



# Disease and Insect Resistant Ornamental Plants

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## ROSA

## Rose

*Rosa* is a genus of woody perennials which includes dozens of species and thousands of cultivars of roses. Roses are grown all over the world and offer an extensive range of flower type, color, growth habit, and fragrance. The rose is the most popular flower in today's gardens and one of the most economically important ornamental plants in North America.

Despite their popularity, roses are hosts to many diseases and insects. Proper site selection and cultural practices, together with use of resistant cultivars will help reduce problems. Rose breeding work in North America has led to releases of better adapted roses for landscape use. However, most cultivars are susceptible to foliage diseases, especially black spot, but also powdery mildew, *Cercospora* leaf spot, and rust. More recently, rose rosette disease has become a serious threat as it continues to spread among cultivated roses in the US. While resistant cultivars are available, it is important to note that roses found resistant to disease in one location may be susceptible in another and roses that once showed resistance may eventually become susceptible due to changes in local fungal populations.



## DISEASES

**Black Spot**, caused by the fungus *Diplocarpon rosae*, occurs wherever roses are grown. It is the most significant disease problem of landscape roses and the most common cause of defoliation (4, 14, 17, 63). Favored by high humidity and wet foliage, it causes leaf spotting and rapid defoliation on susceptible cultivars, significantly reducing the ornamental value of the plant. Roses that suffer repeated infections are eventually weakened and may die.

The pathogen population varies in virulence and changes geographically and over time making it difficult to develop durable genetic resistance (63). In general, hybrid teas, grandifloras and miniature types are least resistant, and floribundas, shrub roses and climbers are more resistant or tolerant (54). Yellow- or gold-flowering roses tend to be more susceptible than red or pink ones (63).

BLACK SPOT				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa banksiae</i>		63		
<i>Rosa bella</i>		7		
<i>Rosa bracteata</i>		63	57	
<i>Rosa x calocarpa</i>		20		
<i>Rosa carolina</i>		4, 63		
<i>Rosa laevigata</i>		63		
<i>Rosa laxa</i>		4, 63		
<i>Rosa multiflora</i> *		4, 63		
<i>Rosa multiflora</i>	Japonica	7		
<i>Rosa mutabilis</i>			20	
<i>Rosa pendulina</i>		7		
<i>Rosa pimpinellifolia</i>		63		
<i>Rosa roxburghii</i>		63, 70		
<i>Rosa rugosa</i>		3, 63, 67		
<i>Rosa rugosa</i>	Albo-plena	20		
	Belle Poitevine	20		
	Blanc Double de Coubert	20, 40		
	Frau Dagmar Hastrup	20, 40		
	Hansa	27, 40, 47, 48	20	
	Marie Bugnet	40, 46		
	Thérèse Bugnet	40	20	
<i>Rosa spinosissima</i>		4		69
<i>Rosa virginiana</i>		4, 63		
<i>Rosa wichuraiana</i>		4, 7, 21, 25, 63, 70		
<i>Rosa wichuraiana</i>	Basye's Thornless	18		
<i>Rosa</i>	05-02971	44		
	05-02978	44		
	About Face			22
	AC Marie-Victorin	50		
	AC William Booth	50		
	Alba Meidiland	40		2
	Allgold	7		
	All That Jazz	40		
	Altissimo		57	
	Amber Queen			29, 35
	Americana			65

\**Rosa multiflora* is invasive and considered a noxious weed in parts of the US. In New York State, it is a prohibited plant by the Dept. of Agriculture and Markets Invasive Species Regulations ([dec.ny.gov/docs/lands\\_forests\\_pdf/isprohibitedplants2.pdf](http://dec.ny.gov/docs/lands_forests_pdf/isprohibitedplants2.pdf)). Prohibited invasive species cannot be knowingly possessed with the intent to sell, import, purchase, transport or introduce.

