

VIRUS NAME:	FANLEAF (GFLV)	LEAFROLL (GLRaV)	RED BLOTCH (GRBV)
What happens to the vineyard?	<ul style="list-style-type: none"> - Decreased yield - Deformed & yellow leaves - Irregular, double-tipped shoots - Shot berries - Vine decline - Poor fruit color & quality 	<ul style="list-style-type: none"> - Red leaves in fall (red varieties only) - Decreased yield - Lower Brix - Decreased lifespan - Vine decline - Poor fruit color & quality - Delayed budbreak 	<ul style="list-style-type: none"> - Red leaves in fall (red varieties only) - Lower Brix, up to 6° - Decreased lifespan - Poor fruit quality
How can this disease spread?	<ul style="list-style-type: none"> - Top-working/ Bud grafting - Planting material - Dagger nematodes 	<ul style="list-style-type: none"> - Top-working/Bud grafting - Planting material - Mealybugs and scales (which can move by wind, birds, equipment, vehicles, and people) 	<ul style="list-style-type: none"> - Top-working/ Bud grafting - Planting material - Alfalfa leafhoppers and other possible unknown vectors
Watch out for:	<ul style="list-style-type: none"> - Sauvignon blanc may mask a fanleaf disease - Infected rootstock 	<ul style="list-style-type: none"> - The incredible efficiency & widespread populations of the vine mealybug vector! - Infected vineyards upwind of your block - Virus-infected mealybugs likely survive on roots, so if you rip out a leafroll-infected vineyard you must treat the area for mealybugs & remove as much root material as possible before replanting! - Ants!!! Ants protect mealybugs from natural predators and help them move in the vineyard 	<p>Wild or backyard grapevines which can be a sneaky source of virus for the vectors to carry into your vineyard! They think that this is how red blotch got into an FPS vineyard.</p>
Types:	Fanleaf virus	GLRaV-1, GLRaV-2, GLRaV-2 strain RG, GLRaV-3 , GLRaV-4, GLRaV 4-car, GLRaV-4 strain 5, GLRaV-4 strain 6, GLRaV-4 strain 9, GLRaV-4 strain De, GLRaV-4 strain Pr, GLRaV-7 (Leafroll 3 is the most economically important one)	Red blotch virus