



Malus spp. Crabapple¹

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INTRODUCTION

Crabapples are best grown in a sunny location with good air circulation and have no particular soil preferences, except soil should be well-drained (Fig. 1). Root pruned trees transplant most easily. Tree size, flower color, fruit color, and growth and branching habit vary considerably with the cultivar grown but many grow about 20 feet tall and wide. A few Crabapples have good fall color and double-flowered types hold blossoms longer than single-flowered cultivars. Some Crabapples are alternate bearers, blooming heavily only every other year. Crabapples are grown for their showy flowers and attractive, brightly-colored fruit.

GENERAL INFORMATION

Scientific name: *Malus spp.*

Pronunciation: MAY-lus species

Common name(s): Crabapple

Family: *Rosaceae*

USDA hardiness zones: 4 through 8A (Fig. 2)

Origin: not native to North America

Uses: Bonsai; container or above-ground planter; espalier; large parking lot islands (> 200 square feet in size); wide tree lawns (>6 feet wide); medium-sized parking lot islands (100-200 square feet in size); medium-sized tree lawns (4-6 feet wide); recommended for buffer strips around parking lots or for median strip plantings in the highway; near a deck or patio; trainable as a standard; narrow tree lawns (3-4 feet wide); specimen; residential street tree; tree has been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or

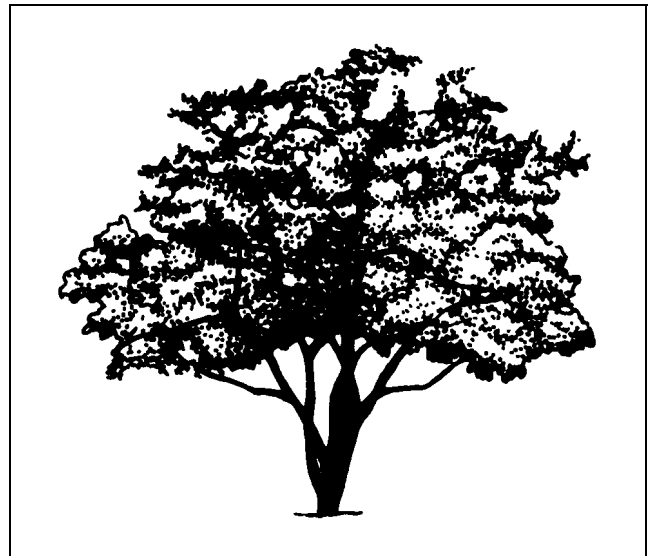


Figure 1. Mature Crabapple.

drought are common

Availability: generally available in many areas within its hardiness range

DESCRIPTION

Height: 10 to 25 feet

Spread: 10 to 25 feet

Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms

Crown shape: round; spreading; upright; vase shape

Crown density: moderate

Growth rate: medium

Texture: medium

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Figure 2. Shaded area represents potential planting range.

Foliage

Leaf arrangement: alternate (Fig. 3)

Leaf type: simple

Leaf margin: crenate; serrate; serrulate

Leaf shape: elliptic (oval)

Leaf venation: banchidodrome; pinnate

Leaf type and persistence: deciduous

Leaf blade length: 2 to 4 inches; less than 2 inches

Leaf color: green

Fall color: yellow

Fall characteristic: not showy

Flower

Flower color: pink; red; white

Flower characteristics: pleasant fragrance; spring flowering; very showy

Fruit

Fruit shape: round

Fruit length: .5 to 1 inch; < .5 inch

Fruit covering: fleshy

Fruit color: green; orange; red; yellow

Fruit characteristics: attracts birds; attracts squirrels and other mammals; suited for human consumption; no significant litter problem; persistent on the tree; showy

Trunk and Branches

Trunk/bark/branches: droop as the tree grows, and will require pruning for vehicular or pedestrian clearance beneath the canopy; routinely grown with, or trainable to be grown with, multiple trunks; not particularly showy; tree wants to grow with several trunks but can be trained to grow with a single trunk; no thorns

Pruning requirement: needs little pruning to develop a strong structure

Breakage: resistant

Current year twig color: brown; reddish

Current year twig thickness: medium; thin

Culture

Light requirement: tree grows in full sun

Soil tolerances: clay; loam; sand; acidic; occasionally wet; alkaline; well-drained

Drought tolerance: moderate

Aerosol salt tolerance: low

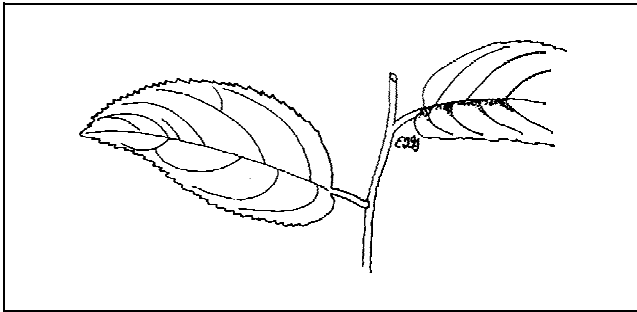


Figure 3. Foliage of Crabapple.