## BLACK SPOT

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	American Pride	35		65
	Angel Face			29
	Applejack		69	
	Aquarius		58	
	Arizona			36
	Arkansas			30, 36
	Aunt Honey	44		
	Baby Blanket	4, 36	26	
	Baby Love	40, 47		22
	Bailey Red			43
	Baronne Prevost			42
	Basye's Wichurana	4		
	Bebe Lune	57		
	Be-Bop			22
	Belinda's Dream	4, 9, 40, 47	22	43
	Betty Prior	31, 35		65
	Bing Crosby			65
	Blaze			65
	Blue Nile		58	
	Blushing Knock Out	22, 45, 46		
	Bonanza		22	
	Bonica	37		2
	Brandy	65		
	Brass Band	38		
	Brigadoon	29		
	Brite Eyes™	46, 72		
	Brite Lites	35, 46		
	Brite Lights			33
	Caldwell Pink	10, 13, 40, 42		
	Camelot		58	
	Cardinal de Richelieu			64
	Carefree Beauty	16, 17, 40, 44, 57		
	Carefree Celebration	16		
Carefree Delight	9, 29, 30, 32, 33, 36, 37, 38, 40			
Carefree Spirit	16			
Carefree Sunshine	40, 47	46, 48		
Carefree Wonder	29, 35, 36, 40			

**BLACK SPOT**

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Caribia			31
	Carrousel			65
	Cary Grant			9
	Chablis			31
	Champlain	40		
	Charles Albanel	16, 40		
	Charlotte Armstrong			65
	Chattem Centennial			65
	Cherish	36	58	29
	Chicago			31
	Chicago Peace		58	34, 35, 70
	Child's Play			33
	Choo Choo Centennial	65		
	Chorale			69, 72
	Chrysler Imperial	29, 30, 33, 34, 35		
	Chuckles	4		
	Class Act	34	58	
	Color Magic		58	
	Como Park		46	
	Coral Drift	16, 22		
	Corn Silk			65
	Coronado	57		
	Cupcake			65
	Dainty Bess		58	
	David Thompson	57		
	Delicata		20	
	De Montarville	16		
	Disco			31
	Distant Drums	40		
	Don Juan			65
	Dortmund	58		
	Double Delight		58	
	Double Joy			65
Double Knock Out	22			
Double Pink Knock Out	46			
Dublin Bay	58			
Earthsong	44			
Easy Going			22	

**BLACK SPOT**

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Electric Blanket	4		
	Electron	58		
	Ernest H. Morse	57		
	Escapade	58		
	Eureka			22
	Europeana	37, 58		
	Evening Star			65
	Everglades™	1		
	Eye Paint		58	
	Felicite Parmentier	64		
	Félix Leclerc	60		
	Fiesta		46, 48	
	Fire Meidiland	45		
	First Kiss	31		
	First Prize	65		
	F.J. Grootendorst			9
	Floradora			65
	Floral Carpet	9		
	Flower Carpet	21		
	Flower Carpet® Pink Supreme	16		
	Folklore		58	
	Forty Heroes		46	
	Forty Niner	57		
	Fourth of July	47		
	Fragrant Cloud		58	
	Fragrant Spreader	45		
	French Lace		58	
	Fuschia Meidiland		21	
	Garden Party			70
	Gene Boerner	29, 31, 35, 37		
	George Vancouver	39	69	
	Gingersnap			29
	Golden Eye	46, 48		
	Golden Showers		58	
	Gold Medal		58	
	Gourmet Popcorn			22
Granada		58		
Grand Masterpiece			33, 36	

## BLACK SPOT

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Grand Opera	57		
	Grouse™	72		
	Handel		58	
	Happy Trails	21		
	Headliner		58	
	Heart 'n' Soul			22
	Heirloom		58	
	Helmut Schmidt	58		
	Henry Kelsey	39, 40		
	Hermosa			64
	Home Run®	22, 43, 47, 48, 72	46	
	Honeysweet	44		
	Honor		58	
	Hot Cocoa			22
	Iceberg	31, 58		34
	Ice Meidiland®	27		
	Impatient	58		
	Ingrid Bergman			4
	Intrigue		58	29, 65
	Irish Gold		58	
	Ivory Drift	16, 22		
	Johann Strauss			22
	John Davis	16, 40		
	John F. Kennedy			65
	Joseph's Coat		58	65
	J.P. Connell			16
	Judy Garland			29
	Julia Child			22
	Julia Renaissance®	1		
	Just Joey	58		
	Kashmir	45, 46		
	Keepsake	58		
Kent™	1			
Knock Out®	3, 10, 22, 30, 32, 33, 37, 38, 39, 40, 42, 43, 45, 46, 48, 72			
Kolner Karneval			65	
Konigin von Danemark	40			

