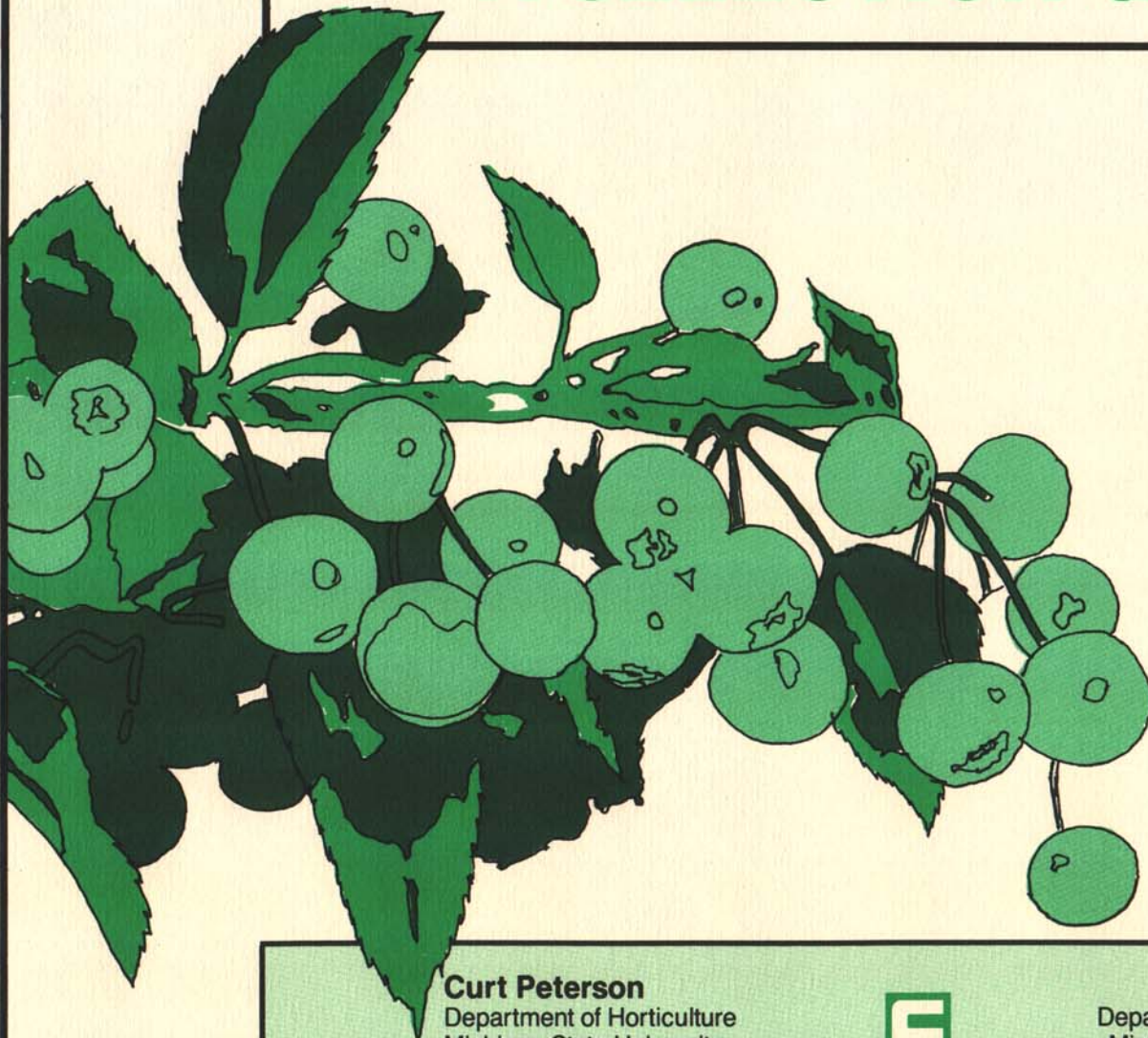


CRABAPPLES

A SELECTION GUIDE



Flowering crabapples are among the most popular ornamental trees. Few woody plants offer so many all-season values as these trees.

