buds found on the roots. This does not guarantee the problem will be solved, since any remaining original nurse root may continue to produce adventitious growth in the future. Adventitious root growth may

occur a year or two after planting a grafted plant, but may also become an issue many years later. Ultimately, the best solution would be to dig the entire plant and remove the nurse root (herbaceous root), if the woody peony has grown its own root system. Better yet, source grafted woody peonies from a source guarantying against such a problem. Consider the additional amount of time, effort and the plant health surrendered when planting inexpensive, low-quality grafts which may produce adventitious growth – it is not worth the effort or expenditure.

Additionally, plants produced overseas are often mislabeled, causing more frustration! Sourcing proven plants will ensure a better plant and one that is what was paid for.

Some woody peonies are grafted on to other woody peony roots, which is desirable, but unlikely due to available root material and issues with physically joining scion to the woody cored nurse root. Generally, these plants, if available, will perform admirably. An exception would be those grafted on to *Paeonia delavayi* rootstock, which is not particularly hardy or vigorous in very cold growing zones.

Ultimately, the woody peonies should be encouraged to produce their own roots, as this type of root structure is a match for the crown and stems and will likely produce a healthy long-term planting. Grafted plants will produce woody peony roots over time if planted deeply and perform equally as well as own root plants.

Own Root Divisions



"Own Root" plant before division

This plant configuration is produced from digging larger plants and either cutting or sawing them apart to create division. The roots on these plants are their own and were not grafted to them. The overall structure of divisions can be quite variable; ranging from a reduced single stem with a root attached - to a multiple root division with stems reduced. The size, structure and availability of divisions is dependent on cultivar characteristics (genetic), plant age and origin climate. Either configuration will grow well given proper treatment in the garden. Own root plants do require warmer soils to root and are often slower to establish in northern climates. In very cold climate areas, we recommend early fall planting before soil temperatures fall excessively, for best results. Warm climate gardens report excellent results with own root divisions due to warmer fall and winter soils than cold climate gardens. Warmer soils which do not freeze quickly, deeply or for long periods support fast own root growth.

Purchasing tree peony divisions is not typically an option, since numerous cultivars tend to grow off a centralized root system. However, certain cultivars do lend themselves to this type of propagation and may be available. Own root plants have an upside - the gardener would never have to remove an old herbaceous nurse root if it were to impede growth due to adventitious growth or from planting too shallowly.

Containerized Plants

Many commercial sources offer plants in containers during the spring season. Containerized peonies are sold in the spring to take advantage of gardeners' enthusiasm for planting during that season, however it is not the correct time to plant peonies. Spring planting of woody peonies is not as successful as fall bare root planting, due to limited to no root growth in the warming soils of the season. Plants which do not outright die from spring planting, will often show extreme wilting during summer and a lack of growth. If they survive to the fall season, it is likely they will establish and grow the next year and no gains in size will be experienced. Containerized plants may be held until fall for planting, but often prove difficult to keep healthy until the proper planting time arrives. Keeping containerized plants evenly moist is one of the greatest challenges to success due to fast changing conditions within the pot (sometimes occurring within a few hours). Additionally, containerized plants are subject to overheated root systems from summer air temperatures and sunlight. If woody peonies are purchased in a pot, we recommend burying the pot in a shady part of the garden that can be monitored closely for water needs, while it waits to be planted in the fall. Containerized peonies can be planted in the fall, just as their bare root counterparts are – simply remove all soil from the root system, cut stems back to match the root system and treat it as you would a bare root planting. Holding woody peonies in containers, for any length of time, is a gamble due to required maintenance to keep them healthy. Consider - All commercial growers/propagators grow their plants in the ground (field) and only place them in containers for sales purposes – proof that containers are not preferred by the experts! Solaris Farms does not sell containerized plants due to the challenges they present.