## BLACK SPOT

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
Rosa	Kordes Perfecta			65
	Lady			34
	Lady Elsie May			22
	Lady X			30
	Las Vegas	58		
	Leda			64
	Le Vesuve	9		
	Linda Campbell	47		2
	Little Darling		58	
	Little Eskimo			65
	Liverpool Echo	58		
	Livin' Easy	29		
	Love	58		
	Lovely Fairy	25		
	Love Potion			9
	Lucy Cromphorn	57		
	Magic Carpet	21		
	Maiden's Blush	40		
	Maréchal Niel			42
	Marina		58	
	Martha's Vineyard™	1		
	Matangi	58		
	Medallion		58	
	Midwest Living	45		
	Mirandy	34, 35		
	Misty Dawn			65
	Mme. Hardy	64		
	Moje Hammarberg	45		
	Montezuma			65
	Mr. Lincoln		58	65
	My Girl	48		
	My Hero		48	
	Mystic Meidiland®	27		
Nashville™	1			
New Dawn	10			
New Year	58			
New Zealand			4	
Northern Accents® Lena	73			
Northern Accents® Ole		73		

**BLACK SPOT**

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
Rosa	Northern Accents® Sigrid	73		
	Northern Accents® Sven		73	
	Nozomi	25	21	
	Old Blush		4	43
	Old Smoothie			31
	Olympiad		58	
	Orangeade	58		
	Orange Honey			65
	Oregold			65
	Palmengarten Frankfurt	22, 47	48	
	Paprika™	45, 72		
	Paradise		58	
	Pariser Charme			72
	Pascali		58	
	Paul Neyron			42
	Peace		58	35, 65
	Peach Cream™	72		
	Peach Drift	16, 22		
	Pearlie Mae	44		
	Perle d'Or	42		
	Peter Frankenfeld	58		
	Pink Drift	16	22	
	Pink Grootendorst	27		
	Pink Double Knock Out®	45		
	Pink Knock Out®	22, 23, 45, 46, 47, 48, 72		
	Pink Meidiland			2
	Pink Pavement	40		
	Pink Pet	27		
	Play Girl	58		
	Play Boy	58		
	Pleasure			35
	Polarstern	58		
	Prairie Harvest	40		
	Prairie Sunrise	40		
Precious Platinum	58			
Pretty Lady		22		
Pride N Joy	31, 36			
Princess Margaret		58		



## BLACK SPOT

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Pristine		58	
	Prominent		58	
	Purple Pavement	40		
	Queen Elizabeth		58	
	Queen of Sweden	4		
	Rabble Rouser			22
	Ragtime™	1		
	Rainbow Knock Out®	22, 72		
	Ralph's Creeper	21, 27		
	Razzle Dazzle			65
	Red Cascade™	10, 25, 27		
	Red Climber	39		
	Red Devil		58	
	Red Drift	16, 22		
	Red Gold	35, 58		
	Red Knock Out®	47		
	Redwood™	1		
	Regensberg	58		
	Rockin' Robin			22
	Rosa Mundi	64		
	Royal Edward	59		
	Royal Highness			65
	Royal Sunset	58		
	Rugosa Ottawa	66		
	S-504	45		
	Santa Barbara™	1		
	Sarabande	58		
	Saratoga	31, 37		
	Scabrosa	20		
	Scarlet Meidiland			2, 16
	Schneezwerg (Snowdwarf)		20	
	Sea Foam	10, 13, 42	69	
	Secret	35, 34		31
	Senorita	35		34
	Sexy Rexy	31, 58		
	Shocking Blue		58	
Showbiz	58		29	
Shreveport	34	58	65	

## BLACK SPOT

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Silver Jubilee	58		
	Silver Spoon			31
	Simon Fraser	40		
	Simplicity	57		
	Singin' In The Rain			34
	Sir Thomas Lipton	10, 13		
	Snowy Pavement	40		
	Sophia Renaissance®	1		
	Spellcaster			36
	Sphinx	57		
	Sun Flare		58	
	Sunny Knock Out®	16		
	Sunsprite	47	58	
	Super Hero		46, 48	
	Sutter's Gold			65
	The Bishop	64		
	The Fairy	9, 10, 13, 42		
	The Mayflower	4		
	Tiara	57		
	Tiffany		58	65
	Tiger Tail			35
	Topaz Jewel	47		
	Touch of Class		58	
	Tournament of Roses	58		
	Tribute			65
	Tropicana			65, 69
	Trumpeter	58		
	Trumpeter® (MACtrum)			42
	Tumbling Waters™			
	Viva	58		30
	Voodoo	58		
	Westerland® (KORlawe)			42
	White Dawn	46, 48		
White Drift	16			
White Flower Carpet		21		
White Masterpiece			65	
White Meidiland		22		
Widow of the South	45			