This easy-to-use guide can help you select the crabapple best suited for your planting site. **Eighty-five species and cultivars are listed**, with information on disease resistance and ornamental traits—size, shape and color of flowers and fruit. Also included are helpful tips on which type of tree to plant in certain areas of your landscape.

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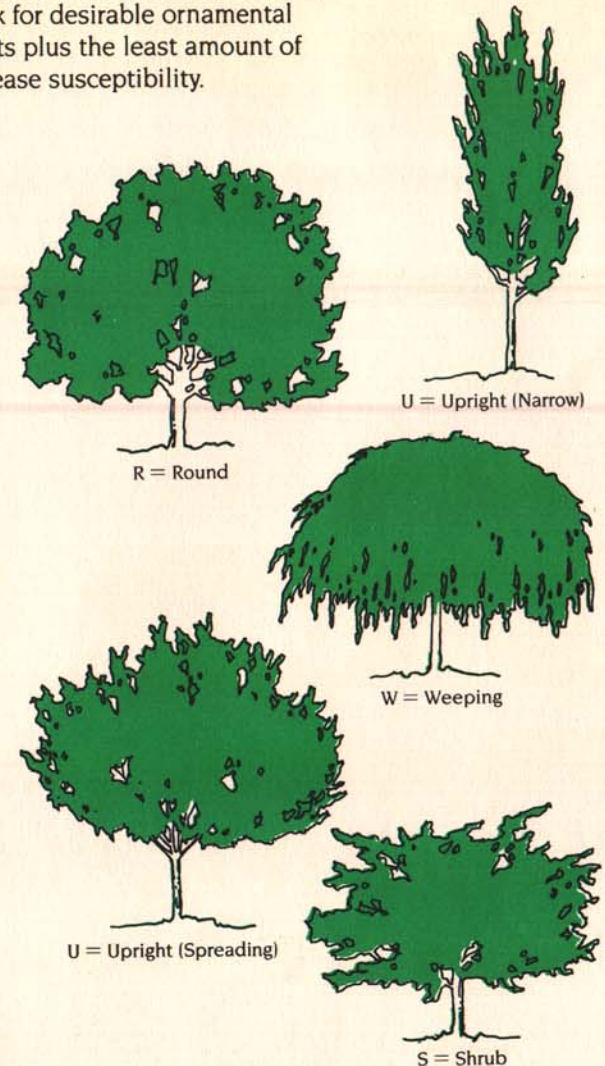
Crabapple Selection Criteria

If the tree is to be—	Select trees with—
Close to the viewer	Fragrant flowers Small fruits Red fruits Persistent fruits Detailed blossoms (double, bicolor) Medium to small size (unless desired for shade)
Far from the viewer	Large fruits Yellow fruits Medium to large size
Seen against red or dark brown stone or brick background	White flowers Yellow fruits Yellow fall color
Seen against light brown or tan stone or brick and natural cedar	White flowers Red fruits Medium to large size
Seen against blue sky	White or red flowers Red fruits Medium to large size
Seen with sunshine from behind the viewer	White flowers Yellow fruits
Seen against a white or generally light background	Red or rosy flowers Red fruits
Seen against a dark background (such as conifers)	White flowers Red or yellow fruits Good fall color
Planted on a hillside or small slope	Semi-weeping Weeping or a very wide spreader
Planted overhanging water, a rock wall or terrace	Horizontal spreading Semi-weeping Weeping
Planted near walkways, drives or tight corners	Upright to columnar Fragrant

(Courtesy of John J. Sabuco, landscape architect and president of the International Ornamental Crabapple Society.)

Selecting Crabapples for the Landscape

To select a good crabapple tree, look for desirable ornamental traits plus the least amount of disease susceptibility.



Ornamental Traits

Flowers

In the spring, the showy blossoms make their appearance before the lilacs bloom. Although the actual time of bloom will vary from year to year, depending on temperature, a total bloom period of up to four weeks can be expected. Very-early blooming crabapples may flower as early as the star magnolia, while late bloomers may coincide with the black locust. The bloom period of an individual cultivar may vary from two days to almost two weeks depending on weather conditions.

