AGRICULTURAL EXTENSION SERVICE UNIVERSITY OF MINNESOTA

Arboretum Review

Flowering Crabapples

ARBORETUM REVIEW NO. 19—1974
M. C. EISEL

Flowering crabapples are among the most useful small trees that can be grown in Minnesota. Most of them are dependably hardy and fast growing.

Few trees equal the profusion of bloom of flowering crabapples; some of them begin flowering a year or two after planting. Bloom ranges from pure white to dark red. Most flowers are single, but semi-double and double are becoming more common. In addition to their beauty, flowering crabapples are delicately fragrant.

Many of the dark-colored flowering crabapples have leaves with a reddish cast. Some retain the redness through the growing season, while others gradually become green. The white flowering crabapples, however, invariably have green foliage.

Most of the flowering crabapples have fruits that provide a longer show than their flowers. Some have fruits that are colorful by midsummer. The most conspicuous have color in contrast to the foliage. The fruits vary in size from ¼ inch up to 2 inches in diameter. Those with larger fruits and those that drop their fruits cause a litter problem and are, consequently, less desirable. The colorful fruits contrasted against the snow, and the feeding birds add considerable interest and beauty to winter landscapes. Most have bright red to dark red fruits. A few have yellow fruits, but these, unfortunately, turn brown when frozen.

The form of the trees varies from narrow columnar to vase-shaped, oval, round, broadly horizontal, and weeping. Height varies from about 6-40 feet, although most stay under 25 feet tall.

The Arboretum collection contains more than 150 different species, cultivars, and selections. A detailed record system has been carefully devised to evaluate this collection. Notes have to be taken about six times a year with information including habit, hardiness, adaptability to site, flower abundance, flower color, period of bloom, fruit abundance, fruit attractiveness, fruit adherence, susceptibility to fire blight, scab, cedar-apple rust, insect damage, and foliage attractiveness. Disease resistance is a very important consideration when selecting flowering crabapples.

Apple scab, a fungus disease, often causes some of the flowering crabapples to defoliate by midsummer. Don't plant scab-susceptible cultivars such as 'Almey,' 'Hopa,' 'Irene,' 'Jay Darling,' and 'Eleyi.' Possibly new strains of scab develop that can attack some cultivars that were resistant in the past.

Cedar-apple rust is a problem on only a few trees, such as the 'Bechtel,' 'Kola,' 'Nova,' or other selections of the prairie crab. The large rust-colored lesions are unattractive. Chemical control is possible, but planting disease-resistant varieties is more practical.

Most devastating is a bacterial disease called "fire blight." It can kill a susceptible tree in one season. Many of the flowering crabapples seem to be quite resistant, but some are very susceptible. Cultivars that have been very susceptible are the Columnar Siberian Crabapple, 'Red Jade,' 'Royalty,' and 'Van Eseltine.' Pruning during the growing season can spread this disease.

The disease-resistant flowering crabapples require very little care. The annual removal of water sprouts, suckers, and corrective pruning is important in maintaining attractive specimens and should be done in late winter or early spring before growth starts. Where the trees are planted in tall grassy areas, a cylinder of quarter-inch hardware cloth should be placed around individual trees and worked into the soil to prevent rodent injury, especially mouse damage.

Aphids and a few leaf chewing insects can be a slight (usually not serious) problem; most can be controlled by spraying with malathion.

The crabapples are not too particular about their soil requirements; however, good drainage is essential. Crabapples should be planted where they receive full sunlight. Good care and proper pruning will help insure many seasons of joy from flowering crabapples.

Malus baccata Siberian crabapple — This crabapple is native from northeastern Asia to northern China. It has pink buds that open white. Its ½ inch fruits are red. The birds take most of the fruits by October, but a few usually remain into the winter. These seed-grown trees vary slightly in form. This normally is a broad roundish tree growing 30 or more feet tall. The twigs of the tree are golden brown. This species is quite free from disease problems, except for the cultivar 'Columnaris,' highly susceptible to fire blight. This crabapple usually takes on a clear yellow fall color. Several botanical varieties of this species are outstanding.

Malus baccata gracillis — In most respects it is similar to the species, but its branches are more pendant and it is a smaller tree. Bark is reddish brown. It holds some of its shriveled fruits in the winter. Scab has been a minor problem. **Malus baccata jacki** is similar to the species but a better shaped tree, rounded with twigs that have a golden-orange color. It has been very disease free.

Malus baccata mandshurica -- The Manchurican crabapple is the first to bloom in the spring. It has pure white flowers. The tree is quite broad and round and has a very strong branching habit.

