SUSCEPTIBILITY OF COTONEASTERS TO FIRE BLIGHT[1]

by Spencer H. Davis, Jr. and J.L. Peterson

The many species and varieties of *Cotoneaster* are planted in formal as well as informal gardens throughout the country. Many of these are selected by landscape designers based upon their knowledge of the form or growth characteristics of the perfect specimen. Others are selected at a local nursery by the homeowner who appreciates the appearance of the then-healthy shrub. When a few years later some of these *Cotoneaster* suddenly die, the attending arborist is then questioned as to cause or perhaps even held responsible for their death.

The *Cotoneaster* is a close relative of the genus *Crataegus,* and like it and other members of the rose family may be susceptible to fire blight caused by *Erwinia amylovora* Burrill. Fire blight was first reported on *Cotoneaster* in California in 1930 by Smith (2) who conducted pathogenicity studies with the organism. The first reports of the disease in the East were made by White (4) in 1932, who listed *C. dammeri, horizontalis, pannosa* and *salicifolia* as distinctly susceptible; *adpressa* and *microphylla* having marked resistance; *acuminata, dielsiana elegans, franchetii* and *simonsii* as unaffected.

Wescott (3) later indicated that some species of *Cotoneaster* are quite susceptible to fire blight while others are more resistant. She stated that *C. salicifolia* was susceptible; *C. dammeri, pannosa* and *horizontalis* were more resistant; and *C. adpressa* and *microphylla* showed marked resistance.

Wyman (5) refers to this disease when describing *Cotoneaster*; "Unfortunately they have their troubles, and therefore one would not be too enthusiastic and hasty in selecting them for conspicious places in the garden . . ." Wyman, however, does not make any further statement on the relative merits of the species and varieties regarding the disease.

In the horticultural gardens at Rutgers University in New Brunswick, a collection of *Cotoneaster* has been developed through the years. Plants varied in age from approximately seven to fifteen years and all were relatively in good vigor during the previous growing season. Being a collection of species and varieties there were only one or two specimens of each type. Since we had not anticipated the severity of fireblight this season and therefore had not programmed a rating of the plants for fireblight, no recording was made of the exact time or amount of flowering. We do realize that these factors may have contributed to the relative amount of fireblight infection.

This collection is in close proximity to plantings of *Pyracantha* and *Pyrus* which were also noted to be severely diseased this year. Bauske (1) in 1971 reported that wind and rain can account for dissemination of the causal bacteria among these genera. In the reports on susceptibility of various *Cotoneaster* species to fireblight by White (4) and Westcott (3) the authors did not give numerical ratings to their disease observations. Their descriptions of severity of disease are added to our table for comparative purposes.

Each year a minimal amount of fireblight was noted in the Rutgers planting of *Cotoneaster* until a severe outbreak made some selections completely worthless during the past year. Individual ratings of the amount of diseased material in each of the selections and ratings given here are averages of these individual ratings in late May on one or more specimens of each species or variety. Based upon our observations at Rutgers University, we would designate as more resistant the varieties: *C. adpressa, apiculata, dielsiana, faveolata, franchetii, intergerrina, nitens,* and *zabelii.* Types we would not recommend for planting are: *C. divaricata, horizontalis perpusilla, hupehensis, multiflora caloparpa,* and *racemiflora soonagorica.*

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Fire Blight Ratings on Cotoneaster Species and Varieties

Species	Variety	Common name	Fireblight ratings*		
			D-P	White	Westcott
acuminata		Tibetan	2.2	R.	
acutifolia		Peking	4.7		
adpressa		Crepping	1.0	R-S.	
apiculata		Cranberry	1.2		
conspica	*decora*	Necklace	2.0		
dammeri		Bearberry		S.	R-S.
dielsiana		Diel's	1.0	R.	
divaricata		Spreading	6.0		
faveolata		Glossy	1.7		
franchetii		Franchet	1.0	R.	
horizontalis		Rock spray	2.5	S.	R-S.
horizontalis	*davidiana*	Creeping rock spray	2.7		
horizontalis	*perpusilla*	Splendor rock spray	7.0		
hupehensis		Huph			
intergerrina		European	1.8		
lucida		Hedge	2.0		
microphylla		Small-leaved	4.2	R-S.	R.
multiflora	*calocarpa*	Large flowering	9.4		
nitens		Ko Ko Nor	1.8		
obscura		Bloodberry	2.0		
pannosa		Silverleaf	——	S.	R-S.
racemiflora	*soonagorica*	Sungari rockspray	7.2		
salicifolia		Willowleaf	——	S.	S.
simonsii		Simon's	——	R.	
zabelii		Cherryberry	1.0		

*Disease ratings in the Rutgers collection by Davis and Peterson (D-P) are the averages of ratings given by two observers. Rating of 1=no fireblight, to 10=dead. Disease ratings by White and Westcott are: R=resistant, S=Susceptible, R-S=partial resistance.

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