Crabapple buds may be pink, white or red, and open blossoms may be white to dark purplish red, with many variations in between. Most crabapples have single flowers, but a few have semi-double or double blossoms.

Some cultivars bloom heavily only every other year. Avoid these alternate-bearing trees. The majority of crabapple cultivars produce consistent flower displays each year.

Foliage

Most crabapples have attractive green foliage. Some have a distinct reddish or bronze leaf color for the first month or so of the growing season. Most crabapple cultivars do not have especially attractive fall colors.

Fruits

A flowering crabapple is defined as any apple (genus *Malus*) with fruit 2 inches or less in diameter. The color of the ¼- to 2-inch fruits ranges from bright red to purple and bright yellow to orange, with intermediate shades and combinations. Fruits of some cultivars begin to color in August, while the fruits of others do not reach their true color until September or October.

The fruits of some cultivars ripen and drop by the end of August, but the fruits of others may still be present in the spring. Cultivars with fruits persisting into winter can add a good deal of color to the early winter landscape. Birds may eat these fruits in winter.

Fruits follow the flowers, so alternate-bearing cultivars will fruit heavily only in those years when they produce many flowers.

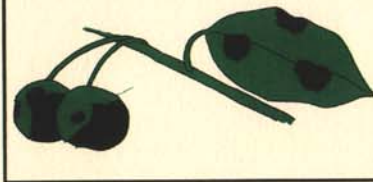
Growth Habit

Flowering crabapples can be less than 20 feet tall, but some may grow to 30 or 40 feet. Most crabapples are rounded and dense, but growth habit varies widely from narrowly upright to weeping. In summer, each form of crabapple lends a distinctive character to the landscape, and the twisted limbs of older specimens add a picturesque beauty to the winter scene. The various plant forms, flowers and fruit colors make crabapples a very useful species in the landscape.

Diseases

Disease susceptibility or resistance should be given as much consideration as the ornamental traits when selecting a crabapple. Four diseases—apple scab, fire blight, cedar-apple rust and powdery mildew—are the major disease problems affecting crabapples.

Apple Scab



Apple scab causes the leaves to turn yellow and drop prematurely in mid- to late summer. The fruits will usually have sunken, corky, dark olive areas.

This fungal disease attacks many species, including crabapple, apple, mountain ash, pear, pyracantha and quince. The disease in some years can completely cover leaves of susceptible cultivars. Such severe infections, referred to as "sheet scab," will defoliate an entire tree. The loss of infected leaves weakens the tree. Scab can defoliate a tree several times in one season.

The scab fungus forms two types of spores. The first type is formed on fallen leaves of the previous year and is blown about in the wind. It causes the first infections in the spring. These infections form a second type of spore that is spread by rain splash and infects only the same plant or nearby plants of the same species. The more rainy the season is, the more the disease spreads throughout adjacent plants.

If you can prevent the first type of spore from infecting the plant in early to midspring, the plant will escape further infections that season.

This disease is not fatal but requires regular sprays from bud-break through mid-June. Fungicides labeled for use on crabapple for scab include chlorothalonil (Daconil 2787) and benomyl (Benlate). Apply a fungicide when swollen flower buds show one-half inch of green tissue. Follow with applications, as needed, to protect the plant throughout the blooming period whenever dew or rain threatens to wet leaves for 6, or more, hours.

Cultural controls include raking and burning fallen leaves before spring and replacing highly susceptible cultivars with resistant cultivars.

Fire Blight



Fire blight is a bacterial disease that causes leaves to blacken and hang on the tree. As the bacteria spread to larger branches, more of the tree dies and the bark of infected branches becomes wrinkled and peels. This disease is usually fatal—there is no effective chemical control. Shoots often have bent, drooped tips and resemble a shepherd's crook.

Bacteria generally cause blights during wet weather in early spring when buds are breaking. Warm spring weather favors fire blight on crabapples.

In wet spring weather, cankers formed during previous infections ooze droplets of bacteria. The bacteria are splashed by rain and blown about as mists, or insects may visit the attractive ooze and carry it about. Infections usually begin either through nectaries of flowers or through the microscopic pores (stomates) in leaves.