A Word About “Age” and “Size”



An old grafted plant with nurse root and own roots

Larger, older plants may difficult subjects for transplant due to their less vigorous root systems and massive stem structures. Plants with older root and stem structures will have lost their youthful growth habits and must regrow root systems which can support their larger size. Older plants can be successfully transplanted if most of their woody stem structure is cut away, although it will take them much longer to recover than a youthful plant. Very old woody peonies which have large diameter stems tend to be the most difficult to resurrect and it is recommended they not be divided or transplanted if at all possible. Starting with younger plants tends to be most rewarding. One should not base a purchase on the number of stems a plant has, as this has nothing to do with vigor or the amount of time which will be required to establish itself. Excessive stem structure will adversely tax the disturbed root structure of any transplant and cause existing stems to produce weak growth or die (in some cases the entire plant will die). Trimming most, if not all stems off, from a woody peony before planting is highly beneficial for proper establishment. Cutting away the woody stem structure may or may not destroy buds that would bloom the following year, but will also ensure that the plant survives and produces proportional stem to root structure after transplant.

Seedlings



“Seedling” under number at Solaris Farms which will not be sold

In the peony world, a seedling is any plant which has not had its name registered with the International Cultivar Registration Authority. The age or availability of a plant designated as a “seedling” does not correspond to its status as a seedling, only that it is unregistered. There are many plants available commercially which are not registered and are considered garden named. Naming unregistered plants without registering them creates numerous problems. Most notably, unregistered plants in commerce may create duplication of names assigned to different plants, have no long-term reference for further research and may be of lesser quality. Solaris Farms has propagated and sold a number of unregistered plants which are useful to collectors and hybridizers, but will not sell seedlings which are culls from our hybridizing programs. We believe sellers of unregistered plants (seedlings) should make note of their status and supply an assigned seedling number for future reference. Our advice is “buyer beware” when purchasing seedlings, as many outlets of these plants are selling plants which are not of registration quality and are often not trialed for

reliability and beauty. To view and learn about registered and historic peony cultivars, visit the American Peony Society’s [PEONY REGISTRY](#). The “Registry” is freely available to the public and is searchable and sortable.

- Cultural Details -

Planting Time

The best transplanting time for woody peonies is fall, once next year's dormant buds have been made. Roots are triggered to grow by cooling soils in early fall and will continue long after the plants have lost their foliage. Bare root plants from commercial sources are preferred and usually perform better than their often-available counterparts – containerized plants.

Site Selection

Selecting an appropriate site is one of the most important factors in growing woody peonies successfully. Since tree peonies do not like to be disturbed, select a planting place that will accommodate the plant for many years without movement. Remember to allow plenty of space around the plant since in several years it will become much larger in height and width.

A site that **drains well and does not remain wet** at any time of the year is of great importance. Keep plantings well clear of automatic sprinklers, such as those to keep lawns green and growing. Do not plant near downspouts and roof driplines. Constant water application (outside of drought periods) is often detrimental to woody peony health. Once established, woody peonies are extremely drought tolerant and prefer soils which remain on the dry side. It is especially important to know the winter season's site properties, as this is the period in which many soils may become saturated and damage the woody peony's root system or cause it to die. Typically, gardeners do not notice winter soil conditions due to inactivity in the garden, thus extra attention is required to the site before planting. Winter kill from excessive moisture is one of the most common reasons for woody peony plant failure.

The site should also be **free of competition** from other plants, especially trees and shrubs, which may impact woody peony plantings negatively or prevent good bloom. Select a site which is well away from large perennial plants for best results. Crowding from other smaller plants may also cause lack of air movement, resulting in diseased foliage. All said, woody peonies respond best to having space around them. Lilacs (and some other shrubs) are especially problematic due to root systems which compete with those of peonies for the same nutrients and moisture – avoid planting near Lilacs. Certain tree species, such as Black Walnut, may inhibit plant growth in proximity to them. Peonies appear to be tolerant of Black Walnut, but may be impacted to a certain degree.

The planting site should be one not subject to late **spring frosts**, as frosts may prevent young flower buds from developing further. Low sites are most often impacted by late frosts. Many gardeners new to peonies ask: "Why do the buds on my peony stop development when very small?". Buds which have received a hard freeze after spring emergence may not grow beyond a juvenile state due to cell damage. These buds will generally look viable and remain green through much of the growing season, but will show no progression in growth. Certain cultivars are prone to bud damage; thus, some variability will be experienced from cultivar to cultivar.

The site should **receive full sun or very light shade**. The placement should receive at least one-half day of sun (preferably morning sun vs. afternoon sun) or shadier locations should have bright filtered light. Peonies would prefer full sun all day, but the flowers last longer with some shade. Counter to some information sources woody peonies do not grow well in shaded locations (at least heavily shaded). If planted in excessive shade, growth will be slowed and bloom will be sparse or none existent. Gardens located in areas with hot summer climates may need to provide additional shade to protect the leaves from burning during the heat of the day, thus regional variation in plant treatment may need to be implemented.

