

## **Managing fruit brown rot in prunes**

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Brown rot in harvested fruit can be costly due to direct crop losses and hand-sorting charges. Weather conditions, especially rain and/or high humidity, are key factors influencing potential for brown rot infection. However, there are strategies that growers can implement to manage brown rot while keeping costs down.

Where possible, avoid orchard conditions that promote fruit brown rot infections. These include:

High nitrogen (N) levels. Avoid excess nitrogen fertilization.

Fruit damage (split fruit, insect damage, etc.). Prevention of insect damage (peach twig borer, leafroller, etc.) is key to high level of control of brown rot on prunes. Split fruit is also vulnerable to brown rot infection. Use proper irrigation management to avoid split fruit. Monitor and control peach twig borer and/ or leaf roller to avoid fruit flesh damage that allows disease entry into the fruit (See IPFP binder, available at local UCCE office, for details on insect management and irrigation scheduling). Check for split fruit and insect damage when considering a pre-harvest fungicide application.

Late harvest. Growers must balance the risk of increased brown rot infection with the economic benefit (lower dry away) of harvesting at lower fruit pressures.

Clustered fruit. In heavy crop years, shaker thinning will reduce crop load and improve fruit size. Shaker thinning can provide an additional benefit by reducing the number of fruit clusters.

High disease pressure. High inoculum levels increase disease risk, but, by summer there is no way of economically reducing orchard spore counts. Reduce pre-harvest disease pressure by using an effective bloom spray program and, when possible, directing pruning crews to remove fruit mummies. Even with a good bloom spray program, fruit rot infections can develop when rain or high humidity occur as fruit matures

Evaluate the economics of your operation. Determine which blocks are worth protecting. Where is the best crop? Do you want to spend the money to protect all your orchards? [Note: if fruit brown rot levels are high in an orchard at harvest, make a note to pay particular attention to bloom fungicide program next spring and to tell pruners to remove mummies as they prune each tree.]

Where needed, chemical controls should be applied at the proper timing. Using sprays for fruit brown rot control is expensive and may not always be successful. Registered fungicides protect uninjured fruit from brown rot infection. Fungicides must be applied before infection occurs, and cannot adequately protect injured fruit. Unnecessary sprays waste money and increase the risk of fungicide resistance.

If you need to spray:

Use an effective material. Field research by Dr. Jim Adaskaveg showed some fungicides work better than others for fruit brown rot control. Orbit/Bumper, Indar, and Pristine are ranked highest for fruit brown rot control. Elevate, Vanguard and Scala are less effective. Spray timing in this study was 1-2 weeks before harvest.

Add light summer oil (415 wt. spray oil) to the tank. Tank mixing spray oil with Orbit, Pristine, or Elevate significantly improved fruit brown rot control. A rate of 1-2 gallons of oil per 100 gallons of water was used in those trials. Oil is not suggested if you plan to fresh pick because it affects fruit appearance.

Alternate fungicide chemistry to reduce the risk of fungicide resistance. Repeated use of a single chemistry will lead to pesticide resistance. Brown rot resistance to AP fungicides (Group 9) such as Vanguard and Scala was found in a single orchard in Butte County in 2007. This discovery is a wake-up call to growers and PCAs regarding fungicide resistance management in prune production.

Different pesticide names don't mean that the chemistry is different. Orbit, Bumper, and Indar all work the same. Alternating with these products is like switching from Pepsi to Coke – you are still using essentially the same material. Follow the simple numbering (FRAC Group No.) system on each fungicide label to identifying different modes of action. Use an effective brown rot fungicide with a different code number each time you treat. We suggest using a fungicide for pre-harvest treatment that was not used at bloom. Talk with your PCA or local UC Farm Advisor to learn more about fungicide resistance program.

Get good spray coverage. Poor spray application wastes time and money. Calibrate your sprayer at least once a year. Drive slowly (2 mph) when the canopy is dense. Set spray nozzles to target the tree canopy. Every-other-row spraying = every-other-row control + increased risk of fungicide resistance.