Avoid using high-nitrogen fertilizers on susceptible cultivars.

Continued on page 8

Ornamental Traits and Susceptibility to Diseases of Crabapple Species and Cultivars

The table below lists crabapple species and cultivars and shows their ornamental traits and apple scab susceptibility. To use "Flower" column: The left side lists the color of the flower bud to the left of the slash (/) mark and the color of the open flower to the right. The right part of the column indicates whether the flowers are single (sgl) or double (dbl).

Species and Cultivars	Hgt.	Spread	Form	Flower		Fruit size	Fruit color	Apple scab*				Comments
				Buds/Open	Type			PA	IL	OH	MI	
'Adams'	20'	20'	R	red/pink	sgl	¼"	red	M	M	R		An annual bearer of carmine flowers that fade to pink. The fruits persist until spring. Fall foliage display is yellow to orange.
'Almey'	25'	20'	U	red/pink	sgl	1"	red			HS		Not recommended because of severe scab susceptibility.
'American Beauty'	30'	20'	U	red/red	dbl	½"	red			HS	S	Not recommended because of severe scab susceptibility.
× <i>atrosanguinea</i>	20'	20'	S	red/pink	sgl	⅜"	red/yel			HS		The red and yellow fruits have little ornamental value. Reported to be both disease resistant and susceptible.
'Autumn Glory'	20'	15'	U	red/white	sgl	¼"	red					Flowers profusely with good fragrance.
<i>baccata</i>	30'	30'	R	pink/white	sgl	⅜"	red/yel			S		An annual bearer with excellent cold hardiness.
<i>baccata</i> 'Columnaris'	30'	10'	U	white/white	sgl	½"	red/yel			S	T	One of the most upright crabapples. Susceptibility to fire blight may limit its use.
<i>baccata</i> 'Jackii'	20'	20'	U	white/white	sgl	½"	red		NS	R	R	The long-stemmed fruits persist into winter. Excellent cold hardiness and scab resistance. Reported to be fire blight susceptible.
<i>baccata</i> var. <i>mandshurica</i>	30'	30'	R	white/white	sgl	½"	red	SV	SV	S		Not recommended because of severe scab susceptibility.
'Barbara Ann'	20'	20'	R	pink/pink	dbl	½"	red			HS	T	Not recommended because of severe scab susceptibility.
'Baskatong'	25'	25'	R	red/red	sgl	1"	red	SL	SL			The relatively large fruits do not persist so may be messy.
'Beverly'	20'	20'	R	red/pink	sgl	⅝"	red		NS	R	R	Susceptibility to fire blight limits this tree's usefulness. The tree flowers heavily only every other year.
'Bob White'	20'	20'	R	red/white	sgl	⅝"	yel		NS	HR		The yellow fruits turn red after frost and persist well into winter. A cultivar worth considering. Attractive to many bird species.
'Brandywine'	20'	25'	R	red/pink	dbl	1½"	yel	M	M	S		The litter problem caused by the large fruits outweighs the flower display. Better cultivars are available.
'Candied Apple'	15'	15'	W	red/pink	sgl	⅝"	red		M	S		The branches are horizontal to weeping and the leaves have a tinge of red. The fruits persist into December.
'Centurion'	25'	20'	U	red/pink	sgl	⅝"	red	SV	SV	HS		A narrow, upright tree with glossy, dark green leaves. The fruits persist for about 2 months.
'Coralburst'	10'	15'	R	pink/pink	dbl	½"	brown	SV	SV	R		A dwarf cultivar useful for small spaces. The fruits are not ornamental.
'Coral Cascade'	15'	15'	W	red/white	sgl	⅜"	pink					Flowers heavily; unusual fruit color.
'Crimson Brilliant'	15'	15'	S	red/red	sgl	¾"	red			HS		The foliage has a purplish tinge. The tree is an alternate bearer and so flowers heavily only every other year.
'David'	15'	20'	R	pink/white	sgl	½"	red	M	M	HR	T	The foliage partially conceals the flowers that are borne heavily only every other year. Reported to be susceptible to fire blight.
'Dolgo'	40'	30'	R	white/white	sgl	1½"	red	M	M	HR	S	The fruits ripen in July and drop soon after. The tree is an alternate bearer.
'Donald Wyman'	20'	20'	R	pink/white	sgl	⅜"	red	M	M	R		The fruits persist in good condition throughout the winter. Reported to be fire blight susceptible.

