



## CRABAPPLES

FOR WESTERN WASHINGTON LANDSCAPES



Crabapples are now, more than ever, a popular and attractive choice for ornamental landscapes, both public and private. Crabapple trees are hardy, adaptable to various soils, and come in a wide range of sizes and shapes. Varieties are available to suit almost any purpose, from small urban gardens, entry courtyards, and parking strips to public parks and highway plantings. Crabapples bloom profusely in eye-catching shades of pink, red, and white, sometimes accented by purple or bronze leaf color. Their coloration makes them effective ornamental trees in the spring landscape.

Many older crabapple varieties grown in the past adapted poorly to the cool, moist climate of the maritime Pacific Northwest. Too often, diseases such as scab and powdery mildew took their toll. Following the attractive blooms of April and May, severe infections turned the trees into leaf-shedding eyesores by the end of the summer and threatened their long-term survival. It usually required an aggressive spray program to keep disease-susceptible trees healthy and attractive. Intensive spraying, costly in terms of both labor and materials, is particularly impractical for large areas such as parks and roadsides. Aside from the expense, spraying of pesticides is increasingly seen as undesirable in urban and residential locations.

Because several varieties formerly sold and planted, such as 'Hopa,' 'Van Eseltine,' and 'Eleyi,' are quite disease susceptible, crabapples have lost favor in areas where fungal diseases are common, and have been eliminated from many landscape plantings. **Better crabapple varieties now are available that carry proven disease resistance.** These resistant varieties have attractive bloom equal or superior to the older varieties. They also will keep their healthy leaf canopy intact through the summer and into fall. Some turn color in late autumn. Many produce full crops of small bright fruit that decorate the branches well into the winter and provide food for overwintering birds. They are worthy of a prominent place in any landscape.

In 1984, Dr. Tom Green of the International Ornamental Crabapple Society worked with Washington State University to establish a test planting of crabapple varieties at WSU Mount Vernon. Dr. Green furnished trees and organized the trials for disease resistance nationwide. It was one of 23 original test sites located throughout the country to test resistance under varied climate conditions. Many introductions tested in the program have improved resistance

to serious diseases such as scab.

Researchers rate all varieties annually in spring and fall. Most crabapples are attractive in bloom, so although the spring rating is an important element of any variety's overall performance, the most critical evaluation is how the trees look in the fall. The spring evaluation emphasizes bloom time (early, mid, or late), appearance (flower and leaf color), and fragrance. The fall rating covers tree habit, appearance and disease symptoms. To receive a high rating, a variety should retain most or all of its leaves in a healthy condition throughout the summer and must have abundant, vividly colored fruit that does not drop and make a mess (Figs. 1, 2). The preference is for small fruit of 1/2" diameter or less, but larger sized fruit is acceptable if it remains firmly attached to the tree until it dries up (e.g., 'Evereste,' see cover) or is eaten by birds.



**Fig. 1.** Leaf canopy of disease resistant crabapples such as 'Christmas Holly'<sup>TM</sup> remains healthy through the summer and into fall.



**Fig. 2.** 'Christmas Holly'<sup>TM</sup> produces abundant bright red fruit, which birds like.

Although a variety having proven immunity to disease infection is usually the best choice, a tree's good appearance is not always totally related to its level of disease resistance. Certain crabapple varieties, although somewhat susceptible to scab or other diseases, still keep their leaves and continue to look attractive in late summer and fall. In some varieties the leaves may drop fairly early in the fall, but trees remain attractive with colorful fruit that hangs on well into the winter (Fig. 3). Performance ratings of the different crabapple varieties discussed in this bulletin are based on data and observations taken of the WSU Mount Vernon plot from 1984 to 1994. Since apple scab is the most serious disease to which crabapples are exposed in a cool, damp climate, researchers have kept a scab rating on all varieties in the trial (see tables below.)



**Fig. 3.** 'Indian Magic,' susceptible to scab, drops its leaves early in the fall. The colorful fruit hangs on well into the winter.