Soil salt tolerance: moderate

Other

Roots: surface roots are usually not a problem

Winter interest: tree has winter interest due to unusual form, nice persistent fruits, showy winter trunk, or winter flowers

Outstanding tree: not particularly outstanding

Invasive potential: little, if any, potential at this time

Ozone sensitivity: sensitive or moderately tolerant

Verticillium wilt susceptibility: not known to be susceptible

Pest resistance: very sensitive to one or more pests or diseases which can affect tree health or aesthetics

USE AND MANAGEMENT

Plants are used for specimens, patios (small-fruited types), and along streets to create a warm glow of color each spring. Most are attractive during the summer, bearing glossy green foliage. Popular around overhead powerlines due to their small stature, a row of Crabapples along each side of the street or median strip can "make" a neighborhood. Select plants which have been grafted onto EMLA 106 or 111 rootstock to reduce root suckering.

Crabapple is well-adapted to compacted urban soil, tolerates drought and poor drainage well and is somewhat tolerant of salt-spray. Well adapted to all areas within its hardiness zone range, including Texas and Oklahoma. Very adaptable tree. Do not overfertilize since this could increase the incidence of disease. Select only from disease-resistant cultivars. Crabapples grow well in the Texas panhandle but are not extremely drought tolerant and are not well suited for high pH soil.

Large-fruited types can create a maintenance problem since rotting fruits attract insects, rodents, and are quite messy. Some Crabapples sprout vigorously from the roots and these will require regular pruning to

maintain an attractive tree. Trees used as street trees will require regular pruning early in their life to train lower branches for pedestrian and vehicle clearance.

There are hundreds of Crabapple cultivars with single or double, red, pink, or white flowers, and varying fruit size. Many are cultivars of *Malus baccata* and *Malus floribunda*. Since disease resistance can vary depending on where a particular cultivar is grown, be sure to choose a cultivar which has been shown to be resistant to disease in your area. Your urban forestry program could suffer if you plant the wrong cultivar but it could blossom if the correct ones are installed.

Malus adapted for street tree and urban use include 'Adams', 'Bob White', 'David', 'Donald Wyman', 'Profusion', 'Red Splendor' and *Malus floribunda*. Be sure to specify tree form plants for street tree use since branching may be too low on trees grown for specimen use.

White flowered cultivars include: 'Baccata Columnaris' - narrow crown, white flowers, red or yellow fruit; 'Baccata Gracilis' - slow-growing, shrub-like, white flowers, fruit small and dark red, annual bearer; 'Baccata Jackii' - upright form, white flowers, bright red fruit, annual bearer, also good to excellent disease resistance; 'Callaway' - pink buds, white flowers, red fruit; 'David' - pink buds open to white flowers, scarlet fruit, good to excellent disease resistance; 'Dolgo' - pink buds, white flowers, large red fruits; 'Donald Wyman' - disease-resistant but susceptible to fire blight, glossy red showy fruit; 'Ellwangeriana' - red fruit, disease-resistant; 'Floribunda' - pink to red bud opens to single white flower, yellow or red fruit - commonly available; 'Gloriosa' - pink bud opens to white flower, red, large fruit; 'Golden Hornet' - upright arching habit, white flower, yellow fruit; 'Gorgeous' - pink bud opens to large, white flower, red to orange fruit; 'Harvest Gold' - white flowers followed by yellow fruits; 'Hupehensis' - Tea Crabapple - pink buds open to white flowers, greenish fruit; 'Katherine' - double flowers opening pink, fading to white, fruit yellow and red; 'Mary Potter' - pink buds open to single white flowers, red and fairly large fruit, susceptible to scab and powdery mildew; 'Red Jade' - weeping habit, white flowers, red fruit persisting after leaves drop; 'Sargenti' - dwarf, pink bud opens to white flowers, small dark red fruit; 'Snowdrift' - white flowers, orange red fruit; 'Tanner' - white flowers, red fruits, susceptible to diseases; 'Tschonoski' - white flowers, vigorous growth, good bronze red fall color, fruit

brownish; 'White Angel' - white flowers, glossy red fruit persisting into winter; 'White Candle' - pink buds open to white flowers, red fruit, upright growth habit; 'Zumi Calocarpa' - white flowers, bright red persistent fruit.

