



Major Grapevine Diseases: Fanleaf and Leafroll





WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS074E









Preventing the Spread of Grapevine Diseases

Preventing the spread of grapevine diseases is an important part of maintaining a productive and profitable wine industry. Currently, there are over 70 viruses and virus-like diseases that have reportedly infected grapevines. Of these, grapevine fanleaf and leafroll are the two major diseases affecting wine grape production in Washington State.

The chart below provides a quick field guide for recognizing and differentiating between these two diseases, as well as for recognizing nutrient deficiency and genetic abnormalities, which have very similar symptoms.

For more details on these diseases, see the WSU Grapevine Leafroll Disease Bulletin EB2027E and <http://wine.wsu.edu/virology/>.

FANLEAF	LEAFROLL
HOW DISEASES AFFECT CROPS	
<p>Vines become weak and less productive</p> <p>Berries become uneven in size</p> <p>Yield loss can go up to 80%</p>	<p>Smaller fruit clusters</p> <p>Delayed fruit ripening</p> <p>Poor berry color in red varieties</p> <p>Decreased sugar levels</p> <p>Decline in production</p>
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Pinot Noir</p>  <p>healthy infected</p> </div> <div style="text-align: center;"> <p>Chardonnay</p>  <p>healthy infected</p> </div> </div>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Cabernet Sauvignon</p>  <p>healthy infected</p> </div> <div style="text-align: center;"> <p>Chardonnay</p>  <p>healthy infected</p> </div> </div>

FANLEAF	LEAFROLL
WHEN AND WHAT TO LOOK FOR	
<p>Best seen in spring, around flowering and fruit set, while pruning</p> <p>Deformed leaves, vein-banding, yellow mosaic, ring and line patterns, flecks</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Pinot Noir</p>  <p>healthy infected</p> </div> <div style="text-align: center;"> <p>Chardonnay</p>  <p>healthy infected</p> </div> </div>	<p>Best seen in fall</p> <p>Red varieties: green veins and reddening between veins</p> <p>White varieties: mild yellowing</p> <p>Downward rolling of leaves</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Merlot</p>  </div> <div style="text-align: center;"> <p>Chardonnay</p>  </div> </div>
DON'T BE FOOLED	
<p>Typically not visible in fall</p> <p>Mistaken for herbicide injury, insect feeding damage, and genetic disorders</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>herbicide injury</p>  </div> <div style="text-align: center;"> <p>genetic disorder</p>  </div> </div>	<p>Mistaken for discolorations due to mechanical or winter damage to the trunk</p> <p>Similar symptoms seen with nutritional deficiency</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>nutritional deficiency</p>  </div> <div style="text-align: center;"> <p>mechanical damage</p>  </div> </div>
YOUR PART IN PREVENTION: START CLEAN, STAY CLEAN	
<p>Make sure cuttings sourced from nurseries are certified virus free.*</p> <p>Do not compromise on the quality of cuttings.</p> <p>Determine quality of cuttings by getting them tested for viruses—for advice, contact Naidu Rayapati.</p> <p>Monitor new plantings and rogue infected vines as soon as possible.</p> <p>Apply insecticides to eliminate insect vectors that spread leafroll disease.**</p> <p>*A list of certified nurseries can be found at http://wine.wsu.edu/research-extension/nwgfs/certified/.</p> <p>**See the WSU Grapevine Leafroll Disease Bulletin EB2027E and the 2012 Pest Management Guide for Grapes in Washington EB0762 for insect control options.</p>	



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