

Fruit Diseases

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Disease Susceptibility of Common Apple Cultivars

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Cultivated varieties (cultivars) of apples vary widely in their responses to different diseases. The primary diseases that affect apple production include apple scab, fire blight, powdery mildew, and the juniper rusts (including cedar-apple rust, cedar-quince rust, and cedar-hawthorn rust).

The most popular commercial apple varieties are particularly susceptible to one or more of these diseases. However, breeding programs have been created to develop apple varieties that are resistant to one or more of these most common diseases — such varieties are highlighted and in bold in the table below, and are recommended to the home apple grower as a way to reduce pesticide applications.

The table below rates the resistance of 88 common apple varieties and four edible crabapple varieties. The ratings, compiled from a number of sources listed at the end of this publication, are meant to guide growers in selecting the best varieties for their particular operations and needs.

It is important to remember that resistance is not immunity. Even highly resistant varieties can succumb to any disease under extreme environmental conditions and stress.

Rating Scale

In the table below, the following abbreviations are used to describe each variety's susceptibility:

VR=Very Resistant

R= Resistant

MR=Moderately Resistant

VS= Very Susceptible

S=Susceptible

MS=Moderately Susceptible

N/A=Data not available

Apple Cultivar	<i>Resistance Ratings for:</i>			
	Apple Scab	Fire Blight	Juniper Rusts*	Powdery Mildew
Adam's Permain	MR	MR	R	S
Akane	R	MR	MR	R
Ambrosia	VS	S	S	R
Ashmead's Kernel	MR	MR	R	S
Baldwin	S	S	VR	VS
Beacon	S	S	S	MR
Belmac	R	N/A	R	MR
Braeburn	S	VS	S	S

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Apple Cultivar	<i>Resistance Ratings for:</i>			
	Apple Scab	Fire Blight	Juniper Rusts*	Powdery Mildew
Britegold	R	R	S	R
Cameo	S	S	S	R
Cortland	VS	S	S	S
CrimsonCrisp	VR	MR	S	MR
Delicious (Red)	S	R	VR	MR
Dayton	VR	R	MR	MR
Early McIntosh	S	R	R	MR
Empire	VS	R	R	S
Enterprise	VR	R	R	S
Florina (Querina)	R	MR	VS	MR
Freedom	VR	VR	R	R
Fuji	S	VS	R--VS	R
Gala	VS	VS	R--S	MS
Ginger Gold	VS	VS	VS	S
Golden Delicious	S	S	S	VS
GoldRush	VR	MR	S	S
Granny Smith	S	VS	R	VS
Gravenstein	S	S	VR-VS	VS
Grimes Golden	R	S	R	MR
Haralson	MR	R	MR	MR
Honey Crisp	MR	R	S	S
Honey Gold	R	VS	S	R
Idared	S	VS	VS	S
Jerseymac	VS	S	VR	S
Jonagold	S	VS	R	S
Jonamac	S	S	R	S
Jonathan	S	VS	S	VS
Julyred	VS	S	S	VS
Liberty	VR	R	VR	R
Lodi	S	VS	MS	R
Macfree	R	MR	R	MR
Macoun	VS	S	R	MR
McIntosh	VS	S	VR	MR
Melrose	VS	MR	R	N/A
Milton	S	S	VR	S
Moira	R	S	R	S
Mollies Delicious	S	S	VR	N/A
Murray	R	MR	R	R
Mutsu (Crispin)	VS	VS	S	S
Newtown Pippon	S	MS	R	S
NJ90	MR	S	R	R
Northern Spy	S	S	S	S
Nova Easygrow	VR	MR	S	R
Novamac	VR	VR	VR	VR
Nova Spy	R	N/A	S	MR

Apple Cultivar	<i>Resistance Ratings for:</i>			
	Apple Scab	Fire Blight	Juniper Rusts*	Powdery Mildew
Paulared	R	VS	R	MR
Pink Lady	VS	VS	R	R
Pinova (Corrail)	R	MR	S	R
Prima	VR	MS	VS	R
Priscilla	VR	R	R	MR
Pristine	VR	R	S	R
Puritan	S	VS	S	S
Redfree	R	MR	VR	MR
R.I. Greening	S	VS	S	S
Rome Beauty	VS	VS	VS	VS
Roxbury Russet	S	R	S	S
Runkel	R	R	R	R
Scarlet O'Hara	VR	S	R	MR
Silken	VS	N/A	VS	S
Sir Prize	VR	S	S	MR
Spijon	S	S	S	S
Stark Bounty	S	R	S	S
Stark Splendor	S	R	S	S
Starkspur Earliblaze	S	S	MR	R
Stayman	VS	S	S	VS
Summerred	S	S	S	S
Suncrisp	MS	VS	MS	MS
Sundance	VR	R	R	MR
Trent	VR	MR	R	R
Viking	S	R	R	R
Wayne	S	S	S	S
Wealthy	S	S	VS	S
Wellington	S	R	R	S
William's Pride	VR	R	VR	R
Winesap	VS	S	R	R
Winter Banana	VS	S	S	S
Wolf River	R	MS	MR	R
Yellow Transparent	MR	VS	MR	MR
York Imperial	S	VS	S	S
Zestar!	MS	MS	S	R
<i>Edible Crabapples</i>				
Chestnut	MR	R	R	R
Dolgo	S-R	R	MR	R
Firecracker	MR	R	R	R
Whitney	R	MR	MR	R

* Juniper rusts include cedar-apple rust, cedar-quince rust, and cedar-hawthorn rust. Cultivars may be resistant to one rust disease, but susceptible to another. In such cases, the varieties were scored simply as "Susceptible" if susceptibility to any rust species was identified.

Additional Resources

For more about the apple diseases in this table, please refer to the following Purdue Extension publications:

BP-1-W, *Apple Scab on Tree Fruit in the Home Orchard*,
www.ces.purdue.edu/extmedia/BP/BP-1-W.html

BP-30-W, *Fire Blight*, www.ces.purdue.edu/extmedia/BP/BP-30.html

Sources

Data for this publication was compiled from the following sources:

2006 Evaluation of Meig's NE-183 and NE-140 plantings.

Aldwinckle, H. S. (1974). Field susceptibility of 41 cultivars to cedar apple rust and quince rust. *Plant Disease Reporter* 58:696-699.

McVay, J.R., J. F. Walgenbach, E. J. Sikora, and T.B. Sutton (Eds.). (1993). *A Grower's Guide to Apple Insects and Diseases in the Southeast*. Alabama Cooperative Extension Service, Auburn University, Circular ANR-838.

Rosenberger, D.A. (1990). Apple disease management section. *Management Guide for Low-Input Sustainable Apple Production*. A publication of the USDA Northeast LISA Apple Production Project and Cornell University, Rodale Research Center, Rutgers University, University of Massachusetts, and University of Vermont.

Rosenberger, D.A. (2003). Susceptibility of new apple cultivars to common apple diseases. *New York Fruit Quarterly*, 11(2): 17-22.

Travis, J.W., and J. Ritter. (2006). Scab Resistant Cultivars, Table 1-6. *Penn Tree Fruit Production Guide*.