Malus 'Cheals Crimson' — As a young tree it is well formed and somewhat upright. With age it becomes more round. This selection originated in England. Its abundant ¾ inch fruits are yellowish-orange with a red blush. Most of the fruits drop during September. If any remain, they become shriveled. Scab has been a very slight problem. The Arboretum's 13 year olds are about 12 feet tall.

Malus 'David' — This tree has been in the collection only eight years, but seems to be one of the most outstanding. It is about 10 feet tall. Quite round as a young tree, its pink buds open white. It produces an abundance of flowers and fruits each year. Its ½ inch red fruits are held into late winter. Foliage is dark green.

Malus 'Henry F. Dupont' — Introduced from the Arnold Arboretum (NY) in 1946, this selection is somewhat irregular in growth, but is more or less round. Its flowers are a rosy red and its foliage a dark maroon red. There is little contrast between the fruits and foliage. The ½ inch purplish red fruits are retained and remain attractive until spring if not taken by birds. It bears a heavy annual crop of fruit and has been disease free. The 13 year olds in the Arboretum are 18 feet tall.

Malus 'Pink Spires' — This selection has an upright form. Young trees have not flowered as abundantly as most crabapples, but age improves this. Flower color is a light magenta. The spring foliage has a reddish cast and during summer is dark reddish green. A few of the ½ inch red fruits are held into the winter. Very disease free to date.

Malus 'Profusion' — From the Netherlands, its abundant flowers are rosy pink. It produces a heavy crop of flowers and fruits annually. Some of the many ½ inch dark red fruits are retained and remain red until spring. The leaves are first purplish and become a bronze-green. It has been disease free. Its form is quite round.

Malus 'Radiant' — This 1957 University of Minnesota introduction produces a full round tree and the many dark red buds open to a light red color. Its fruits are ½ inch and bright red. It is commonly available and quite free of disease. Scab has been a problem the last two summers.

Malus 'Red Splendor' — An introduction of the Bergeson Nursery at Fertile, Minnesota. The major asset of this tree is its abundant ½ inch bright red fruits. They color up in late summer and produce a vivid contrast to the dark green leaves. If the birds don't take the fruits, they retain their color and remain on the tree until spring. This will become a large tree. It is somewhat irregularly shaped, and the rosy red flowers look somewhat faded. The 13-year-old trees at the Arboretum are 15-18 feet tall. It has been almost disease-free.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Roland H. Abraham, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55101. We offer our programs and facilities to all people without regard to race, creed, color, sex, or national origin.

Malus 'Ringo' — This selection has very good form. It has a pinkish bud and a white flower. Flowers and fruits are sparse. The fruits are yellow, but they usually drop by early October. It has been disease free to date. The trees are semi-upright, and have a rich brownish bark color. The Arboretum's 8-year-old trees are 12 feet tall.

Malus robusta erecta Column Cherry Flowering Crabapple — This tree has a neat, symmetrical oval form. It is a very sparse bloomer, produces very few fruits, and has been very disease free. The Arboretum's 13-year-old trees are 20 feet tall.

Malus rocki Rock Crabapple — A crabapple from West China with very good form and disease resistance. It has pale pink flowers and ¾ inch red fruits. Some years, part of the fruits are held into the winter. The Arboretum trees are seedlings and form varies from semi-upright to broad and round.

Malus 'Rodney' — An introduction made by the Kelley Nursery of Long Lake, Minnesota. It is a rather broad tree. Each year it produces an abundance of white flowers, although the buds are pink. The large quantity of dark red fruits are about ¾ inch and are held on the tree into late winter. This cultivar has been very disease free, although one plant was severely injured by fire blight. The 11 foot trees are 9 years old at the Arboretum.

Malus 'Royalty' — This Canadian selection was named in 1958. Despite its rather recent introduction it has been extensively propagated and distributed. It has the finest deep glossy red foliage of any of the flowering crabapples. Its major fault is its extreme susceptibility to fire blight. Some of the Arboretum plants have been completely free of the problem, while others have been killed. The flowers and foliage are so similar in color it is hard to see the flowers.

Malus x scheideckeri Scheidecker Crabapple — This originated in Germany in the 1800's. This crabapple has semi-double light pink flowers. Its fruits are ½ inch and bright yellow. They turn red-orange after a hard freeze, but do remain on the tree. The birds relish these fruits. This cultivar has been very disease free. The tree produces an oval form. The 12-year-old trees are 14 feet tall at the Arboretum.

Malus 'Sparkler' — This is a recent University of Minnesota introduction. This tree becomes a broad, roundish tree of about 12-15 feet. It flowers profusely with deep red flowers and begins to bloom at a very young age. Its fruits are about 5/8 inch and dark red. Some of these are retained into the winter. This cultivar has been disease free. The Arboretum's 12-year-old trees are 11 feet tall, and broader than tall.