This guide primarily reports on varieties that are well adapted for ornamental and landscape purposes. In most cases the fruit is too small, bitter, or sour for human consumption, although birds and other wildlife often are attracted to it as a winter food source. Some crabapples have fruit suitable either for fresh eating or for culinary purposes. These larger-fruited varieties are generally not good choices for ornamental use, because excess fruit tends to drop and rot, making an unsightly mess on lawns and walkways.

### DUAL-PURPOSE (ORNAMENTAL AND CULINARY)

Among the crabapple varieties that merit consideration for eating fresh or for culinary uses, '**Dolgo**' is probably the most commonly planted. Serious drawbacks are its high scab susceptibility, which requires an aggressive spray program for good control, and the early-ripening fruit that drops rapidly if not harvested. The apples are quite tart, mainly good for jelly or pickled fruit. '**Evereste**' and '**Ralph Shay**' produce heavy loads of round, very tart fruit that hang on the trees through the winter. '**Evereste**' has excellent scab resistance, needing no spray, while '**Ralph Shay**' is moderately susceptible and will need a basic spray program to remain attractive.

'**Whitney**' is an older variety, having large, mildly subacid fruit that can be eaten fresh from the tree. '**Centennial**,' developed in Minnesota, produces attractive red and yellow fruit with a pleasant sweet-tart flavor. '**Chestnut**,' originating in England, has red striped, partly russeted fruit that is sweet and crunchy with a distinctive nutlike flavor. '**Whitney**,' '**Chestnut**,' and '**Centennial**' all would require a basic scab spray program to ensure good harvest of usable fruit. All the varieties mentioned above have white bloom. In our trials pink-flowered crabapples with edible fruit, such as '**Red Flesh**' and '**Almata**,' have proven too scab susceptible for general use, as the trees would need an aggressive spray program to maintain good health.

### VARIETY EVALUATIONS

Listed in the tables below are ornamental crabapple varieties that have done well at the test site near Mount Vernon in the Skagit Valley. We anticipate that their performance will be similar in other cool maritime areas of the Pacific Northwest. For easy comparison, we have divided the varieties into sections according to bloom color and tree shape. **Upright** trees (Fig. 4) are tall and narrow; **upright spreading** trees (Fig. 5) are tall but have branches that open out as the tree matures; and **rounded** trees (Fig. 6) have a compact, densely branched, nonspreading habit. **Broad spreading** trees, whether large or small, have a flattish, horizontal limb structure (Fig. 7). As they mature, some broad spreading trees develop limbs that tend to grow downward, and are termed **semiweeping** (Fig. 8). Trees with a fully **weeping** habit are those in which most or all branches trail downward even when trees are quite young (Fig. 9).



**Fig. 4.** 'Sentinel' is an attractive early bloomer having an upright growth habit.



**Fig. 5.** 'Silver Moon,' a vigorous, upright spreading tree, blooms profusely late in the season.



**Fig. 6.** Compact, rounded form and fragrant, long-lasting bloom make 'Christmas Holly'<sup>TM</sup> a top choice.



**Fig. 7.** Broad spreading shape and pink blush of 'Tea' contrast nicely with other landscape elements.



**Fig. 8.** 'Molten Lava'<sup>TM</sup> is a vigorous semiweeping tree well suited to sites such as



**Fig. 9.** 'Louisa' is noted for its strongly weeping habit and soft pink bloom.

parks and highway borders.

Within each section, varieties appear in alphabetical order, giving information on bloom time, fruiting, tree vigor, and scab rating. A few brief comments cover any additional details.

**Bloom time** for crabapples varies somewhat with the season and location, but observations at the test site since 1986 indicate that on average the early bloom begins in early April and the late bloom continues into early or mid-May. We refer to **fruit set** as "abundant" when most or all branches of the tree are filled with fruit, "moderately abundant" when most branches have some fruit, and "sparse" when fruit is scattered on occasional branches or grows in small quantity.

In evaluating **vigor** we can only estimate exact dimensions since the plot is only 11 years old. The relative size of same-age trees gives good indication of their size at maturity. "Highly vigorous" trees have the largest current tree volume (15' or above in height or breadth 11 years after planting). "Low nonvigorous" trees have the least volume (5' to 8' in height, with corresponding breadth). Trees having "moderate vigor" fall midway between vigorous and nonvigorous (10' to 15' approximately). When fully mature, the most vigorous crabapples can reach 30' in height and have corresponding width, while the smallest (e.g., *M. sargentii*) may be no more than 8' tall.

