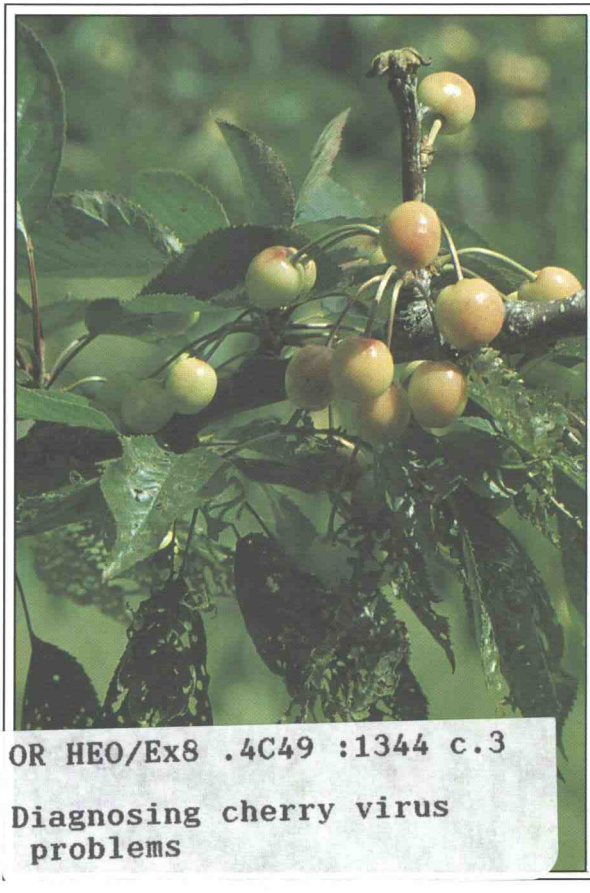
EC 1344 • April 1991 $ 3.25

DIAGNOSING CHERRY VIRUS PROBLEMS



OREGON STATE UNIVERSITY
EXTENSION SERVICE

Cherry virus problems

Cherry Rasp Leaf (note enations on underside of leaf).

Cherry Rusty Mottle

Cherry Twisted Leaf

Prunus Necrotic Ring Spot (note shothole symptom).

Little Cherry (note uneven fruit ripening of lower branch).

Necrotic Rusty Mottle

Prune Dwarf (virus-infected branch on right compared with healthy branch on left).

Cherry Mottle Leaf

Diagnosing Cherry Virus Problems

J.W. Pscheidt, D.L. Moore, J.L. Olsen, and L.E. Long

This publication has been compiled to help growers and field representatives identify virus problems of sweet cherry. Table 1 relates cultivar susceptibility to various viruses; table 2 summarizes common symptoms expressed in the field.

The severity or expression of these symptoms depends on the cultivar, the time of year, and the weather conditions. A number of virus diseases reduce fruit quality and yield. Once infected, the only effective control method is tree removal.

Distinctive patterns such as rings or mosaics are usually caused by viruses. Virus-infected trees usually occur in small spots or groups in the orchard. Some trees will have virus symptoms year to year, and the virus may spread to adjacent trees.

At other times, symptoms may seem to disappear for one or more years—but the tree is still infected, and the virus can still be spread to other trees. Trees can also be infected at the same time by more than one virus, and this can complicate diagnosis.

A number of factors may cause symptoms or distortions that resemble viral diseases—mineral deficiencies or excesses, herbicide injury, air pollution, or the effects of low temperatures.

Control of viruses varies from grower to grower. Plan your control program in consultation with your field representative or your county agent of the OSU Extension Service.