Malus 'Spring Snow' — This crabapple has very good form and has been disease free. It has produced abundant crops of white flowers each year, but produces no fruit. Although it is reported to grow 15-18 feet tall, the Arboretum's 5-year-old plants are 14 feet, and growing fast. Bark is brown.

Malus 'Vanguard' — A University of Minnesota introduction that is vase shaped. It has many deep rose-red flowers. Many of the 5/8 inch fruits are retained on the tree, and remain attractive during winter. This has been disease-free except for some scab problem the last few years. The 18 foot trees are semi-upright and 13 years old in the Arboretum.

EVALUATION OF FLOWERING CRABAPPLES*

Best

baccata (Siberian)
baccata gracillis
baccata jacki
baccata mandshurica
'David'
'Flame'
'Golden Hornet'
'Henry F. Dupont'
'Liset'
'Pink Spires'
'Profusion'
'Red Splendor'
'Ringo'
rocki (Rock)
scheideckeri
'Sparkler'
'Spring Snow'

Sparkler

Good

'Albright'
'Cheals Crimson'
'Dorothea'
'Gorgeous'
'Hillier'
'Katherine'
'Makamik'
'Mary Potter'
'Nicolene'
'Patricia'
prunifolia (Pearleaf)
x purpurea 'Lemoine'
'Radiant'
'Red Glow'
'Red Heart' (LF)
robusta 'Erecta'
'Rodney'
'Selkirk'
'Sundog'
'Sutherland'
tchonoski
'Vanguard'

Key

CAR — Cedar-apple rust
FB — Fire blight
LF — large fruits
NH — not hardy
S — scab

Fair

x Arnoldiana (Arnold) (S)
'Arctic Dawn'
'Baskatong'
'Beverly' (FB)
brevipes (S)
'Cashmere'
'Echtermeyer' (S)
'Garry' glabrata (Biltmore) (CAR)
'Gwendolyn'
hupehensis (Tea) (S-LF)
'Kingsmere'
'Oporto'
'Pioneer Scarlet' (S)
'Pixie' (S)
pumila var. niedzwetzkyana (S)
x purpurea 'Eleyi' (S)
'Royalty' (FB)
sikkimensis (Sikkim) (FB)
'Snowcap' (FB)
'Tures' (S)
'Wintergold' (FB)
'Wynema' (S)
zumi calocarpa (Redbud) (FB)

Poor

'Almey' (S)
'American Beauty'
'Athabaska' (S)
baccata 'Columnaris' (FB)
'Brier'
coronaria 'Nieuwlandica' (CAR-FB)
'Cowichan' (S)
x dawsoniana (NH)
'Evelyn' (FB)
floribunda (Japanese) (NH-FB)
glaucescens (Dunbar) (S-FB)
'Hopa' (S)
ioensis (Prairie) (CAR)
ioensis 'Klehm's Improved
ioensis 'Bechtel' (CAR)
ioensis 'Nova' (CAR)
'Irene' (S)
'Jay Darling' (S)
'Jubilee' (S)
kansuensis (Kansu)
'Kola' (CAR)
'Louise' (FB)
'Marshall Oyama' (FB-LF)

Pink Weeper

Poor (continued)

'Pink Weeper' (FB-S)
'Purple Wave' (S)
x purpurea 'Aldenhamensis' (FB)
'Redfield' (S-LF)
'Redford' (S)
'Red Jade' (FB)
sargenti (Sargent) (FB)
sargenti rosea (FB)
'Snowdrift' (FB)
soulardi (Soulard) (LF-S)
'Tops in Bloom'
toringoides (Cutleaf) (FB)
'Van Esseltine' (FB)
'Wabaskaw' (FB-S)
x zumi (Zumi) (FB)

Further evaluation needed

'Coral Beauty'
'Coralburst'
'Dainty' (FB)
'Donald Wyman'
'Edith'
ellwangeriana
'Elsie Rathke'
'Golden Gem'
'Joe Downy'
'Hedwigiae'
'Kelsey'
'Kibele'
'Martha Dolgo'
'Mill End'
'Oakes'
'Pink Cascade'
'Pink Perfection'
x purpurea
'Pygmy'
'Royal Baby'
'Rudolf'
sieboldi
sieboldi arborescens (Tree toringo)
'Silver Moon'
'Snowcloud'
x sublobata
'Tanner'
'White Angel'
'White Candle'

*Further evaluation will undoubtedly require revision of this list which is based almost entirely on performance at the University Landscape Arboretum.

Agricultural Extension Service
Institute of Agriculture
University of Minnesota
St. Paul, Minnesota 55101

Roland H. Abraham, Director

Cooperative Agricultural Extension Work
Acts of May 8 and June 30, 1914

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF
AGRICULTURE
AGR 101

U.S. MAIL