Ornamental Traits and Susceptibility to Diseases of Crabapple Species and Cultivars *Continued*

Species and Cultivars	Hgt.	Spread	Form	Flower		Fruit size	Fruit color	Apple scab*				Comments
				Buds/Open	Type			PA	IL	OH	MI	
'Ormiston Roy'	20'	25'	S	pink/white	sgl	3/8"	yel	SL	SL	HR		The tree is upright when young but becomes more spreading with age. The fruits persist into late winter. Reported to be susceptible to fire blight.
'Pink Perfection'	20'	20'	R	red/pink	dbl	1/2"	yel			HS	S	The yellow fruits are insignificant.
'Pink Spires'	20'	10'	U	pink/pink	sgl	1/2"	red			HS		The foliage is purple in the spring.
'Prairiefire'	20'	20'	R	red/red	sgl	1/2"	red		NS	HR		The young foliage is purple, becoming dark green with purple veins with age.
'Professor Spenger'	20'	20'	U	pink/white	sgl	1/2"	orn-red	SL	SL	HR		The tree is extremely dense, and the distinctively colored fruits remain on the tree until a hard frost.
'Profusion'	20'	20'	R	red/pink	sgl	1/2"	red	SV	SV	S		The young foliage is purplish and the red fruits persist into winter.
× <i>purpurea</i> 'Eleyi'	20'	20'	R	red/red	sgl	3/4"	red			HS		The tree blooms heavily only every other year.
'Radiant'	20'	20'	R	red/pink	sgl	1/2"	red			HS	S	Another cultivar with purplish young foliage.
'Ralph Shay'	20'	30'	S	pink/white	sgl	1 5/8"	red			S		The flowers are fragrant. Heavy fruit loads cause the form to become more weeping.
'Red Baron'	20'	10'	U	red/red	sgl	1/2"	red	SV	SV	R		The dark red flowers are displayed on a narrowly upright form. The fall foliage display is bright red.
'Red Jade'	15'	15'	W	pink/white	sgl	1/2"	red	SV	SV	S	T	The red fruits persist into winter and are attractive to birds. Reported to be fire blight susceptible.
'Red Jewel'	15'	10'	U	white/white	sgl	1/2"	red	M	M	R		The bright red fruits persist into early winter then darken and stay on the tree until spring. Reported to be very fire blight susceptible.
'Red Silver'	20'	15'	R	red/red	sgl	3/4"	red			HS		Disease susceptibility and alternate year flowering limit its use.
'Red Snow'	10'	10'	W	red/white	sgl	5/16"	red					The dark green leaves are displayed on unusually long arching branches.
'Red Splendor'	20'	20'	S	red/pink	sgl	1/2"	red	VS	VS	HS		The ornamental red fruits persist into winter.
'Robinson'	25'	25'	R	red/pink	sgl	3/8"	red	SV	SV	HS		The fruits are not displayed well against the purplish foliage. Reported to be susceptible to fire blight.
'Royal Ruby'	15'	10'	U	red/pink	dbl	3/8"	red			HS	S	This double-flowered cultivar produces few fruits.
'Royalty'	15'	15'	R	red/red	sgl	1/2"	red	VS	VS	HS	S	A good choice for purplish foliage, but its use is limited by disease susceptibility (susceptible to fire blight).
<i>sargentii</i>	10'	10'	S	red/white	sgl	1/4"	red		NS	HR	T	A dense, shrubby plant that is usually wider than it is tall.
<i>sargentii</i> 'Tina'	5'	10'	S	white/white	sgl	1/4"	red		NS			A useful tree or shrub of small stature. The small fruits are ornamental but do not create a litter problem.
× <i>scheideckeri</i>	15'	10'	U	pink/pink	dbl	1/2"	yel/orn			HS		Alternate bearing and disease susceptibility limit the use of this cultivar.
'Selkirk'	20'	20'	R	pink/pink	sgl	3/4"	red	SV	SV	S		The bright red fruits are effective from mid summer into fall.
'Sentinel'	20'	15'	U	red/pink	sgl	1/2"	red	M	M	HR		A narrow, upright form with fruits that stay on the tree into winter after the leaves drop in the fall.

