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Figure 1. Single form peonies have functioning stamens that are pollinator-friendly. (Esther McGinnis, NDSU)

Peonies:

A North Dakota Favorite

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EXTENSION

Peonies are among the most graceful and picturesque perennials for North Dakota. They include a variety of flower forms with beautiful colors and attractive foliage that remain long after the flowers have faded.

In North Dakota, peonies are prized for their delicate and fragrant blooms. Flowering in June, they signal that summer has arrived. Despite their fragile appearance, they are one of the hardiest and longest-lived perennials. North Dakotans can grow peonies all the way to the Canadian border.

Three species or hybrids are commonly found in garden centers. The common peony (*Paeonia lactiflora* hybrids) is the most popular and has many different forms and colors. Different forms include:

- **Single:** A single row of petals encircles bright yellow stamens that produce pollen (Figure 1).
- **Japanese:** A row of petals surrounds modified stamens (stamenoides) in the center that do not produce pollen (Figure 2).
- **Semi-double:** Several rows of petals encircle the stamens in the center
- **Double:** Multiple rows of petals cover the center. Stamens may be completely absent or miniscule (Figure 3).
- **Bomb:** Looks like a double but the large outer petals are more prominent.

The diminutive fernleaf peony (*Paeonia tenuifolia*) is prized in North Dakota for its fine-textured foliage and dark red flowers (Figure 4). This species is more difficult to propagate at the commercial level and therefore is slightly more expensive. Fernleaf peony is also more sensitive to wet soils and requires good drainage.

The third peony grown in North Dakota is the Itoh peony, a hybrid between the common peony and a tree peony. Despite having a tree peony as a parent, the Itoh peony dies back to the ground each winter and grows new shoots in the spring. Itoh peonies are known for their large flowers and interesting foliage. 'Bartzella' is a yellow-flowered cultivar that is grown in the region (Figure 5).

Landscape Use

Peonies can serve as an interesting accent along a shrub border, fence or wall; if planted close together, you can create an informal hedge effect. Multiple peonies can form a shrub-like backdrop for annual flowers in an ornamental garden. Peonies can substitute for low-growing shrubs in locations in which snow may be a problem because the herbaceous foliage is removed in the fall.

Peonies combine well with other perennial flowers by providing early season color during June. Plants that pair well with peonies include irises, catmint, coral bells and June-blooming alliums.



Figure 2. 'Plainsmen' is an example of a Japanese peony. The stamens have been replaced with structures that do not produce pollen.
(Esther McGinnis, NDSU)



Figure 3. 'Kansas' is double form peony.

(Kor!An (Андрей Корзун), CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons)



Figure 4. Fernleaf peony has a completely different foliage and a compact appearance.

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Figure 5. 'Bartzella' is one of the most popular Itoh peonies.
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Soils and Where to Plant

Give careful thought to planting location. Once mature, peonies are best left undisturbed. They will thrive for decades with minimum maintenance if planted in a suitable spot. To protect the delicate blooms, shelter from winds is critical.

Peonies require well-drained, fertile garden soils. Avoid planting in low spots. Soils can be amended with compost or peat moss prior to planting. Peonies do not compete well with turfgrass or tree roots for water.

Plants will flower best if they receive at least six to eight hours of sunlight per day. Encroaching shade from growing tree canopies will become problematic over time. Shade reduces the number of blooms. Furthermore, powdery mildew is more prevalent in shade and in areas of low air circulation.

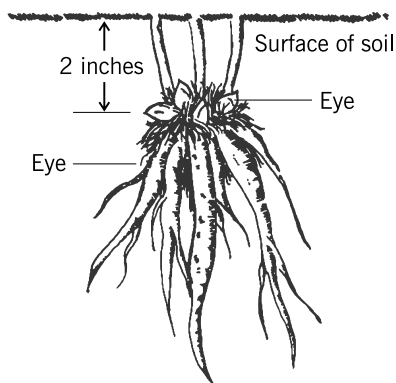
Planting Time, Spacing and Cultivation

Late August through early September is the best time for planting bare-root peonies in North Dakota. Early fall planting allows roots to become established before cold weather. Three to five healthy buds (eyes) per root are desirable.

To maximize root development, prune off all flower buds in the year after planting. Plants may be allowed to flower in the second year. By the third and fourth years, the plants should flower prolifically.

In contrast to bare root, peonies purchased in containers are best planted in the spring or early summer. As described above, make sure that no more than 2 inches of soil covers the eyes.

Figure 6. Not more than 2 inches of soil should cover the top bud. Peonies set deeper than 2 inches may produce excellent foliage growth but often fail to bloom satisfactorily.



Healthy plants in fertile soil may grow and bloom for 50 years or more. Plants should be spaced 3 to 4 feet apart to accommodate growth over time. Closer spacing will necessitate transplanting. Apply a 2- to 3-inch layer of leaf or straw mulch in the fall after the ground freezes the first year for newly planted peonies. Remove this mulch in spring.

Propagation

Peonies do not require division to reinvigorate the plant and are best left undisturbed. Plants that are divided may take 2 to 3 years to recover and bloom well.

However, some people desire to increase the number of plants by dividing them. In early September, cut the stems near ground level and dig around the roots carefully with a spading fork. Shake the roots to remove loose soil and then wash off most of the soil. Removing the soil helps reveal natural crown cleavage areas for less damage to the plant's fleshy roots. Each division should have three to five healthy eyes (buds) attached to three or four thick roots. After replanting, mulch the area to provide winter protection.