We rated the trees for **scab** each year in September or October, using a scale where 5 equals no visible scab lesions on leaf or fruit, all leaves remain on tree; 4 equals scab detectable but most leaves are not infected, most leaves remain; 3 equals scab easily found on most leaves but causes little defoliation; 2 equals scab abundant on nearly all leaves, and up to 50% defoliation; and 1 equals bare tree. Crabapple trees rated at 4.5 or above have very good scab resistance. Those rated 3.5 to 4.5 are moderately resistant and generally acceptable for planting. Trees rated 2.5 to 3.5 are moderately susceptible and should not usually be planted; while those rated below 2.5 are very susceptible and should be avoided in most cases. Our goal is eventually to develop a good selection of scab-immune crabapples suitable to different landscape purposes, and gradually to discontinue use of susceptible varieties.



**Fig. 10.** 'Winter Gem'<sup>TM</sup> has excellent scab resistance, and its upright habit is suitable to narrower spaces.



**Fig. 11.** The distinctive cut-leaf foliage of 'Golden Raindrops'<sup>TM</sup> adds texture to landscape plantings even before the small golden fruit appear.

## KEY

Bloom: E=early, M=midseason, L=late

Fruit: A=abundant, M=moderately abundant, S=sparse; fruit color noted

Vigor: H=highly vigorous, large tree; M=moderate vigor; L=low, small, nonvigorous

Scab: Rating from 5=no scab, all leaves remain until fall, to 1=bare tree

### White Flowers, Upright Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Dolgo	E	M, red, culinary	M	2.3
Sentinel	E	M, red	M	4.4
Winter Gem™('Glen Mills')	M	A, dark red	H	5.0

**Comments:** 'Dolgo' is planted for its fruit, but is very scab susceptible, and not well suited for use as an ornamental. 'Winter Gem'™ (Fig. 10) has very showy, fragrant flowers. Its strongly upright growth habit is suitable to narrow spaces; scab resistance is excellent. Fruits of 'Sentinel' are very persistent, remaining dried on the tree until spring; the bright red buds are showy even before the tree begins to bloom (Fig. 4).

### Pink Flowers, Upright Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Pink Satin	M	M, dull red	M	2.7
Purple Prince	E-M	A, dark purple-red	M	-

**Comments:** At present no established pink-flowering trees with upright habit show good disease resistance. 'Purple Prince' and 'Pink Satin' are new and not fully evaluated in our moist maritime climate, but the young trees appear to have an upright habit. The young shoots are reddish purple in color, gradually turning dark green.

### White Flowers, Upright Spreading Tree

Trade Name	Bloom	Fruit	Vigor	Scab
David	M-L	M, red	M	4.1
Donald Wyman	M	A, red	M	3.2
Golden Raindrops™	L	A-M, yellow	M-H	5.0
Professor Sprenger	M	A, orange	H	4.1
Silver Moon	L	M-S, dark red	H	4.8
Sugar Tyme™	E	A, red	M	4.1
White Angel	E-M	A, orange-red	M	4.5

**Comments:** 'David' and 'Donald Wyman' are among the older varieties that still rate well for bloom and fragrance. 'Golden Raindrops'™ (Fig. 11 & cover) is noted for its small golden fruit and distinctive cut-leaf foliage, which adds interesting texture to ornamental plantings even when not in bloom. It has shown no sign of scab, and is one of the best all-season crabapples. Profuse bright orange fruit of 'Professor Sprenger' adds to its attractiveness as leaves begin to drop in early fall (Fig. 12). 'Silver Moon' (Fig. 5) bears its blooms late, in attractive clusters, and has very good scab resistance. 'Sugar Tyme' (see cover) produces a mass of brilliant, fragrant bloom and is loaded with red fruit through most of the winter. The long branches and open structure of 'White Angel' are emphasized by heavy spring bloom and fall fruit.