BLACK SPOT				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Wildberry Breeze	46, 47, 48		
	Wild Spice	47	46, 48	
	Wild Thing		46, 48	
	William Baffin	40		
	Yankee Doodle			65
	Yellow Submarine™	72		

**Cercospora Leaf Spot** caused by *Cercospora rosicola* is a fungal disease that occurs wherever roses are grown in North America (63). Often mistaken for black spot, *Cercospora* causes small spots that enlarge and coalesce into irregularly-shaped purple to reddish brown areas. Severe infections can cause defoliation.

CERCOSPORA LEAF SPOT				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa mutabilis</i>		24		
<i>Rosa wichuraiana</i>		24, 25		
<i>Rosa</i>	05-02971	45		
	05-02978	45		
	About Face	22		
	Alba Meidiland			2
	Baby Love	22, 47		
	Be-Bop	22		
	Belinda's Dream	22, 47		
	Betty Prior	24		
	Blushing Knock Out	22, 45, 46		
	Bonanza	22		
	Bonica	24		2
	Brite Eyes™	46		
	Carefree Beauty™			43
	Carefree Delight			24
	Carefree Sunshine	47	48	46
	Carefree Wonder	24		
	Cherry Meidiland	24		
	Como Park		46	
	Coral Drift		22	
	Double Delight	24		
Double Knock Out	22	46		
Easy Going	22			
Easy Livin'	24			

**CERCOSPORA LEAF SPOT**

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
Rosa	Eureka	22		
	Fiesta		46, 48	
	Fire Meidiland®	27, 45		24
	First Light	24		
	Flower Carpet			24
	Forty Heroes		46	
	Fourth of July	47		
	Fragrant Spreader	45		
	Fuchsia Meidiland®	27		24
	Golden Eye	46, 48		
	Gourmet Popcorn	22		
	Hansa	24, 46, 47, 48		
	Happy Trails			24
	Heart 'n' Soul	22		
	Home Run®	22, 47	46, 48	43
	Hot Cocoa	22		
	Ivory Drift	22		
	Jeepers Creeper	24		
	Johann Strass	22		
	Julia Child	22		
	Kashmir	45, 46		
	Knock Out®	22, 45, 46, 48		
	Lady Elsie May	22		
	Linda Campbell	47		2
	Lovely Fairy	22		
	Magic Carpet	24		
	Midwest Living	45		
	Moje Hammarberg	45, 46		
	My Girl	46, 48		
	My Hero		46, 48	
	Mystic Meidiland	24		
	Nearly Wild	24		
	Nozomi	24, 25		
	Palmengarten Frankfurt	47	22, 46, 48	
Paprika	45			
Peach Drift	22			
Pearl Meidiland	24			
Perle d'Or			43	

### CERCOSPORA LEAF SPOT

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Petite Pink Scotch			21, 24
	Pink Drift	22		
	Pink Double Knock Out®	45, 46		
	Pink Grootendorst	24		
	Pink Knock Out®	22, 23, 45, 46, 47, 48		
	Pink Meidiland			2
	Polar Ice™	27		24
	Pretty Lady	22		
	Rabble Rouser	22		
	Rainbow Knock Out®	22		
	Ralph's Creeper	24		
	Red Cascade	24, 25		
	Red Drift	22		
	Red Knock Out®	47		
	Rockin' Robin	22		
	Royal Bonica	24		
	S-504	45		
	Scarlet Meidiland			2
	Sea Foam	24		
	Sevillana	24		
	Sunsprite	47		
	Super Hero		46, 48	
	The Fairy			21, 24
	Topaz Jewel	47		
	White Dawn	46, 48		
	White Flower Carpet			24
	White Meidiland	22		
	Widow of the South	45		
	Wildberry Breeze	46, 47, 48		
	Wild Spice	47	46, 48	
Wild Thing		46, 48		

**Powdery Mildew** caused by *Sphaerotheca pannosa* var. *rosae* is a widely distributed fungal disease of greenhouse-, garden-, and field-grown roses (54). The most common symptom is powdery white growth on leaf surfaces. Favored by warm temperatures, high humidity, shade and poor air circulation, severe infections reduce photosynthetic efficiency and growth, as well as aesthetic value. Resistant cultivars are available, but many do not retain a high level of resistance likely due to development of new races of *S. pannosa* (40).