'Silver Moon'	20'	15'	U	pink/pink	sgl	3/8"	red		M	M	HR			This cultivar has purple foliage and a narrow, upright habit. Heavy flowering may occur only every other year. Very susceptible to fire blight.
'Snowcloud'	20'	15'	U	pink/white	sgl	1/2"	yel				HS	S		The yellow fruits are too sparse to be ornamental.
'Snowdrift'	20'	20'	R	pink/white	sgl	3/8"	orn		SV	SV	S	R		The flowers are produced in abundance and the orange fruits persist after the leaves drop off in the fall. Reported to be fire blight susceptible.
'Sparkler'	15'	25'	S	red/red	sgl	1/3"	red				HS	S		The red flowers are displayed on a very spreading growth habit.
'Spring Snow'	20'	15'	R	white/white	sgl						HS			The tree produces few to no fruits. Watch out for disease problems.
'Strawberry Parfait'	20'	25'	U	red/pink	sgl	3/8"	yel							The young foliage is reddish purple, becoming green as it gets older.
'Sugar Tyme'	20'	15'	U	red/white	sgl	1/2"	red		SL	M	HR			An oval form that is covered with white flowers in spring. The red fruits can persist until the following spring.
toringoides	25'	20'	P	white/white	sgl	3/4"	yel				HS			The pear-shaped fruits are considered to be the most ornamental feature of this tree.
tschonoskii	30'	15'	P	white/white	sgl	1"	yel		SL	SL	HR	R		The foliage is silvery in spring; in fall, it is shades of yellow, orange, red and purple. Reported to be very susceptible to fire blight.
'Van Eseltine'	20'	10'	U	pink/pink	dbl	3/4"	yel				HS	T		The flowers may be produced heavily only every other year. The fruits are neither persistent nor ornamental.
'Velvet Pillar'	20'	15'	U	pink/pink	sgl	1/2"	red				HS			The upright form is combined with purple leaves. Few fruits are produced and the plant can be used in hedges.
'White Angel'	20'	20'	R	white/white	sgl	5/8"	red		SL	SL	HR	R		The tree produces abundant crops of both flowers and fruits.
'White Cascade'	15'	15'	W	pink/white	sgl	3/8"	yel		M	M	HS			A useful tree where a weeping form is desired.
'White Candle'	15'	10'	U	pink/white	dbl	5/8"	red				HS	R		The upright form and flowering are the primary ornamental traits. Few fruits are produced.
'Winter Gold'	25'	25'	R	red/white	sgl	1/2"	yel		VS	VS	HS			The yellow fruits persist and are an outstanding ornamental trait but may be abundant only in alternate years.
'Yellow Jewel'	15'	15'	R	white/white	sgl	1/2"	yel		SV	SV				A small, shrub-like tree.
yunnanensis var. veitchii	20'	10'	U	white/white	sgl	1/2"	pur					R		The flowers are borne in dense clusters. The fruits are held erect on stiff stems.
× zumi 'Calocarpa'	20'	20'	R	pink/white	sgl	3/8"	red		SL	SL	HR	T		A rounded, spreading tree with fruits that may persist until spring. Reported to be susceptible to fire blight.

*Blank cells in the table indicate no data available.

FORM CODES

P = pyramidal
R = round
S = spreading
U = upright
W = weeping

APPLE SCAB CODES

PA = Ratings from Pennsylvania State University
Ratings are from 1985. Ratings are SL = slight, M = moderate, SV = severe, VS = very severe. Ratings were not defined in terms of how trees looked.
IL = Ratings from Morton Arboretum
Ratings are for 1986. Ratings are SL = slightly susceptible, M = moderately susceptible, SV = severely susceptible, VS = very severely susceptible, NS = not susceptible. Ratings are the worst observed under conditions that best promote the disease.