### Pink Flowers, Upright Spreading Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Indian Magic	M	A, bright red	M	2.2
Indian Summer	M	A, bright red	H	2.6

**Comments:** Leaf color of 'Indian Magic' and 'Indian Summer' is purplish red in spring, darkening to greenish brown. Both are susceptible to scab and drop nearly all their leaves in early fall. The brilliant red fruit is highly attractive in fall and winter (Fig. 3).

### White Flowers, Rounded Tree

Trade Name	Bloom	Fruit	Vigor	Scab
<i>M. baccata v. jackii</i>	E	M, red	H	4.3
Centennial	E-M	M, red, culinary	M	3.6
Christmas Holly™	M-L	A, red	L	4.8
Evereste™	M	A, red, culinary	M	5.0

**Comments:** *M. baccata v. jackii* is among the earliest bloomers (Fig. 15), and the large, tall trees require a spacious site. Both 'Christmas Holly'™ (Fig. 6) and 'Evereste'™ combine dense, fragrant spring bloom with very good to excellent disease resistance ('Evereste'™ is scab-immune). Weight of large, profuse fruit may give mature trees of 'Evereste'™ a semiweeping habit (Fig. 14 & cover); although the fruit is large it hangs on the tree until midwinter and then dries up. Fruit of 'Christmas Holly'™ is particularly attractive to birds and is usually eaten soon after the leaves drop (Figs. 1, 2). 'Centennial' produces 2-inch oval fruit, good for fresh eating or culinary use. It will need scab spray to ensure both a usable crop of fruit and an attractive tree.



**Fig. 12.** Bright orange fruit of 'Professor Sprenger' provide lively color to the yard in fall and winter.



**Fig. 13.** 'Prairifire' stands out for its vibrant color and long-lasting late bloom.



**Fig. 14.** Immune to scab, 'Evereste' may develop a semiweeping habit when mature, due to the weight of large abundant fruit.



**Fig. 15.** Among the earliest bloomers, '*M. baccata v. jackii*' is a large, tall tree filled with pure white flowers.

### Pink Flowers, Rounded Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Prairifire	L	M, dark red	M	4.1

**Comments: 'Prairifire'** (Fig. 13 & cover) stands out among the pink-blooming crabapples for its strong, vibrant color, long-lasting late bloom, and disease resistance, best of the pink varieties so far tested. The reddish purple leaves make a nice contrast with green foliage of other landscape plants.

#### White Flowers, Broad Spreading Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Jewelberry	M-L	M, red	L	4.5
Mary Potter	M-L	A, bright red	M	3.4
Molten Lava™	M	A, bright red	H	3.9
Ormiston Roy	E	A, dull yellow	H	3.8
<i>M. sargentii</i>	M	M, dark red	L	3.0
<i>M. x zumi</i> 'calocarpa'	M	A, red	H	3.9
Tea ( <i>M. hupehensis</i> )	E-M	A, yellow	M	4.4

**Comments: 'Jewelberry'** and *M. sargentii* are small, low trees even when fully mature; they are effective where space is limited, or set in front of taller trees in a planting. **'Mary Potter'** is somewhat larger in size, but will still fit attractively into a home garden. **'Tea'** (Fig. 7) has a delicate pink and white blush that contrasts nicely with pure white crabapple varieties. It develops a vase-shaped habit as it matures. **'Ormiston Roy,'** another older variety, still merits attention for its bloom and fragrance, though the fall color is not as showy. **'Molten Lava'**™ (Fig. 8) is a large, broad tree with a semiweeping habit when mature. It produces cascades of profuse bloom, well suited to areas such as parks and highway borders. *M. x zumi* 'calocarpa' is among the more vigorous trees and shows at its best in open sites.

#### Pink Flowers, Broad Spreading Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Candymint (Pat. No. 6606)	L	M, dark red	L	3.7

**Comments:** The dark reddish to purple-brown foliage of **'Candymint'** and the low, broad shape of the tree are very distinctive even after the colorful bloom fades. The dark red fruits are persistent but not very showy. Some consider the fall foliage too dark and dull colored.

