

Monitoring Visual Symptoms of Red Blotch Disease

Reddening of the leaf blade in a blotchy pattern is a characteristic visual symptom of grapevine red blotch disease (RBD) in black-fruited cultivars. White-fruited cultivars may not express clear visual symptoms. Symptom expression varies seasonally and between sites, blocks and cultivars.

Consider these factors to improve the reliability of RBD symptom mapping:

Symptoms may be visible on **only one section** of the vine

RBD symptoms may be present on only one shoot, spur position or cordon, (Vines 1 & 2) rather than being more evenly distributed (Vine 3).



In vines 1 & 2, symptoms were localized to one section of the vine. **Symptomatic tissue** collected from these sections tested GRBV (+) using the LAMP assay. Vine 3 also tested GRBV (+).



Vine 2



Vines may have **mild visual symptoms** of RBD

Vines 1, 2, 3, & 4 have mild visual symptoms (light red blotches) on only a few leaves. Vines 5 & 6 have characteristic RBD leaf symptoms that are widespread through the canopy.

Vines 3 & 6 and vines 4 & 5 were photographed on the same day, in the same block, and all six vines tested GRBV (+) using the LAMP assay.



Vine 1



Vine 3



Vine 6



Vine 2



Vine 4



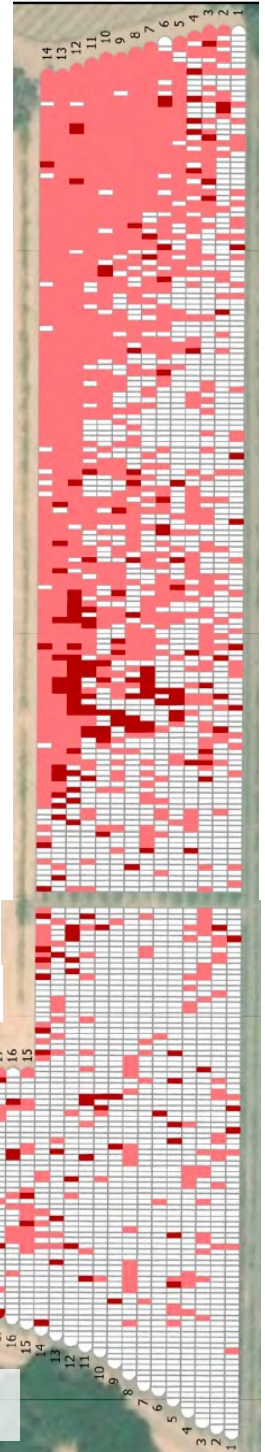
Vine 5

Infected vines **do not** develop symptoms simultaneously

For unexplained reasons, all GRBV-infected vines within a block may not develop symptoms simultaneously (asynchronous symptom development). During a first round of mapping and visual assessments, vines may be asymptomatic. They may develop symptoms later in the season, before leaf senescence. Multiple rounds of assessment and mapping may be needed to identify all symptomatic vines.

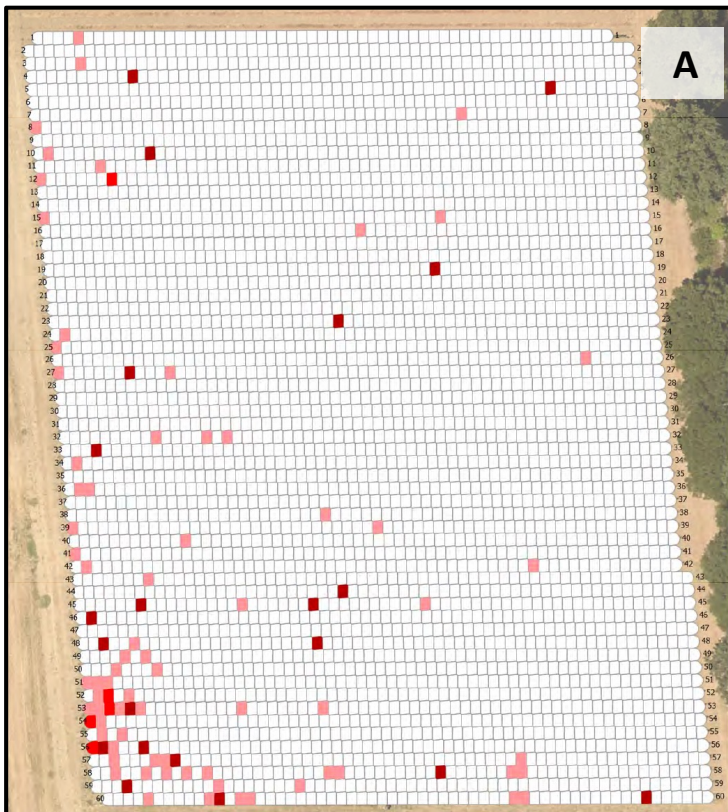
Block A: On Sep 30, 2021, we counted 72 symptomatic vines. By Oct 22, an additional 26 vines had visual symptoms or 27% of the total recorded symptomatic vines.

Block B: On Sep 30, 2021, we counted 1,419 symptomatic vines. By Oct 13, an additional 244 vines had symptoms or 17% of the total recorded symptomatic vines.



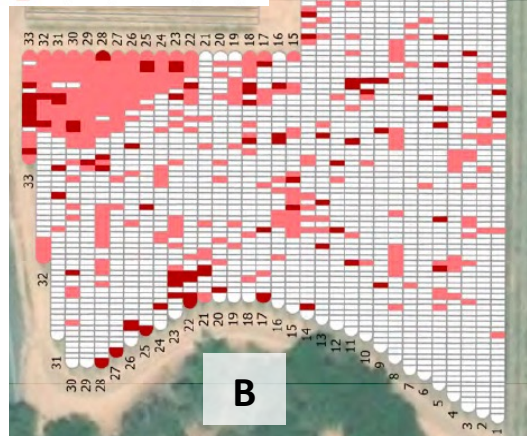
Symptom Map Date

■ 9/30/2021 (72) ■ 10/10/2021 (5) ■ 10/22/2021 (21)



Symptom Map Date

■ 9/20/2021 (1,419)
■ 10/13/2021 (244)



Symptom expression varies throughout the canopy

Basal leaves are typically the first to develop RBD symptoms. Symptoms on older leaves may appear different than symptoms on younger leaves. Making frequent observations of symptoms as they change from veraison to senescence can increase confidence in visual symptom identification.

Symptoms on the south (sunny) side of the vine may differ from the north (shady) side of the vine. When you are uncertain about symptoms, check both sides of the canopy and compare symptom expression.

Basal



South-facing



Middle



North-facing



Upper



Authors:

Jennifer K. Rohrs
Research Associate
Monica L. Cooper
Farm Advisor

UC University
CE of California
Cooperative
Extension