Soils

Soils which support best growth have a near neutral pH (6 to 7). Clay soils are often highly fertile and may support excellent growth, but may hold excessive water and damage roots in wet seasons. Most native soils which are well drained will be suitable for growing woody peonies. We've noted soils made up of clay mixed with gravel and stone grows woody peonies very well in the eastern United States – testament to their adaptability. Avoid soils with fresh and excessive organic material included, as this may promote disease. Soil predominantly composed of sand is not particularly fertile and peonies will not prosper. Many information sources have repeated information stating woody peonies must have highly organic, friable soils to prosper – false! Woody peonies do very well on most mineral soils, but do perform best if soil is not compacted heavily, this is reason to incorporate organic amendments. Soils overlying limestone are excellent for growing woody peonies since the soils contain useful micronutrients for plant growth and help to provide a neutral pH.

Soil properties are extremely difficult to alter and generally no amount of amending will change pH and overall structure widely, for an extended period. Woody peonies have extensive and wide-ranging root systems, thus amendments to the initial planting hole will likely have minimal long-term impact on plant performance. Again, if amending soil for any peony planting, do so widely and deeply to the entire planting area. A soil test is recommended before amending soils. Most county extension offices will supply instructions or provide sources for soil tests. Soil testing can also be contracted through many agricultural companies at generally low costs. If soil pH is low, additional liming (limestone) may be recommended to bring soils to a more neutral state.

Planting New Arrivals

Start by digging a hole which will easily accommodate all of the peony's roots. We recommend using as much native soil as possible and avoid the use of amendments, unless necessary. As noted earlier, amending soil within the hole only may create a "BIRD BATH EFFECT", which is basically a depression filled with foreign material, holds water and does not integrate with surrounding soil. If your soil needs to be amended, do so broadly – beyond the hole and thoroughly mix amendments with the native soil.

Woody peonies may be oriented into the planting hole in any number of ways. Stems do not need to be upright (perpendicular to the soil surface), they may be planted so stems are on angle or even parallel to the surface soil. We prefer and an angle planting of about 45 degrees to the surface. Do not squeeze the plant into the hole, as the roots may begin to grow and push the plant out of the ground. Grafted plants should have the graft union buried at least 4" to 6" below the surface. Deep placement encourages new own root growth from subsoil stems and also protects the plant from adverse environmental changes. Most woody peony plants arriving by mail order will have a planting depth marked on a stem, which is helpful if your climate is similar to the grower/shipper. Garden climates which are colder or have more difficult winter seasons, than the seller's climate, may need to seat plants deeper than indicated by the marking depth the supplier provided. The coldest areas should make sure plenty of stem is below the soil surface, to insure survival. Tree peonies are best planted much deeper than their herbaceous relatives–this often promotes growth from below ground and creates a fuller looking plant that is not easily killed if stems are lost due to weather, animal damage or human carelessness. It is not usual for newly planted woody peonies to have an inch or less of stem showing above the ground and should cause no concern. After placement of the plant in the hole, fill the planting hole approximately 3/4 full of soil and water thoroughly, so that all air pockets are removed. Proceed to fill in the remainder of the hole with soil and add water as you fill. Add additional soil over the planting to create a low mound. The low mound sheds water away from the peony and prevents pooling of water over the peony as the planting settles. Firmly press down the soil above and around the plant with your hands. In most instances further watering is not advised, unless drought conditions are prevalent in the area. We no longer advise the use of mulch due to climate change impacts on winter gardens. Mulch may create wet conditions during periods of the year when plants are no longer growing (winter). If mulch is used, keep it away from the plant (at least 16 inches or more). Pine boughs may be laid over the planting during the first winter season and are a good winter stabilizing structure to prevent frost heaving or inconsistent freezing and thawing of soil.

