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***Pyrus calleryana* 'Bradford'**  
Callery Pear  
Rosaceae (Rose)

**Type** Tree, woody plant

**Hardy range** 5A to 9A

**Height** 40' to 45' / 12.20m to 13.80m

**Spread** 35' to 40' / 10.60m to 12.20m

**Growth rate** Fast

**Form** Oval and rounded

**Exposure** Full sun

**Persistence** Deciduous

**Bloom Color** White

**Bloom Time** Spring

The flowers are very showy.

**Leaf Color** Green

**Fall Color** Orange, purple, red and yellow

This plant has attractive fall colors.

**Native Habitat**

Species native to China

**Crown, Branch and Twig**

This plant is symmetrical with a medium texture and has a dense crown.

This plant's bark is thin and not showy.

Branches or twigs have a thick and fibrous surface.

This plant is often grown with multiple trunks.

Branches droop and break easily.

This plant is moderately flammable.

## **Pear, Callery 'Bradford'**

**Leaf Identification**

**Type:** Simple

**Arrangement:** Alternate

**Venations:** Pinnate and reticulate

**Margins:** Crenate and serrate

**Shapes:** Ovate

**Fruit Color** Brown and tan

The fruit is dry and round.

**Environment**

This plant tolerates drought, occasional wetness and some salt.

This plant will grow in very dry to occasionally wet soil.

Suitable soil is well-drained/loamy, sandy or clay.

The pH preference is an acidic to alkaline (less than 6.8 to

**Landscape Uses**

- Screen
- Espalier
- Street tree
- Specimen

**Attributes and Features**

- Pest tolerant
- Naturalizing
- Attracts birds
- Persistent fruit
- Inconspicuous fruit
- Fruit attracts animals
- Ozone tolerant



### **Culture Notes**

Callery Pear trees are over-used in North America. They can be found in landscapes from coast to coast and north to south in ever increasing numbers. All are shallow-rooted and will tolerate most soil types including alkaline and clay, they are pollution-resistant, and tolerate drought, compacted soil and wet soil. It is a tough tree well adapted to the urban environment. Plants in containers tolerate moderate soil salt solutions up to about 4 mmhos/cm according to the saturated media extract method.

They have wonderful fall color and nice white flowers in spring. So why all the call for less use of this genus? Truth is these plants are generally well adapted to most of North America. Even if they only last 20-30 years due to poor form and weak branch attachments, they help provide attractive landscapes in the mean time. This plant is considered mostly allergy free and causes little or no allergy problems in most people. Seedlings can be seen in some regions germinating along fence rows.

Although listed as tolerant of able to grow in zones 8b and 9a in the southeastern US, most trees in these areas suffer from lack of vigor, they flower poorly, and attractive fall color does not occur every year.

'Bradford' is one of the most fireblight-resistant cultivar of the Callery Pears. Unfortunately, as 'Bradford' approach 20 to 30 years old, they begin to fall apart in ice, snow and wind storms due to inferior, tight branch structure. Prune the trees to help prevent this early in their life to space lateral branches along a central trunk. This is not easy. Skilled pruning is needed to build a stronger tree - good luck! Following canopy raising, trees usually look misshapen with most of the lower foliage removed and the lower portions of the multiple trunks showing. This tree probably was not meant to be pruned, but without pruning has a short life. I (*Dr. Gilman*) think you can see that there is good reason to plant 'Chanticleer' or another improved cultivar. The cultivar 'New Bradford' is reported to have a better form than 'Bradford', although I have not seen it yet. Sprouts often form from the base of the trunk or from roots. Sprouts below the grafts have been controlled with experimental applications of NAA applied to the trunk.

Released in 1963 by the National Arboretum, 'Bradford' was progeny of seeds brought to the US from China in 1919.

Foliage summer nitrogen content on established trees in irrigated landscapes in California ranged from 1.1 - 1.9 percent.

### **Maintain adequate mulch area**

Clear all turf away from beneath the branches and mulch to the drip line, especially on young trees, to reduce competition with turf and weeds. This will allow roots to become well established and keep plants healthier. Prune the tree so trunks and branches will not rub each other. Remove some secondary branches on main branches with included bark. This reduces the likelihood of the main branch splitting from the tree later when it has grown to become an important part of the landscape. Locate the tree properly, taking into account the ultimate size, since the tree looks best if it is not pruned to control size. The tree can enhance any landscape with its delightful spring flush of foliage. It can be the centerpiece of your landscape if properly located.