OH = Ratings from Ohio State University

Ratings listed are the worst rating for the four years 1983-1986. Rating system used is:
HR = highly resistant—no indication of disease; R = resistant—mild infection with no defoliation;
S = susceptible—medium infection with only slight defoliation; HS = highly susceptible—heavy infection often accompanied by considerable defoliation.

MI = Ratings from Michigan State University

The ratings listed are for 1976. The rating scale is R = resistant, T = tolerant (leaves become infected but no defoliation), S = susceptible (trees are defoliated).

Such fertilizers can increase susceptibility to fire blight.

Cedar-Apple Rust



Sporulating gall



Leaf spots

Cedar-apple rust is aptly named—it causes rust-colored spots on the leaves. In late summer, brownish clusters of threads or cylindrical tubes appear beneath the yellow leaf spots, or on fruits and twigs. The spores formed in the threads or tubes infect the leaves and twigs of junipers during wet, warm weather in late summer and early fall.

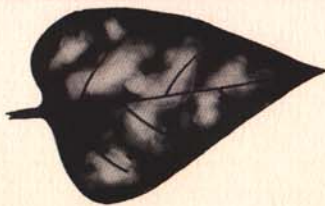
Galls and swellings on the junipers appear about seven months later and form gelatinous masses of spores after about 18 months. Rust is very conspicuous on red cedar and other junipers during

spring when the galls are covered with the orange-brown, gelatinous masses. Rust spores formed on the junipers can not affect other junipers but will infect twigs and leaves of crabapples. The galls on junipers will produce spores for only one year. The gelatinous masses are usually seen in the spring, after a period of warm, rainy weather.

This problem is less serious than the previous two and can be controlled with fungicides. Chlorothalonil (Daconil 2787) is labeled for controlling rust.

Cultural controls include getting rid of nearby junipers and planting resistant crabapple cultivars.

Powdery Mildew



Powdery mildew is the least serious of the four diseases. The white, powdery coating on the leaves may not be seen in most years. This is the only fungal disease in which the fungus grows on the surface of the plant. There it forms a superficial, white, powdery coating on leaves, buds, shoots and flower petals. The entire leaf surface may be

covered with a cottony spider webbing, most of which consists of spores ready to be blown to uninfected leaves. The fungus can easily be wiped off the surface.

Powdery mildew is a disease of mid- to late summer. It is most serious in shady, damp locations where plants are crowded, air circulation is poor and relative humidity is high. Powdery mildews flourish when days are warm and nights are cool, and when dew forms on the leaves.

The disease is easily controlled with fungicides such as benomyl (Benlate) or lime-sulfur.

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Portions of this publication were adapted from: Michigan State University, Plant Health Notes No. 3. Morton Arboretum, Plant Information Bulletin, Nos. 30-31. Ohio State University, Research Circulars 279, 284, 289, 291.

Other Publications

There are many other publications about ornamental plants available from your Cooperative Extension Service at Michigan State University. Just visit your county office for a copy of these bulletins, or write to:

MSU Bulletin Office
Michigan State University
10-B Agriculture Hall
East Lansing, MI 48824-1039

Listed below are some of the available publications that may be of interest to you.

E-786, *Fertilizing Shade and Ornamental Trees* (85¢)

E-804, *Pruning Shade and Ornamental Trees* (35¢)

E-1818, *A Gardener's Guide to Shrubs* (\$3.00)

E-1936, *Selecting Ornamental Plants for Michigan Landscapes* (Single copy free to Michigan residents)

E-1947, *Planning and Care of Ornamental Landscape Plants* (35¢)

E-1984, *Growing Perennials* (30¢)

E-2024, *Diagnosing Problems of Ornamental Landscape Plants* (65¢)

New-4:89-10M-TCM-HP, Price 50 cents.
File 26.25 (Landscaping and Ornamentals)