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G97-1326 Crabapples for Nebraska Landscapes

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Crabapples for Nebraska Landscapes

This NebGuide discusses the selection, care and disease possibilities of crabapples.

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Many of the diminutive flowering trees are not hardy in Nebraska. One notable exception: the ornamental crabapple tree (*Malus*). By carefully selecting the planting site and the cultivar, the beauty of flowering crabs can be enjoyed in any part of the state.

Regardless of the season, crabapples lend landscape color and interest. The winter branch pattern and bark color are as much an asset as spring's flower color.

Most crabapples mature between 15 to 25 feet tall, although cultivars as small as 8 feet or as tall as 40 feet are available. Crabapple form or shape varies from tall and narrow through oval to round. Cultivars such as 'Molten Lava' have interesting horizontal branch habits which are particularly attractive in winter.

Most crabapples have single flowers, although a few cultivars have additional petals (semi-double or double blossoms). Most crabapples flower a few years after planting. Even in the ballooning stage, before blossoms are fully open, they are attractive. Colors in the balloon stage are white, pink, or red. Once fully open, the blossoms become fragrant. The total bloom period may be as long as two weeks although wind, heat and rain can shortcultureen the blossom period. Fully opened blossoms are white, pink and dark or purplish red. High temperatures during bloom often result in less intense pink and red pigments.

Many crabapples have showy, colorful fruit. Purple, red or yellow fruit develop soon after blossoms drop. Unlike the flowers, which last only a few weeks, fruit color is effective for months, even through the winter on some cultivars. The contrast between the red fruit of 'Donald Wyman' and the yellow-orange fruit of 'Bob White' is striking. Fruit size varies from 1/4 inch to 2 inches as in 'Sugar Tyme' and 'Dolgo', respectively. While the larger-sized fruit may pose a litter problem, it also makes delicious jelly. Birds, such as the cedar waxwing and robin, feed on the smaller fruited cultivars.

Crabapples are adapted to a wide range of soil types, including heavy loams. The soil should be well-drained, with a pH between 6.0-6.8 (slightly acid) preferred. Plant them where they'll receive full sun.

Remove suckers as they develop. Water sprouts should be removed to allow air and light into the tree's center. Prune limbs before mid-June to avoid removing next year's flowerbuds.

Diseases

Although crabapples are susceptible to a number of diseases, the four of significance are cedar-apple rust, fire blight, scab and powdery mildew. Cedar-apple rust, scab and powdery mildew are fungus diseases; fire blight is a bacterial disease. All are endemic to Nebraska. Scab, cedar-apple rust and powdery mildew are less common in western Nebraska where fire blight is the predominant disease. Scab, followed by cedar-apple rust, is the major crabapple disease in both central and eastern Nebraska.

Fire blight is the most difficult to control of the four diseases. It is also the most devastating because infection of the large scaffold limbs and trunk eventually kills the tree. Scab, cedar-apple rust and powdery mildew, on the other hand, usually don't directly kill trees, but instead render them aesthetically unattractive. Repeated infection, however, makes them more prone to winter injury and general decline.

Cedar-Apple Rust



Figure 1. Cedar-apple rust. (46KB JPG)

In the spring, the first sign of cedar-apple rust is the presence of orange, gelatinous swellings with finger-like tendrils on the juniper host. Spores released from these tendrils in May and June are blown to crabapples where they primarily infect leaves, although occasionally fruits and twigs become infected. Infected leaves develop orange spots surrounded by a reddish-brown band on the upper surface. Later, the infected areas develop small brown spots in the centers (*Figure 1*). Tubular structures about 1/4 inch long project from the lower leaf surface directly below the orange spots on the upper leaf surface. The spores produced by the tubular structures complete the cycle by infecting the juniper host, which, in Nebraska, is usually eastern redcedar. Other juniper species, such as Rocky Mountain juniper, are also susceptible.

Fire Blight



Figure 2. Fire blight. (27KB JPG)

Fire blight is the oldest, most serious bacterial disease of crabapple, pear and apple trees. The disease is indigenous to North America and probably occurred on native American plants and then spread to susceptible cultivated apples, pears and woody ornamentals planted by early settlers. Fire blight has a wide host range. In Nebraska, hosts include apple, crabapple, pear, cotoneaster, hawthorn, firethorn and mountain ash.

The term "fire blight" is an accurate description: blighted branches and persistent blackened leaves appear scorched. In spring, bacteria from previous year's cankers on twigs, branches and limbs are rain-splashed, wind-blown or carried by insects to crabapple blossoms in May. Infected blossoms wilt, shrivel and turn brown. Succulent shoots of new growth and water sprouts are also susceptible. Infected twigs form a cane-like shepherd's crook at the tips and the leaves quickly wilt and turn dark brown to black (*Figure 2*). The infection advances from twigs to older branches and limbs causing localized cankers, which appear sunken, dark and wrinkled. Cankers on large scaffold limbs and the trunk eventually become cracked or creviced.

