

Pierce's Disease

Management in Southern San Joaquin Valley Vineyards

Pierce's disease (PD) has been identified in vineyards throughout southern San Joaquin Valley. Significant vine loss has been limited to hot spots in Tulare and Fresno counties. PD can be successfully managed in vineyards located in hot spot areas. However, even well-managed vineyards will have 1% to 5% of the vines missing in any given year. This reduces production potential and increases production cost. Strategies to manage PD include:

Avoid planting highly susceptible varieties in hot spots. No *Vitis vinifera* variety is immune to PD, but some are more susceptible than others. Highly susceptible varieties grown in the San Joaquin Valley include Red Globe, Emperor, Calmeria, Fiesta, Barbera, Mission, and Chardonnay. Crimson Seedless appears to be moderately susceptible. The susceptibility of Thompson Seedless and Ruby Cabernet is relatively low. Susceptibility of newly released table, raisin, and wine varieties is unknown.

Remove dead and diseased vines and replace annually. Do not defer vine replacement and allow islands of dead and diseased vines to become established in the vineyard. Use layers to replace vines. Rootings take much longer to reestablish a productive vine and should be used only if layering is not possible. Survey the vineyard and mark diseased vines in October when PD symptoms are obvious.

Send a small crew ahead of the pruning crew. Saw off and remove marked vines, plant layers, and prune mother vines so that newly planted layers are not mistakenly severed by someone not paying attention in the main pruning crew. After two or three years, sever layers from mother vines to avoid losing a series of connected vines if one becomes infected with PD.

Early identification and vine removal are critical when glassy-winged sharpshooter (GWSS) is present. GWSS can spread PD bacteria from vine to vine. Inspect vineyards within a week or two after bud break and mark vines with delayed growth; then revisit vines in mid- to late April and examine for leaf mottling diagnostic for PD. Vines with questionable symptoms are reexamined in late June when the stress of hot weather will intensify symptoms. Survey and sample vineyard in October when foliage symptoms of PD are most apparent. Always remove vines immediately after PD has been positively identified. Beginning in June, a sample of eight to ten leaves and petioles from suspect shoots is used for lab identification of the bacterium. A list of labs that specialize in tissue testing for PD is available at your local Cooperative Extension office. Field test kits are being developed that will allow the grower to quickly make positive identification of suspected vines, and these kits should be available soon.

A clean or bare vineyard floor is best. Keep vineyard floor and adjacent areas (if possible) free of plants that host the PD bacteria and/or encourage sharpshooter populations. Avoid cover crops, especially perennial grasses and those that could host PD bacterium. Control stands of bermuda or other grasses in the vineyard and around leaky standpipes, irrigation pots or risers, ditch banks, return basins, and buildings. Avoid, if possible, having alfalfa or permanent pasture near the vineyard.

Control glassy-winged sharpshooter. When GWSS is present, populations should be kept as low as possible in the vineyard and surrounding areas. This will require insecticide treatments and may require a regional approach.





Avoid planting susceptible varieties in PD hot spots (Fiesta dying from PD, 1997).



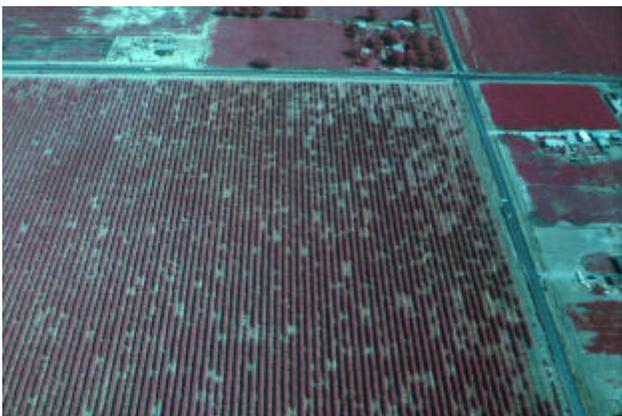
Rogue and replace diseased vines annually. Remove PD vines immediately when GWSS is present.



Sever layers after 2 or 3 years preventing the loss of a series of vines if one becomes infected.



Keep vineyard floor and adjacent areas free of weeds and covercrops that host PD bacterium and vectors.



Infrared photo of Emperor vineyard in PD hot spot north of Visalia, 1972.



Keep GWSS populations under control which may require a regional approach: General Beale Road Pilot Project, Kern County.

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