Water

Woody peonies are not heavy water users and are drought tolerant once established. It is beneficial to keep soil evenly moist during their major growth periods - spring, late summer and fall. During very warm periods in early spring, leaves may wilt a bit (especially new plantings), this is not always an indicator that the soil is dry, but rather that plants cannot move enough water from their roots to their leaves. In such cases adding additional water to the planting will not help the plant and may actually cause damage to the root system. Usually, wilting subsides after the heat of the day passes and plants will recover. Only water when necessary and do so by watering plants at their bases slowly and deeply. Avoid overhead watering, as this may encourage foliar disease or cause sun burn damage during daylight hours. Overly wet soils are one the woody peony's worst enemy, thus creating this situation should be avoided at all costs.

Automated irrigation systems may be problematic, since greater amounts of water may be supplied than the peony can use. These systems can create prolonged wet soil situations and cause disease issues. Typically, these systems are successful for lawns and other shallowly rooted plants, but may be used in very dry climates if installed and monitored correctly for peony cultivation. Irrigation can a form of "scheduled watering", which typically is not well suited to most plants, since the environment dictates the amount of water being used by the plant. Scheduled irrigation can be successful in soils which drain well and/or in areas in which drought is prevalent, but soil conditions will require monitoring for best results.

Avoid planting where water is concentrated in the environment. Examples: roof driplines, down spouts, water spigots, low gardens, swimming pool/pond overflow areas, spring runoff collection points, etc...

Diseases

Woody peonies are generally disease-free plants, but can be subject to certain problems brought on by poor air circulation, wet soil conditions, overhead watering and over fertilizing. Climates which are prone to cool-wet periods are more likely to experience disease issues. Any kind of damage to stems or leaves may provide entry points for disease organisms. Most damage to woody peonies occurs in winter/early spring during freeze thaw cycles. Thus, being observant in spring to remove damaged, or weak growing stems is an important measure for disease prevention.

Tree peonies, like all peonies, can be infected with botrytis, a common fungal disease. Botrytis may appear as black spots on the foliage or black/brown sunken areas on stems. Wet and cool conditions, as seen in spring in the northern tier, can cause this fungus to be problematic and the best treatment is prevention. Keep the plants well-ventilated and remove diseased portions of the plant upon discovery. Make sure to remove diseased plant parts from the garden to prevent its spread. Commercial fungicides may also be used for prevention (copper sprays tend to be most effective). Suffruticosa Group woody peonies are the most susceptible to botrytis and other fungal diseases, while the lutea hybrid group are least impacted.

Garden clean up in fall is an important part of keeping all peonies healthy. When foliage begins to go dormant is the time for stems to be stripped of leaves and removed from the garden. Any weeds or neighboring plants which have encroached on the peony can be removed at this time as well. Note: Peony foliage in the fall often appears to be diseased, but for the most part, their appearance is simply indication that all usefulness to the plant has passed for the year.

Viral diseases are beginning to show up with greater regularity due to a number of factors. Typically, most virused plants contract the disease via tools used in propagation, but may also be infected by insects and nematodes. Inexpensive imports from overseas are most often afflicted with viral infections, a good reason to purchase plants from reliable sources which do not tolerate diseased plants in their collections. USDA inspectors have little to no tolerance for viruses in



Seasonal dormancy beginning in September - not diseased

the plants they inspect, thus commercial sources who grow their own plants within the United States typically do not distribute infected plants. Peonies tolerate viruses very well and most often continue to grow without hinderance, but the presence of infected plants in a garden may allow for other plants to become infected. Thus, removal of infected plants is the only method of control for gardeners concerned with such infections. Symptoms of viral infections are usually yellow patterns on leaves under certain conditions. Not all leaf distortions or color patterns are viral in nature and other factors may be at work causing such manifestations (soil conditions, drought, fungal infections). Most peonies carry viruses, some benevolent, others detrimental. We recommend care when attempting to identify virus infections, since many plants may exhibit “false” symptoms and the wrong conclusion may be reached. Thus, plants with suspected viral infections should be tested by a lab specializing in virus testing. Most state agricultural extension offices can recommend such testing labs.

Rabbits and deer during early season may nip off soft emergent growth, but this damage is typically not life threatening to the peony. Rabbit damage is can be identified by a clean cut through stems and the stems can be found close to the origin plant. Rabbits do appear to actually eat peonies. Deer grazing can be identified by rough or ragged areas on the stems, since these animals bite and pull shoots. Again, deer do not appear to consume the plant material they pull away.