### **Tree establishment specifications**

Choose good quality trees for planting. The most common cause of young tree failure is planting too deep. In most instances, the point where the top-most root in the root ball originates from the trunk (referred to as the root flare zone or root collar) should be located just above the soil surface. You may have to dig into the root ball to find the root flare. If there is nursery soil over this area, scrape it off. Never place ANY soil over the root ball. The planting hole should be at least twice the width of the root ball, preferably wider because roots grow best in loose soil. In all but exceptional circumstances where the soil is very poor, extensive research clearly shows that there is no need to incorporate any amendments into the backfill soil. Simply use the loosened soil that came out of the planting hole. Simply planting with the topmost portion of the root ball slightly higher than the surrounding soil might still install the tree too deep - be sure to locate the root flare.

Weed suppression during establishment is essential. Apply a 3-inch thick layer of mulch to at least a six-foot diameter circle around the tree. This area should be at least two feet in diameter for each inch of tree trunk diameter and maintained during the establishment period. Apply a thinner layer of mulch directly over the root ball but keep it at least 10 inches from the trunk. This allows rainwater, irrigation and air to easily enter the root ball and keeps the trunk dry. Placing mulch against the trunk and applying too thick a layer above the root ball can kill the plant by oxygen starvation, death of bark, stem and root diseases, prevention of hardening off for winter, vole and other rodent damage to the trunk, keeping soil too wet, or repelling water.

Regular irrigation after planting encourages rapid root growth that is essential for tree establishment. Trees provided with regular irrigation through the first growing season after transplanting require about 3 months (hardiness zones 9-11), 6 months (hardiness zones 7-8), or one year or more (hardiness zones 2-6) per inch of trunk diameter to fully establish roots in the landscape soil. Trees in desert climates may take longer to establish. Trees that are under-irrigated during this establishment period (and most trees are) often require additional time to establish because roots grow more slowly. Be prepared to irrigate through the entire establishment period, especially during periods of drought.



Irrigation also helps maintain and encourage the desirable dominant leader in the tree canopy on large-maturing trees. Instead of a dominant leader, trees that are under-irrigated during the establishment period often develop undesirable, low, co-dominant stems and double leaders that can split from the tree later.

Unlike established plants, which do best with deep, infrequent irrigation, research clearly shows that recently transplanted trees and shrubs establish quickest with light, frequent irrigation. For trees planted in spring or summer, provide one (cooler hardiness zones) to three irrigations (warmer hardiness zones) each week during the first few months after planting. Daily irrigation in the warmest hardiness zones provides the quickest establishment. Following the initial few months of frequent irrigation, provide weekly irrigation until plants are fully established. With every irrigation, apply one (cool climates) to two (warm climates) gallons of water per inch trunk diameter (e.g. 2 to 4 gallons for a 2-inch tree) over the root ball only. In most landscapes that receive more than 30 inches of rain or irrigation annually, if the mulch area is maintained weed-free, irrigation does not need to be applied outside of the root ball. Never add water if the root ball is saturated.

In cooler hardiness zones, in all but the driest years, irrigation of spring- and summer-planted trees usually can be discontinued once fall color has begun. Irrigation of fall planted trees, however, should be continued until foliage has dropped from the deciduous trees in the region. In warmer climates, irrigate fall-and winter-planted trees as described for the spring- and summer-planted trees.

In drier, desert climates there is benefit to be gained from applying additional irrigation outside of the root ball area. This is best done by making a large diameter berm four to six inches high, then filling it with water so it percolates into the soil. For the first two years, irrigate twice each week through the spring, once per week in summer provided monsoons arrive, and twice each week again in fall if it remains warm. Taper off watering to once or twice each month in winter and resume twice weekly next spring. For years three to five, water twice per month in spring, summer, and fall and once or twice per month in winter. During years five through seven, water once every three weeks in warm weather and once every six weeks in winter. After this, the drought-tolerant desert trees should be able to survive on natural rainfall.

Trees with good, strong structure need no pruning at planting, except to remove broken twigs. Do not remove branches to compensate for root loss - research has shown that this can be detrimental to establishment.

#### <<spring transplant best>>

#### **Pests, Diseases and Damaging Agents**

**Pests:** Aphids cause distorted growth and deposits of honeydew. Scales can be seen on `Bradford' but usually they are not serious. Several borers may attack pear. Ambrosia beetle can attack even healthy trees; they tend to attack as trees emerge from dormancy.

**Diseases:** Slightly susceptible to fireblight when grown in the south but the damage is usually only noticed at branch tips. `Bradford' shows the best resistance to fire blight in tests conducted in the southeast of all Callery Pear cultivars tested.