Scab



Figure 3. Scab. (45KB JPG)

Scab is most likely to damage trees in years when wet, moderate weather persists from late April to early June. Early evidence of infection are small, olive-brown spots appearing on the undersides of leaves. The spots have an indefinite, feathery appearance at their margins. Later, symptoms develop on both leaf surfaces and which sometimes look like small blisters on the upper surface (*Figure 3*). The lesions are sometimes associated with the veins and midrib of the leaf. Leaves on susceptible crabapple varieties become distorted, yellowed and are prematurely shed. Often, severe defoliation has occurred by mid-July, ruining the aesthetic value of the tree and detrimentally affecting its health. Repeated defoliation over several years may lead to the death of the tree as environmental conditions can adversely affect the already stressed tree.

Powdery Mildew



Figure 4. Powdery mildew. (33KB JPG)

Powdery mildew gains its name from the grayish-white, powdery coating consisting of fungus mycelia and masses of spores which grows on the plant leaves, shoots and flowers of infected trees. Powdery mildew occurs wherever crabapples are grown and is caused by a distinct group of fungi that attack a wide variety of plants. Damage to plants ranges from an unsightly white, powdery coating on the foliage to malformation of leaves, destruction of flowers and stunted plant growth.

On crabapple leaves, powdery mildew appears as whitish, felt-like patches on the lower leaf surface. Under humid, overcast weather conditions, mildew spreads to the upper leaf surface, eventually covering the entire leaf with a powdery, white coating of fungal growth (*Figure 4*). Leaf margins curl, causing leaves to appear distorted. By midsummer, the white color changes to grayish brown, with small black dots appearing within the fungal mat.

Effective crabapple disease management starts with planting disease-resistant varieties such as those listed in *Table I*, which eliminates the need for an annual application of fungicides. The availability of fungicides for homeowners to use against scab, cedar-apple rust, fire blight and powdery mildew is limited and may be expensive. Also, it becomes increasingly difficult to spray trees effectively as they reach their mature height. Planting disease-susceptible crabapples automatically locks you into a fungicide treatment program to maintain the aesthetic beauty as well as the health of the tree.

Table I. A selected list of adapted and disease resistant* crabapple cultivars suggested for Nebraska.			
Cultivar/Species	Fruit	Flower	Remarks
<i>S.C. baccata</i> 'Jackii'	Maroon red, sparse	White	Large tree, excellent summer foliage. Yellow and rust colored foliage in fall.
'Bob White'	Yellow-orange, gold in winter	White, pinkish red buds	Excellent floral display, but in alternate years. Best of the available yellow fruited cultivars.
'David'	Scarlet	Snow white	Every other year sparse flower display, attractive round form.

'Dolgo'	Reddish purple	White	Large, messy fruit. Grow for fruit harvest, not for ornamental use.
'Donald Wyman'	Red	White, excellent	Effective winter fruit display, attractive exfoliating bark. Good round form.
<i>floribunda</i>	Yellow with red blush	White, pinkish red buds	Good overall form, attractive fall fruit display.
<i>S.C. halliani</i> 'Parkmanii'	Red	Double pinkish white	Good fall and early winter fruit displays.
'Indian Magic'	Red orange	Pink	Apricot-orange fall foliage, attractive bark, excellent fruit display.
'Liset'	Maroon red	Rose red	Peach colored fall foliage, very attractive fruit display mid-summer to fall
'Marry Potter'	Red, abundant	White, pink buds, excellent	Attractive, spreading form. Attractive bark.
'Molten Lava'	Red-orange	White	Spreading weeping form. Yellow fall foliage. Branch structure provides winter interest.
'Ormiston Roy'	Orange-yellow	White	Deep-furrowed orangish bark. Attractive fruit display in fall.
'Prairifire'	Purple-red, attractive	Coral red, spectacular	Red tinged foliage. Orangish fall foliage.
'Professor Sprenger'	Orange-red	White, attractive	Persistent fruits.
'Red Jade'	Red, attractive	White	Spreading-weeping form.
'Sargentii'	Red, persist to early fall	White	Dwarf spreading form.
'Strawberry Parfait'	Yellow with red blush	Pink, profuse	Early red-tinged foliage. Unusual erratic upright-spreading growth habit. Good fall color. Fruit display to mid-winter.
'Sugar Tyme'	Red, abundant, persistent	White, excellent display	Good overall form.
'White Angel'	Red, abundant	White	Awkward form until mature.
<i>zumi</i> 'Calocarpa'	Red, abundant	Flowers white	Excellent flower display. Tiny red fruit attractive and abundant.
*The cultivars listed have been evaluated in a long-term field trial at the University of Nebraska-Lincoln and have shown a resistant or moderately resistant reaction to scab, cedar-apple rust, powdery mildew and fire blight.			

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