Fertilization

Peonies require high fertility to sustain growth. Fresh or aged manure should not come in contact with the peony roots or shoots. Such contact may decay the fleshy roots. However, composted manure may be applied to the soil surface in a 1- to 2-inch layer.

Work a couple of tablespoons of 10-10-10 fertilizer into the soil around each established plant in early spring. Keep the commercial fertilizer 6 inches away from the stems of the plant and then water to dissolve the fertilizer.

Cutting Blooms and Staking

Cut blooms for bouquets as soon as the outer petals unfold. Do not remove large amounts of the leaves when picking flowers. Leaves should be left on the plant to manufacture food for the next season's growth and bloom. Place blooms in a container as soon as they are cut. Snip the stems $\frac{1}{2}$ inch shorter under water. This prevents air bubbles in the end of the stem and lets the blooms last longer.

Peonies in full flower often are top-heavy, especially after a rain (Figure 7). Prevent unsightly flower drooping by staking the plants. Peony hoops (thin wire hoops fastened to three or four stakes) are inexpensive to purchase. Tomato cages are an acceptable alternative. These should be installed in early May before the plants get too large.

Remove spent blooms and stems to the foliage line as flowers wither.



Figure 7. Plants should be staked to prevent lodging.
(Esther McGinnis, NDSU)

Why Peonies Fail to Bloom

Peonies fail to bloom satisfactorily for several reasons, including being planted too deeply, too little sun, diseases (such as botrytis and viruses) and insects (thrips).

If your peonies have been planted too deeply, you may accelerate flowering by resetting them to the proper depth. But if they have been in place several years, they may be nearly ready to bloom because the plant “lifts” itself a little each year as it grows.

Shade from buildings or trees may result in weak plants that fail to produce flowers or bloom sparsely. If this is the problem, select a new site in full sun. Shade that did not exist at planting time could develop during a 20-year period, gradually creating problems with reduced blooms in the last few years.

Botrytis blight is a fungal disease that overwinters on dead peony leaves, stems and roots. The easiest control is sanitation, which means completely removing the plant tops in late September or October. Bury, burn or dispose of the diseased vegetation rather than composting it.

Powdery mildew has become more common on peonies in recent years (Figure 8). This fungal disease manifests as a white, powdery coating on the leaves. As with botrytis blight, fall sanitation is important. If the disease persists for multiple years, apply a fungicide with the active ingredient chlorothalonil in spring as the new growth emerges. The fungicide can be reapplied at 14-day intervals until mid-June. Note that most fungicides are preventative. They will not cure fungal diseases and must be sprayed before the plant develops signs or symptoms in spring.

Some virus diseases may stunt and deform the growth of your peonies and cause a gradual decline. Each year, the plant



Figure 8. Powdery mildew is increasingly common on leaves. (Esther McGinnis, NDSU)

becomes shorter and somewhat discolored, and may fail to bloom. Remove such plants and destroy them.

Certain insects, such as thrips, can cause flowers to become deformed and not open. Apply an insecticide containing spinosad or insecticidal soap if thrip activity is noted. Make sure to follow the instructions on the insecticide’s label and avoid spraying when the flowers are open to prevent injury to pollinators.

Note that ants do not cause damage to the peony buds. They are attracted to the sticky material on the buds. No control is necessary.

References

- American Peony Society. 2024. <https://americanpeonysociety.org/> (last accessed June 27, 2024).
 Heger, M., D. Lonnee, and J. Whitman. 2011. Growing Perennials in Cold Climates. University of Minnesota Press: Minneapolis.

Award Winning Cultivars

Cultivar	Form	Petal Color	Hardiness Zone	Release Date	Award of Landscape Merit	Gold Medalist
‘Krinkled White’	Single	White	3	1928	2009	
‘Sea Shell’	Single	Lilac pink	3	1937		1990
‘Topeka Garnet’	Single	Dark red	3	1975	2009	2012
‘Do Tell’	Japanese	Pink outer/rose center	3	1946	2009	2004
‘Gay Paree’	Japanese	Rose-pink outer/cream center	3	1933	2014	2023
‘Buckeye Belle’	Semi-double	Dark maroon	3	1956	2009	2010
‘Coral Charm’	Semi-double	Coral peach	3	1964		1986
‘Coral Sunset’	Semi-double	Coral rose	3	1965	2009	2003
‘The Mackinac Grand’	Semi-double	Red	3	1992	2012	2013
‘Paula Fay’	Semi-double	Shocking pink	3	1968	1988	
‘Pink Hawaiian Coral’	Semi-double	Salmon pink	3	1981	2009	2000
‘Angel Cheeks’	Bomb	Light pink	3	1970	2010	2005
‘Many Happy Returns’	Bomb	Red	3	1986	2009	2007
‘Red Charm’	Bomb	Red	3	1944		1956
‘Amalia Olson’	Double	White	3	1959		2011
‘Duchesse de Nemours’	Double	White	3	1856		
‘Bowl of Cream’	Double	Creamy white	3	1963		1981
‘Kansas’	Double	Watermelon red	3	1940		1957
‘Nick Shaylor’	Double	Blush pink	3	1931		1943
‘Bartzella’	Itoh	Yellow	4	1986	2009	2006



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