Fertilizing

Only apply fertilizer if it is needed. Woody peonies take time to establish and during first few years of their growth in the new garden no fertilizer should be applied. Supplying fertilizer in situations in which it is not needed may cause root damage and ultimately create poor results. Fertilizing may be necessary at some point, in certain locations. Avoid high nitrogen fertilizers as this will cause excessive foliage to be grown at the expense of flowering and may promote disease on soft new growth. Most peony growers recommend fertilizers suitable for bulbs as a good choice, but a soil test should be made if any greater needs may be present. Any fertilizer application will not create immediate results and often takes a year or more for results to be observed. Avoid the use of manures around peonies as there is evidence such practices promote the growth of disease organisms.

Winter Protection



No winter protection on established plants should be necessary in climates which do not fall below -20°F. Woody peony stems are the most often impacted by winter variables since they are exposed to the air, which changes temperature quickly with frontal system arrivals and departures. Stem death may be caused by a number of factors and cold temperatures alone may not be a significant cause. Windy locations may be problematic, since dry air in winter may cause desiccation of exposed parts in some areas of the United States. Root systems are less impacted by winter temperatures since soils cool and warm much more slowly. Each cultivar group has different tolerances for low temperatures and individual cultivars will vary as well. For areas which become colder than -20°F, some winter protection may be required for certain or all cultivars and groups. Winter protection is generally achieved through seasonal mulching or configuring a structure

which breathes yet insulates. There are many gardeners growing woody peonies in extremely cold areas who construct protective devices and are very successful. A little ingenuity will serve you well if there is a concern with low winter temperatures. SEE: Cultivar Groups for further information.

Pruning

Do not cut down tree peonies in the fall like herbaceous or intersectional peonies are treated, since the woody stems in some cases, carry some of the next year's vegetative buds and flowering buds. If accidentally cut to the ground, like their herbaceous counterparts, correctly planted woody peonies will grow new stems from below the soil surface the following season. Cutting woody peonies to the ground is a tactic that is employed by experienced growers to restore youthful plant habits to older plants or to cause new stem growth on damaged plants. Very old plants which are cut to the ground will take time to recover, but this can accomplish rejuvenation.



Old stem producing weak growth - remove entire stem

From time-to-time dead wood will need to be cut from the plant to keep them looking good and this is best performed as plants leaf out in the spring. Removal of weak growing, diseased or damaged stems should be performed at the same time. Some gardeners will want allow weak growth to remain on established plants – this is a mistake and often slow the production of new healthy stems. Remove any stem which carries less than optimal foliage or appears small and distorted. Always cut stem tissue to a point in the stem which is healthy, so the plant does not continue to struggle with old structures which may sap energy or transfer disease to new growth. In Wisconsin and other like climates, winter stem kill/damage is high, seldom resulting in very old stems. Thus, yearly pruning of dead/damaged stems is heavily practiced, but with excellent results. See “**Environmental Stem Loss**”. While the loss of stems can cause concern, seldom are plants impacted negatively long term. Woody peony plants are long-lived but their stems are often not and pruning will encourage new formation of healthy stems in the following years.

In certain locations/regions in which woody peony growth is exceptionally vigorous, dense growth may need to be thinned to prevent disease issues. In such instances stems may be pruned away to allow for better air movement within the shrub and create a taller – wider shrub. In warmer climates with stable seasons, woody peonies may become quite tall and retain old wood.

Pruning may also be performed to create a more aesthetically pleasing specimen in the garden or landscape. Tall plants with 1 to 3 trunks can be created by removing suckers or small stems along desired stems and from the base of the plant during the winter season. Zones 6 and 7 often support this type of pruning best, but stable winter conditions certainly play a role in the success of this practice. This is not typically practiced in very cold climate growing locations due to winter stem loss (difficulties keeping large trunks alive). In Wisconsin, this type of pruning is not successful on most cultivars.

Environmental Stem Loss



Dead growth from stem death



Stem death area revealed (cream color alive, brown dead)

A commonly observed issue in spring is the loss of newly forming growth before leaves are expanded (sometimes afterward). This is often the result of stem damage below the area of the expanding shoot(s) from freeze-thaw cycles while woody peonies are moving moisture from roots to stems during variable winter months. The dead stems are the result of hydrated cells bursting after freezing. Warm periods followed by low temperatures during the winter

months are generally the cause of this situation. Often enough, the supporting stem will have an area which has died and is not the result of disease or a late freeze, but rather from the freeze-thaw damage. The dead area will be concealed below the bark at some point on the stem and is usually not readily observable without scraping away the bark. Sometimes an entire stem is dead and newly forming top growth is making use of any remaining moisture in living tissue above the dead area. Our practice often involves removing the entire stem or pruning the dead portion of the stem to living tissue found lower on the stem. Susceptibility to stem loss is cultivar specific and typically is of little consequence to the overall health of the plant.