#### White Flowers, Weeping Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Red Jade	E-M	M-S, red	M	3.6

**Comments:** We have not tested a white-flowering crabapple with true weeping habit and high disease resistance. **'Red Jade'** is an acceptable compromise; the tree is low and gracefully spreading. Moderately resistant to scab, it lacks fall fruit in some years.

#### Pink Flowers, Weeping Tree

Trade Name	Bloom	Fruit	Vigor	Scab
Louisa	M	M, dull yellow	M	3.7

**Comments: 'Louisa'** (Fig. 9) is noted for its strongly weeping habit; stake young trees firmly until the trunk reaches desired height. Trees would probably be more manageable and attractive if topworked high on a standard rootstock, somewhat similar to the method used for weeping cherry. The pink color is a soft blush, paler than most other pinks.

### TOP RATED VARIETIES

Of the nearly 60 different crabapples that WSU has evaluated in this trial since 1984, perhaps a dozen stand out as top performers. All have attractive, profuse bloom in spring. Many are fragrant. Their level of disease resistance, particularly to scab and mildew infection, is good to excellent. While not all of these varieties are suited to every landscape application, taken together they provide a wide selection of proven high quality. Listed in alphabetical order, they are

Christmas Holly™

*M. x zumi* 'calocarpa'

Sentinel

Evereste™  
Golden Raindrops™  
*M. baccata v. jackii*

Molten Lava™  
Prairifire  
Professor Sprenger

Sugar Tyme™  
White Angel  
Winter Gem™

A number of established crabapples that are not quite up to the standards of the top rank—usually because of higher scab susceptibility—are very acceptable for ornamental landscape uses and may be easier to find in nurseries. New introductions with higher disease resistance or other special qualities will eventually overtake varieties such as 'Mary Potter,' 'Ralph Shay,' 'Snowdrift,' and 'Donald Wyman.' However, these offer a significant improvement over the disease-prone, poorly adapted varieties of former years.

## VARIETIES TO AVOID

Although some of the following disease-susceptible varieties still may be sold locally on the basis of their performance in other parts of the country, they are not well adapted to the cool maritime climate areas of the Pacific Northwest. As a result of our testing program and studies, we do not recommend planting these crabapples.

Almata	Profusion
Almey	Purple Wave
Bechtel	Radiant
Beverly	Red Barron
Candied Apple, Weeping	Red Silver
Centurion	Robinson
Dorothea	Robusta
Eleyi	Royal Ruby
Echtermeyer	Royalty
Harvest Gold™	Ruby Luster
Hopa	Scheidecker
Jay Darling	Van Eseltine
Liset	Velvet Pillar
<i>M. micromalus</i>	Winter Gold
Pink Perfection	

## FUTURE PROSPECTS

Better crabapple varieties are available that are disease resistant and easily maintained, and that add to the year-round aesthetic value of the landscape. We encourage parks departments, homeowners, and landscape designers to try these new, recommended crabapple varieties and to become familiar with their versatile qualities as ornamental plants. Ask for them at nurseries. Nursery professionals can gear their production toward increased use of the high-rated varieties.

Promising new crabapples, not yet fully evaluated in western Washington, include 'Prairie Maid,' an attractive pink (Fig. 16); 'Adirondack,' a late white bloomer with upright habit; and 'Morning Sun,' a white bloomer with abundant yellow fruit that lasts well into the winter. Two compact varieties with very dwarf tree habit that may do well in patio or container gardens are pink-flowered 'Lancelot' and white-flowered 'Camelot.'



**Fig. 16.** 'Prairie Maid' is only one of the newer introductions promising improved disease resistance as well as ornamental quality.

Development of new disease resistant varieties continues, leading to crabapples that will need little or no spray for disease control. Unique leaf shapes, bloom colors, attractive winter berries, variable tree sizes and habits are all possibilities for future improvement. We plan to continue testing these high quality crabapples to provide a wide selection for gardeners, homeowners, and landscapers. At the conclusion of the project we hope to have a full range of crabapple choices well adapted to our maritime climate conditions. The versatile crabapple now merits a prominent place in the western Washington landscape.

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Cover Photos, clockwise from top are 'Evereste,'™ 'Prairifire,' and 'Golden Raindrops.'™

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