You can obtain detailed information from these sources:

1. *Pacific Northwest Plant Disease Control Handbook,* a Pacific Northwest Extension publication (latest edition; published annually). Order from either of these addresses:

   Publications Orders
   Agricultural Communications
   Oregon State University
   Admin. Services Bldg. 422
   Corvallis, OR 97331-2119
   $15.00 plus $2.25 shipping and handling

   Bulletin Office
   Cooperative Extension,
   Cooper Publications Bldg.
   Washington State University
   Pullman, WA 99164-5912
   $17.25 postpaid

2. *Virus Diseases and Noninfectious Disorders of Stone Fruits in North America,* USDA Agriculture Handbook 437 (1976).
3. Johnson, Dennis A., and others, *Field Guide to Sweet Cherry Diseases of Washington,* Washington State University Coooperative Extenson publication EB 1323 (Pullman, 1985). $2.50 per copy; order from the WSU address in #1.

Jay W. Pscheidt, Extension plant pathologist; Daniel L. Moore, senior research assistant, Botany and Plant Pathology; Jeffery L. Olsen, Extension agent, Yamhill County; and Lynn E. Long, Extension agent, Wasco County; Oregon State University.

Table 1.—Cherry cultivar susceptibility (S = severe; M = mild; 0 = no symptoms, but is a carrier; V = variable; + = occurs on this cultivar; ? = unknown; Sh = may show shock symptoms within a few years after planting, but are symptomless carriers).

Cultivar	Cherry mottle leaf	Cherry rasp leaf	Cherry rusty mottle	Cherry twisted leaf	Little cherry	Lambert mottle	Necrotic rusty mottle	Prune dwarf	Prunus necrotic ring spot
Bada	V	?	?	?	?	0	0	Sh	+
Bing	S	+	S	S	V	0	S	Sh	+
Black Republican	M	+	M	?	?	0	M	Sh	+
Black Tartarian	M	?	M	0	?	0	M	Sh	+
Corum	S	+	?	M	?	S	S	Sh	+
Lambert	M	+	M	S/M	S	S	S	Sh	+
Rainier	0	?	?	S	V	+	M	Sh	+
Royal Ann	M	+	M	S/M	M	0	0	Sh	+
Van	M	+	?	V	S	+	M	Sh	+

Table 2—Cherry virus symptoms (Yes or No)

Symptoms	Cherry mottle leaf	Cherry rasp leaf	Cherry rusty mottle	Cherry twisted leaf	Little cherry	Necrotic rusty mottle	Prunus necrotic ring spot — Rugose mosaic	Prunus necrotic ring spot	Prune dwarf
Best time to see symptoms	early in the growing season	between bloom and harvest	between bloom and harvest	early in the growing season	near harvest	5-8 weeks after bloom	near harvest	late spring	3-4 weeks after bloom
Leaf chlorosis (yellowing)		N	Y	N	N	Y		Y	
Irregular	Y		Y						
Rings			Y					Y	
Leaf necrosis (dead tissue)	N	N		Y	N	Y			
Under midrib				Y					
Large spots or areas							Y		
Spots							Y	Y	
Shothole		N	Y	N	N	N	Y	Y	
Leaf distortion		Y		Y	Y				
Puckering	Y								
Enations (overgrowth)		Y					Y		
Rough texture	Y								Y
Twisted, asymmetric				Y					
Short spurs				Y					
Narrow									Y
Leaf coloration									
Early fall color			Y						
Red purple leaves					Y				
Fruit damage									
Delayed fruit ripening	Y		Y		Y		Y		
Pointed	N				Y				
Bitter, off-flavor		Y				Y			
Branches without fruit									Y
Shoots and stems									
Shortened internodes							Y		
Methods of spread vector	? Scale mite	Dagger nematode	Leaf hopper	?	Apple mealy bug	?	Pollen	Pollen	Pollen
Control									
Tree removal	Y	Y	Y	Y	Y	Y	Y	N	young Y old N
Vector control	?	Y	Y	?	Y	?	N	N	N

The Oregon State University Extension Service educates Oregonians by delivering research-based, objective information to help them solve problems, develop leadership, and manage resources wisely.

Extension's agriculture program provides education, training, and technical assistance to people with agriculturally related needs and interests. Major program emphases include food and fiber production, farm business management, marketing and processing of agricultural products, and resource use and conservation.

Extension Service, Oregon State University, Corvallis, O.E. Smith, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.