Climate Change

Climate change has made gardening more challenging in recent years and greater care in planting has become paramount. The months of December/January/February/March have been especially problematic in the northern tier states in recent years, with large swings in temperature and winter rain. While we may not notice, soil that thaws in the winter/early spring is able to absorb water, which then refreezes around the plant's crown and ultimately smothers it. A good way to prevent this problem is to cover plants after the ground has frozen in early winter with pine boughs. The boughs will act as an insulator and not allow soil to thaw and take on more water—a good thing for plants. Mulch is no longer recommended as it holds water and contributes to plant death. Summer droughts, floods and extreme temperatures may also damage our beloved plantings. Careful observation of your gardens and their special properties is important for the plants which reside there. With climate change in mind make adjustments to your gardens which lessen the impacts of climate events for best results. There is not a “recipe” which will fit all for growing any plant, thus a willingness to take necessary steps can result in a better outcome. All said, if the basic needs of woody peonies are met, they are not difficult to grow well.

In summation, tree peonies are wonderful long-term additions to a garden. Some patience will be required while the plants mature, but in the long run they are extremely rewarding and will likely become one of the ‘favorite’ plants in the garden. Try them, you won’t be disappointed.

For further information about woody peonies, we recommend visiting the American Peony Society’s website at: <https://americanpeonysociety.org/learn/woody-peonies/#overview>. Better yet, join the American Peony Society for more in-depth information.

-Cultivar Groups-

Woody peonies can be categorized into a number of main groups. Each group has unique floral characteristics, plant habits, climate tolerances and cultural needs. Most can be grown in USDA Hardiness Zones 4-8, but other climate variables (other than temperature) may impact their growth.

Suffruticosa Group

Woody Peonies have been grown for centuries in China and Japan. These plants are mainly from a man-made hybrid swarm, often referred to as *P. suffruticosa* (not an actual species). As a man-made hybrid swarm, *P. suffruticosa* does not occur in nature. Correctly, these suffruticosa hybrid cultivars belong to the “**SUFFRUTICOSA GROUP**”. Suffruticosa group plants are derived from 4 to 6 woody peony species, which comprise the Subsection *Vaginatae*. Ancestral species of these hybrids include: *P. cathayana*, *P. decomposita*, *P. decomposita* sbsps. *rotundiloba*, *P. jishanensis*, *P. ostii*, *P. qiui*, *P. rockii* sbsps. *rockii* (*linyanshanii*) and *rockii* sbsps. *atava*. Suffruticosa Group cultivars may be further divided into regional groups to express their selection origins. Cultivars selected in different climates will have unique traits which directly relates to their ability to grow in American gardens. All Suffruticosa Group cultivars will express flower colors of white, red, pink and blends of these colors – there are not yellow or coral colored flowers found in this group (see *Lutea* Hybrids). Read more...



Chinese Suffruticosa cultivars...

In China, Suffruticosa Group cultivars are referred to as “Mudan”. Suffruticosa Group cultivars originating from China have typically been the most available at low prices. Unfortunately, the Chinese Suffruticosa cultivars were selected to grow best in semi-arid conditions with reliable seasonal changes. - making them a poor choice for most American gardens. Most American gardens are in continental climate areas, which are subject to highly variable and adverse conditions, making Suffruticosa Group plants from China poor choices. All are certainly beautiful, but have caused many American gardeners to regard woody peonies as difficult to grow. A few cultivars may be grown in continental climates successfully, but they typically are not vigorous, prone to disease and never reach a large size. This group of plants may be more reliably grown in dry coastal regions of the U.S. which are protected from the large climate inconsistencies found in continental areas of our country. In China this group is referred to as “Mudan”. Not recommended for most American gardens.



Japanese Suffruticosa cultivars...