POWDERY MILDEW				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa x calocarpa</i>		20		
<i>Rosa rugosa</i>	Albo-plena	20		
	Belle Poitevine	20		
	Blanc Double de Coubert	20		
	Frau Dagmar Hastrup	20		
<i>Rosa</i>	About Face	22		
	AC DeMontarville	50		
	AC Marie-Victorin	50		
	AC William Booth	50		
	Altissimo		58	
	American Beauty	11		
	Annie's Red	11		
	Aquarius		58	
	Baby Love	22		
	Baronne Prevost	11, 42		
	Baty's Pink Pillar	11		
	Be-Bop	22		
	Belinda	11		
	Belinda's Dream	11, 22		
	Blue Nile		58	
	Blushing Knock Out	22		
	Bonanza	22		
	Bonica	11	58	
	Buff Beauty	11		
	Caldwell Pink	11, 42		
	Camelot		58	
	Carefree™	19		
	Carefree Beauty	16		
	Carefree Celebration	16		
	Carefree Spirit	16		
	Cecile Brunner	11		
Coral Drift	16, 22			
Cherish		58		

POWDERY MILDEW				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Charles Albenel	16		
	Chicago Peach		58	
	Class Act	58		
	Color Magic		58	
	Comtesse du Cayla	11		
	Consuelo	11		
	Coral Drift	16		
	Dainty Bess		58	
	Dame de Coeur	11		
	De Montarville	16		
	Don Juan	11		
	Dortmund	11, 58		
	Double Delight	11	58	
	Double Knock Out	22		
	Drift™	19		
	Dublin Bay	58		
	Easy Going	11, 22		
	Electron	58		
	Else Poulsen	11		
	Escapade		58	
	Eureka	22		
	Europeana	11	58	
	Eye Paint		58	
	Félix Leclerc	60		
	Flower Carpet® Pink Supreme	16		
	Folklore		58	
	Fragrant Cloud	11	58	
	Francis Dubreuil	11		
	French Lace		58	
	Gartendirektor Otto Linne	11		
	George Vancouver	39		
	Golden Showers		58	
	Gold Medal	11	58	
	Gourmet Popcorn	22		
Graham Thomas	11			
Granada			58	
Handel		58		

**POWDERY MILDEW**

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Headliner			58
	Heart 'n' Soul	22		
	Heirloom		58	
	Helmut Schmidt		58	
	Henry Kelsey	39		
	Hermosa	11		
	Home Run®	19, 22		
	Honor		58	
	Hot Cocoa	22		
	Iceberg	11	58	
	Impatient	58		
	Intrigue		58	
	Irish Gold		58	
	Ivory Drift	16, 22		
	Johann Strass	22		
	Joseph's Coat		58	
	Juane Desprez	11		
	Julia Child	22		
	Just Joey	58		
	Katy Road Pink	11		
	Keepsake	58		
	Knock Out®	11, 19, 22, 39, 42		
	Lady elsie May	22		
	La France	11		
	Lafter	11		
	Las Vegas	58		
	Little Darling		58	
	Liverpool Echo	58		
	Livin' Easy	11		
	Love	58		
	Lovely Fairy	22		
	Madam Antoine Mari	11		
	Madame Alfred Carriere	11		
Madame Gregorie	11			
Magic	9			
Maggie	11			
Maman Cochet	11			



**POWDERY MILDEW**

Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Marchesa Boccella	11		
	Maréchal Niel	11, 42		
	Marie Daly	11		
	Marina		58	
	Matangi	58		
	Medallion		58	
	Monsieur Tillier	11		
	Mr. Lincoln	11	58	
	Mrs. B.R. Cant	11		
	Mrs. Dudley Cross	11		
	Mutabilis	11		
	Natchitoches Noisette	11		
	New Day		58	
	New Year		58	
	Oklahoma	11		
	Olympiad		58	
	Orangeade		58	
	Palmengarten Frankfort	22		
	Paradise		58	
	Pascali		58	
	Paul Neyron	42		
	Paul's Pink	9		
	Peace	11	58	
	Peach Drift	16		
	Perle d'Or	11, 42		
	Peter Frankenfeld		58	
	Pink Drift	16, 22		
	Pinkie	11		
	Pink Knock Out®	22		
	Play Girl	58		
	Play Boy	58		
	Polarstern		58	
	Precious Platinum		58	
	Pretty Lady	22		
Princess Margaret		58		
Pristine		58		
Prominent		58		
Queen Elizabeth	11	58		