Pink flowered cultivars include: 'Arnoldiana' - red buds, pale pink to white flowers, red and yellow fruits, susceptible to diseases; 'Barbara Ann' - double pink flowers; 'Beverly' - pink flowers, small, bright red fruit, upright open habit; 'Brandywine' - double, pink flowers, foliage tinged reddish; 'Candied Apple' - red buds and pink flowers, persistent bright red fruits; 'Coralburst' - pink flowers, a dwarf about eight feet tall; 'Dorothea' - red buds, pink flowers, yellow fruits, susceptible to scab; 'Hopa' - pink flowers, red and yellow fruit, extremely susceptible to scab; 'Margaret' - disease-resistant; 'Mount Arbor Special' - disease-resistant, red fruit; 'Oekonomierath Echtermayer' - somewhat weeping habit, red buds, pink flowers, red fruits; 'Pink Perfection' - pink flowers, susceptible to scab; 'Prairie Rose' - double pink flowers, no fruit; 'Radiant' - red buds, pink flowers, persistent red fruits, susceptible to scab; 'Van Eseltine' - double pink flowers, columnar; 'Velvet Pillar' - upright form, pink flowers, red fruit and purple foliage; 'Weeping Candied Apple' - pink flowers and red fruit on horizontal to pendulous branches.

Cultivars with red flowers include: 'American Beauty' - double, red flowers, susceptible to scab; 'Centurion' - a columnar growth habit, red flowers followed by bright red, persistent fruits; 'Indian Magic' - red flowers, maroon fall color, small red fruit, persistent; 'Purpurea Lemoinei' - dark rose color flowers, alternate bearing; 'Profusion' - red flowers and fruit; 'Red Baron' - red flowers, susceptible to scab; 'Red Silver' - red flowers, red fruit, susceptible to scab; 'Red Splendor' - red buds, red to pink flowers, red fruit, susceptible to scab; 'Royal Ruby' - double red flowers, sparse red fruit, susceptible to scab; 'Royalty' - red flowers, red fruits, young foliage purple, susceptible to scab; 'Selkirk' - red flowers, red fruits, susceptible to diseases; 'Sparkler' - red flowers, red fruits; 'Tomiko' - disease-resistant, reddish-purple blooms; 'Wisley' - red flowers.

One of the best Crabapples for the south is *Malus* x Callaway.

Disease-resistant cultivars include: 'David', 'Dolga', 'Donald Wyman', 'Ellwangeriana', 'Inglis', 'Jackii', 'Jewelberry', 'Margaret', 'Mary Potter'

'Mount Arbor Special', 'Prairifire', 'Professor Sprenger', 'Tomiko'. Contact the Ornamental Crabapple Society, Morton Arboretum, Lisle, Illinois 60532 for more information on Crabapples.

Pests

Aphids infest branch tips and suck plant juices, and are quite common. They can deform newly emerging foliage and secrete honey dew creating a sticky mess beneath the tree, but will not kill the tree.

Fall webworm makes nests on the branches and feeds on foliage inside the nest. Small nests can be pruned out or sprayed with *Bacillus thuringiensis*. Controlling severe infestations may require other chemicals.

Scales of various types are controlled with horticultural oil.

Borers can be a problem on stressed trees.

Mites are too small to see easily so they can cause much foliage discoloration before being detected. Mites can be controlled to a degree with horticultural oil, but other chemicals are often required by the time mites are detected. The mite infestation can also be severe by the time foliage chlorosis or bronzing is evident.

Eastern tent caterpillar builds tents or nests in trees in early summer or late spring. Feeding occurs on foliage outside the nest. Defoliation can be extensive if infestation is severe, and repeated defoliations for several years can weaken trees. Small nests can be removed by pruning them from the tree. Spray with *Bacillus thuringiensis* or other approved chemical. Do not burn nests while they are still in the tree.

Diseases

Many selections are fairly susceptible to disease. Select from the disease-resistant ones.

Scab infection takes place early in the season and dark olive green spots appear on the leaves. In late summer the infected leaves fall off when they turn yellow. Infected fruits have black, slightly raised spots. Use resistant varieties to help avoid this severe problem.

Fire blight susceptible trees have blighted branch tips, particularly when the tree is growing rapidly.

Leaves on infected branch tips turn brown or black, droop, and hang on the branches. The leaves look scorched as by a fire. The trunk and main branches become infected when the bacteria are washed down the branches. Cankers form and are separated from adjacent healthy bark by a crack. The infected bark may be shredded. Use resistant cultivars when available since severe infections on susceptible trees can kill the tree.

Powdery mildew coats leaves with white fungal growth resembling powder.

Cedar apple rust causes brown to rusty-orange spots on the leaves. Badly spotted leaves fall prematurely, and defoliation can be heavy. Redcedars (*Juniperus virginiana*) are the alternate host.

Crabapples are subject to several canker diseases. Prune out infected branches, avoid unnecessary wounding, and keep trees healthy.