In Japan, *P. suffruticosa* cultivars are referred to as “Moutan” (Bouton). They are among the most cherished plants in their nation and should receive much greater attention in American gardens. Many cultivars available are historic hybrids that may be hundreds of years old, giving testimony to their durability. The Japanese Suffruticosa selections are more tolerant of climate inconsistencies and wet conditions than the Chinese Suffruticosas, but may be damaged or killed in unusual seasons. However, there are many choices to suit the diverse American gardener's needs. The Japanese Suffruticosa selections are a better choice for American gardens which suite their climate needs and have well drained soils which do not stay wet for extended periods.



American Suffruticosa cultivars...

Obviously, cultivars hybridized and selected in our own climate are more likely to prosper in our gardens. These cultivars in most instances are a better choice, but to date are not widely available. Availability is most often only through select specialty growers and will continue to be the case until greater propagation activity is practiced within the United States. The American Suffruticosas are a much more diverse group, due to the incorporation of more diverse parental material and plants often become larger than those developed overseas. However, these plants also do best in highly drained soils and in locations that are not subject to many wet days.

All Suffruticosa Group plants generally produce very large flowers of light substance (crepe paper is a good comparison). They typically bloom from stems that are a year or more in age (old wood) and are vigorous growers when sited properly. This group is the first to bloom, but a number of cultivars bloom with the later flowering types. Most will attain heights of 3 to 5 feet in areas in which stems are not lost due to disease or winter conditions, although larger growing plants are in development by a few hybridizers. Foliage is quite ornamental and they make wonderful landscape plants. Plants sited in areas where flowers are shaded from the sun during the hottest part of the day will help the blooms last longer.

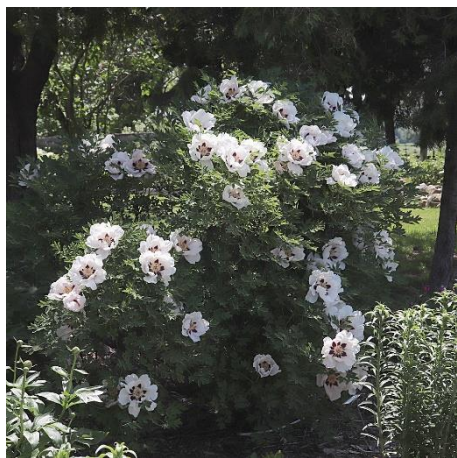
As noted above, Suffruticosa Group cultivars are the most commonly available and grown woody peony. However, this woody group may not be a good choice for all gardeners in the United States. Plants in this group may be grown in USDA Hardiness Zones 4-8 and the woody stems will usually survive winter temperatures that fall to no more than -20F. Wet winters which have many freeze-thaw events may impact the survival of stems and the Japanese and American cultivars are more resilient to these conditions than Chinese origin plants. Plants may routinely lose old stems from winter kill, but are replaced by young vigorous growth from below the damaged area.

Areas of the United States which experience cool wet springs cause the most difficulty for this group of plants. A fungal disease (botrytis) commonly attacks new growth on old and new stems, causing the afflicted stems to wilt or simply fail to grow. Protracted spring time periods that are characterized by cool, cloudy and rainy weather are likely to be most problematic and cause disease. Removal of diseased stems, by cutting stems well below the area affected is recommended as soon as possible after detection.

Planting Suffruticosa Group cultivars in areas that have good air movement will help to keep them healthy. Avoid windy locations, since stems are easily broken. Plants grow best in full sun, but flowers last longer if lightly shaded during the hottest part of the day.

Cultivars produced in Japan and the United States are the best candidates for American Gardens, as they were selected in more rigorous climates. Example cultivars that have done well in Wisconsin are: 'Hana Kiso', 'Shima Nishiki', 'Shima Daijin', 'Ruffled Pink Petticoats', 'Shichifukjin', 'Kamata Fuji', 'Krickles', 'Toichi Ruby', 'Shimane Chojuraku', 'Renkaku', 'Lavender Grace', etc...

Suffruticosa – Rockii Influence Hybrid Group



Paeonia rockii is a species that originates in colder areas of China and is the most stem hardy of all the woody peonies. Nearly all Suffruticosa Group plants have *Paeonia rockii* in their ancestry, however many have lost *P. rockii*'s finest traits due to genetic dilution. Crossing Suffruticosa Group cultivars back to *P. rockii* and its more recent hybrids, produces plants with the desired *P. rockii* traits. There are numerous Chinese cultivars and a growing number of American and European representatives of this group. *P. rockii* is easily hybridized with plants from Suffruticosa Group cultivars and many of the resulting plants retain its hardiness, as well as, other desirable plant and floral characteristics.