POWDERY MILDEW				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Rabble Rouser	22		
	Rainbow Knock Out®		22	
	Raspberry Twist	11		
	Red Cascade	11		
	Red Climber	39		
	Red Devil		58	
	Red Drift	16, 22		
	Red Gold		58	
	Red Ribbon	11		
	Regensberg	58		
	Reve d'Or	11		
	Rockin' Robin	22		
	Rugosa Ottawa	66		
	Royal Edward	59		
	Royal Sunset	58		
	Sarabande	58		
	Scabrosa	20		
	Sea Foam	11, 42		
	Sexy Remy	58		
	Shocking Blue		58	
	Showbiz	11, 58		
	Shreveport		58	
	Silver Jubilee	58		
	Sombreuil	11		
	Sun Flare	11	58	
	Sunny Knock Out®	16		
	Sunsprite		58	
	The Fairy	11, 42		
	Tiffany		58	
	Touch of Class			58
	Tournament of Roses	11, 58		
	Tropicana	11		
	Trumpeter® (MACtrum)	11, 42, 58		
Viva	58			
Voodoo	58			
Westerland® (KORlawe)	11, 42			
White Drift	16			
White Meidiland	22			

**Rust** on roses is caused by multiple species of the fungus genus *Phragmidium*. In the US, the most common rust species is *P. mucronatum*, and rose is the only known host (40). It occurs occasionally in western states under cool, wet conditions, and rarely in central and eastern states (54). Severe infestations may result in heavy defoliation.

RUST				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Altissimo	58		
	Aquarius		58	
	Arlene Francis			40
	Aztec			40
	Baby Blaze			40
	Betsy McCall			40
	Blue Moon			40
	Blue Nile	58		
	Bonica	58		
	Buccaneer			40
	Camelot		58	
	Carefree Spirit	16		
	Cherish	58		
	Christopher Stone			40
	Class Act	58		
	Chicago Peach		58	
	Chrysler Imperial			40
	Circus			40
	Color Magic		58	
	Confidence			40
	Coral Drift	16		
	Dainty Bess		58	
	Dearest			40
	Dortmund	58		
	Double Delight		58	
	Dublin Bay	58		
	Electron	58		
	Elizabeth of Glamis			40
	Embers			40
	Escapade		58	
	Europeana	58		
	Eye Paint	58		
	Folklore		58	
Fragrant Cloud	58		40	
French Lace		58		

RUST				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
Rosa	Fusilier			40
	Golden Girl			40
	Golden Masterpiece			40
	Golden Showers		58	
	Gold Medal		58	
	Grenada		58	
	Handel	58		
	Headliner		58	
	Heat Wave			40
	Heirloom		58	
	Helen Traubel			40
	Helmut Schmidt	58		
	Honor		58	
	Iceberg	58		
	Impatient	58		
	Intrigue	58		
	Irish Gold		58	
	Ivory Drift	16		
	Jeanie			40
	Josephine Bruce			40
	Joseph's Coat		58	
	Just Joey	58		
	Keepsake	58		
	Kordes Perfecta			40
	Las Vegas	58		
	Little Darling		58	
	Liverpool Echo	58		
	Love	58		
	Marina	58		
	Matangi	58		
	Medallion		58	
	Montezuma			40
	Mr. Lincoln		58	
	New Day	58		
New Year	58			
New Yorker			40	
Nocturne			40	
Olympiad	58			
Orangeade		58		

