Best Management Pruning Practices for Branch Canker Diseases of Avocado

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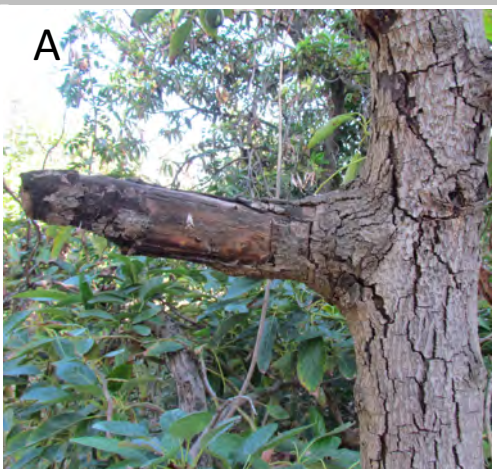
To reduce the spread and sporulation of fungal propagules, conduct management activities during dry periods, and avoid any activity shortly after periods of precipitation whenever possible.

Pruning Infected Material

1- Inspect branch for symptoms of branch canker.
2- If the canker has not reached the branch collar, cut the entire branch back using the techniques described herein, and move pruned material to a designated area.
3- If the canker has extended into the branch collar, the infection has already reached the trunk. At this point, remove the dead limb 1/8-1/4 inch from the branch collar to reduce inoculum. Do not cut into the branch collar, or any other living tissue (Fig. A).



Pruned and Cut Plant Debris

1- Do not move plant material and soil debris between locations.
2- Create a designated area for plant material and soil debris that is removed from the orchard.
4- Chip plant debris, starting with any infested material first. This will assist with cleaning out potentially contaminated material from the chipper.
5- Cover woodpiles with a plastic tarp (Fig. D). This is not only good practice for insect management, but also prevents splash dispersal of pathogenic fungal propagules.
6- After plant material is chipped and solarized, it may be safe for use in other locations.

Equipment Disinfecting

Because propagules of many pathogens may persist on dead wood for several years, it is important to ensure that equipment is properly cleaned of plant debris between each trees. Wood cankers occur on twigs, branches or trunks and are caused by fungal pathogens that enter through wounds on the bark surface, caused primarily by pruning, sunburn, frost damage and mechanical injury. Residual debris may be a source of inoculum and sanitation practices will reduce their potential introduction and spread.

1- Prior to cutting/pruning, remove organic debris off equipment (hand and power tools used for cutting (e.g. pruning shear, chainsaws), then spray or wipe with either Lysol® or 70% ethanol (Figs. C & D). Clorox® bleach diluted to 5% may be used, but may cause corrosion and thus pitting in the blades. Pitting can harbor microbes that are unaffected by quick sterilization. Dry blades with a clean towel, and spray blades with sterilizing solution in between trees.
2- Never use disinfectants on pruning wounds, as they could be phytotoxic.
3- Remove any accumulated soil/mud or plant debris from heavy operating equipment with a hose (high pressure is best) prior to relocation of equipment. Equipment includes vehicle tires, shovels, stump grinders, trenchers, chipper trucks, mowing equipment, chippers, tractors, fertilization and soil aeration equipment, cranes, etc. Spray with Lysol®.
4- Prior to leaving the orchard, remove any accumulated soil/mud or plant debris from shoes and tires and spray with Lysol.

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The following guidelines are recommended to minimize plant wounding and speed wound closure.
To prevent infection by pathogens, conduct activities during the dry period so calluses form on the plant tissue prior to wet periods.

1- Find the branch collar of the tree (Fig. A). The branch collar is the swollen area of trunk tissue surrounding the base of a branch. (Fig. A).
2- Draw a line flush along the trunk, outside the branch bark ridge (Fig A).
3- Cut the branch at least 30 degrees away from the flush line so the cut will close evenly (Fig. B).
4- For branches larger than 3 inches in diameter, utilize the three cut method to prevent unnecessary branch tearing under its own weight, below the collar (Fig. B)
5. Make a clean cut of the remaining stub using sharp implements to ensure quick and even callus formation Fig. C, F).
6- Do not cut too far from branch collar (Fig. D)
7. **Never cut into the branch collar (Fig. E)**. A cut too close, or flush to the trunk results in greater wound surface area and uneven callus formation (Fig. G). In addition, the branch collar serves as a protection zone that limits infection in the parent stem by forming pathogen-resistant compounds. Thus, flush cuts, or any cuts into the branch collar damage the tissue, and impair the trees natural ability to defend against pathogens.
8. Make smaller cuts rather than large cuts when pruning to minimize decay forming columns.
9. Cuts on small branches should be perpendicular to the branch (Fig. H), not at a diagonal (Fig. I) to minimize wound surface area.
10. Non-diseased limbs that are cut may be left within the vicinity of the tree to promote natural ecosystem processes.

Three Cut Method:
1st cut: About one foot away from the branch collar. Cut from under the branch approximately one-third to halfway through the branch.
2nd cut: Cut from above, approximately two inches past the first cut.
3rd cut: Cut at the proper pruning point, just outside the branch collar. Make the cut ⅛ inch and ¼ inch beyond the branch collar for small branches and large branches respectively.