Note: Cultivars in this group are often incorrectly referred “Rockii cultivars”. They are not the species, which is quite rare in cultivation. Any plant resembling *P. rockii* which has a flower color other than white, will have other species from the Subsection Vaginatae in its ancestry. Even the many white cultivars commercial available are usually of the mixed origins of the Suffruticosa Group.

Cultivars from this group are well suited for the coldest growing zones in American gardens. Most cultivars show no winter stem kill, even after temperatures that fall into the -30°F range. Like suffruticosa cultivars they bloom from buds formed on older wood, thus stem hardiness is important. Older stems on a number of cultivars may reach 6 feet in height. Plants are often wider than are high and over time will become quite large.

Plants are highly adaptable, but are a bit slower to establish than other woody peony groups. Like all woody peonies they prefer soil with excellent drainage and are quite drought resistant once established. They make excellent landscape plants and are the least demanding of the woody peonies.

Flowers may be double, semi-double or single in form, but all will likely have the characteristic dark basal flare on each petal. Many cultivars are scented with a sweet rose-like fragrance. Born in profusion, flowers benefit from some light shade to prolong their life (plants do best in full sun).

Many fine cultivars originate from China, but not all of them have consistent form and plant habits. Thus, some research will be needed to determine quality.

Cultivars that have done well here are: Angel Emily, Baron Thyssen Bornemisza, Lavender Hill, Zi Mei Cha Cui, Yin Zhuang sug uo, Dojean, Rock's Variety (Joseph Rock), Angel Choir, Zi Yan, Souvenir de Ingo Schiewe, etc...

Lutea Hybrid Group



The lutea hybrids are comprised of newer cultivars initially produced from crossing plants included in the Subsection Delavayanae with Suffruticosa Group cultivars. The many-colored forms from the species: *P. delavayi*, *P. lutea* and *P. potaninii*, were used to create hybrid plants which express a wide range of flower and plant characteristics. Most notably, any hybrid with yellow and blended coloration arises from the use of the species in the Subsection Delavayanae. The origin species from the Subsection Delavayanae may be tender in Wisconsin and not easily grown without special considerations, but the hybrids have greater tolerances for cold winter temperatures and hot summer temperatures.

The Lutea Hybrids tend to be shorter growing than the other woody peonies and often produce more stems from below the ground (a good thing). Leaf structure varies widely from cultivar to cultivar and is often quite ornamental. The Lutea Hybrids have the widest range of color, ranging from deep red, pink, lavender, yellow to coral and orange blends. Flower forms are as diverse as their colors, exhibiting single, double and semi-double flowers, with a variety of petal shapes. Many of the original hybrids available today were produced in France and United States. A.P. Saunders (United States) did much hybridizing work to produce the F1 plants that have been further used to create advanced generation lutea hybrids.

Early cultivars derived from crosses of (*P. delavayi/lutea/potaninii* x *Suffruticosa*) have the least hardy stems, but progeny of these plants have proved hardier and are excellent choices for the garden. Lutea hybrids have somewhat less cold tolerant stems than the Suffruticosa group cultivars, but can be successfully grown in Wisconsin in most locations (USDA Zone 4, or higher). During highly variable winters, above ground stems are often completely lost, but are replaced the following spring with vigorous growth from below ground level. The new growth often produces good bloom and plants show no overall affect from the prior poor winter conditions.

Plants are more tolerant of cool, wet spring conditions and are more disease resistant than Suffruticosa Group cultivars. Due to disease resistance, this group is especially important for areas that experience these conditions (upper mid-west and the Pacific Northwest).

Flowers have greater substance and lasting qualities than those of the other groups. Some are fragrant, with a vanilla or citrus scent. Again, the flowers will last longer if given light shade, but plants appreciate full sun. Flower color can be quite variable from year to year and on different soils, thus don't expect to see the same expression each year or in different locations. Many Lutea hybrid cultivars produce more than one flower per stem and have extended bloom periods due to side buds opening at different times.