RUST				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Paradise		58	
	Pascal	58		
	Peace		58	40
	Peach Drift	16		
	Peter Frankenfield	58		
	Piccadilly			40
	Pink Drift	16		
	Pink Peace			40
	Pink Radiance			40
	Playgirl	58		
	Playboy	58		
	Polarstern	58		
	Precious Platinum	58		
	Princess Margaret	58		
	Pristine	58		
	Prominent	58		
	Queen Elizabeth		58	40
	Red Devil	58		
	Red Drift	16		
	Redgold	58		
	Regensberg	58		
	Royal Sunset	58		
	Sarabande	58		
	Sexy Rxy	58		
	Shocking Blue		58	
	Showbiz	58		
	Shreveport		58	
	Silver Jubilee	58		
	Siren			40
	Spartan			40
	Sun Flare	58		
	<b>Sunsprite</b>		58	
	Sutter's Gold			40
Talisman			40	
The Doctor			40	
Tiffany		58		
Touch of Class	58			
Tournament of Roses	58			

RUST				
Species/Hybrids	Cultivar	Reference		
		Resistant	Intermediate	Susceptible
<i>Rosa</i>	Trumpeter	58		
	Virgo			40
	Viva	58		
	Vogue			40
	Voodoo	58		
	Wendy Cussons			40
	White Drift	16		
	White Knight			40
	White Swan			40

## INSECTS

**Chilli Thrips**, *Scirtothrips dorsalis*, is native to southern Asia and was first discovered on roses in the US in Florida in 2005. It was found on roses in Texas in 2007 and on Knock Out roses in Louisiana in 2009 (61). It is becoming a major pest on many species causing severe scarring of leaves, stems, and fruits and is a vector of several viruses that produce plant disease (12). In one study, researchers in Florida observed damage on all cultivars, but there were significant differences in severity. Lowest damage severity was reported for ‘Mrs. B.R. Cant’, ‘Old Blush’, and ‘Bailey Red’. The most feeding damage was reported on ‘Spice’, ‘Duchesse de Brabant’, and ‘Mutabilis’ (43).

**Japanese Beetle**, *Popillia japonica*, is a common foliage feeder of many landscape plants. Roses are highly susceptible and significant resistance has not been reported (41, 28, 55). One study compared relative susceptibility to defoliation among 53 rose cultivars and found all were severely defoliated under heavy beetle pressure—under moderate pressure ‘Dynasty’, ‘Headliner’, and ‘Milestone’ hybrid tea roses sustained less damage than others (56). Another study evaluated susceptibility of Rosa ‘Radrazz’ Knock Out™, Rosa ‘Crimson Bouquet’, and Rosa ‘Love and Peace’. All were found to be susceptible to Japanese beetle adult feeding (68).

**Rose Stem Girdler**, *Agilus cuprescens*, also known as bronze cane borer, is a non-native species that has several hosts, including raspberries, blackberries, currants, and roses (12). Rosa ‘Thérèse Bugnet’ is extremely susceptible (20).

## VIRUSES

**Rose Rosette Disease (RDD)**, is caused by the *Emaravirus Rose rosette virus* (RRV) and vectored by the eriophyid mite *Phyllocoptes fructiphilus*. The virus and mite are specific to *Rosa* spp. – no other hosts have been identified (51).

Rose rosette disease has spread throughout much of the US on *R. multiflora*, a common host, and other wild roses. The disease has recently been identified as the cause of widespread death of roses in the midwestern and eastern sections of the US and a reduction in the use of roses in the landscape (5).

Symptoms may vary by cultivar, but often include witches’ broom/rosette-type growth, excessive thorns, discolored and distorted growth, and eventual death of the plant (53). There is no confirmed resistance among commercial rose cultivars (5, 6, 49, 52, 62, 71). However, research is underway to identify rose species/cultivars that are resistant or tolerant to RRD. Scientists at Texas A & M University, University of Delaware, Oklahoma State University and the University of Tennessee found over 90% of roses in their evaluations appear to be susceptible to RRD. Studies will continue to confirm resistance of the selections not showing symptoms (5).

Researchers at the University of Arkansas screened 20 cultivars for mite and/or virus resistance. Cultivar 'Stormy Weather' showed resistance to the virus in both mite and grafting transmission experiments. While further testing is required, including under field conditions, 'Stormy Weather' may have potential for use in areas with high disease incidence or as a source of resistance in breeding programs (15).

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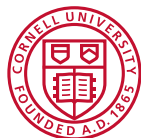
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## OTHER RESOURCES

"Missouri Botanical Garden." [missouribotanicalgarden.org](http://missouribotanicalgarden.org)

"Woody Plants Database." *Urban Horticulture Institute*, Cornell University, [woodyplants.cals.cornell.edu/plant/search](http://woodyplants.cals.cornell.edu/plant/search)



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