



Sanitizing Pruning Tools

Pruning tools can transfer fungal, bacterial, and viral pathogens from plant to plant. Most Cooperative Extension Fact Sheets have recommended using isopropyl alcohol or a dilute bleach solution to sanitize pruning tools. They also recommend leaving them to soak for 2 to 5 minutes between pruning trees or plants where signs of infection have been identified. A search for more recent science-based information from a reliable source (.edu vs .com websites) resulted in good information from Washington State University's Dr. Linda Chalker-Scott. Dr. Chalker-Scott conducted a literature review of peer-reviewed science and synthesized her findings, some of which I share here.

Disinfectants tested by various researchers were: alcohol (ethanol and isopropyl alcohol), chlorine (bleach and monochloramine), household cleaners (Listerine, Lysol, and Pine-Sol), and trisodium phosphate (10% solution). All were shown to be effective but with varying advantages and disadvantages. One of the studies also examined the corrosiveness of several products and found that Lysol was least corrosive and bleach was most corrosive.

Dr. Chalker-Scott's conclusions from her literature review were:

- 1) know your pathogen and its life history and use common sense
- 2) disinfect your tools when working in areas where viruses, viroids, vascular fungus, or bacteria are present
- 3) avoid cutting active, oozing cankers; wait until they dry
- 4) always disinfect your tools if you are pruning irreplaceable plants
- 5) choose a disinfectant treatment that has been shown to be effective through published research.

Dr. Chalker-Scott went on to say that she would probably not use alcohol but would use one of the common household cleaners at full strength.

In Yavapai County, one pathogen that poses significant risk of spread by pruning tools between apples, pears, and a few other members of the Rosaceae family is fire blight (*Erwinia amylovora*). This bacterial disease infects flowers in the spring. It kills new shoots and can form cankers (discolored, sunken or raised areas) on stems of susceptible plants. Several researchers noted that fire blight is not transmitted during the dormant season – only during the growing season. Other diseases (bacterial spot, Cytospora canker, and some viruses) are readily transmitted by pruning tools during the dormant season. Each of these pathogens were more transmissible when favorable environmental conditions were present, but this research makes a strong case for sanitizing pruning tools to minimize spread of pathogens.

In addition to pruning tools, plant pathogens can infect plants through soil or plant debris stuck on a shovel or left in a pot. Pathogens are microscopic; while your tools may look perfectly clean, these microorganisms may still be on your blade, in a reused pot, or on garden-related objects like tomato supports.

The University of Minnesota Extension recommends cleaning tools and containers:

- 1) in the fall before putting them away for the winter
- 2) in the spring before you use them and if you didn't clean them in the fall
- 3) after working on an infected plant and before moving to the next plant
- 4) after you use your tools at another garden site, before using them at home

Prior to disinfecting tools in the fall, remove dirt, debris, grease and grime with water and soap or detergent, using a stiff brush on rough surfaces.

The research is compelling enough for me to switch from isopropyl alcohol to a product with an active ingredient of .1% alkyl dimethyl benzyl ammonium saccharinate, which research has shown to be effective on viral, bacterial and fungal pathogens on tools, without having corrosive implications. A common product with that active ingredient is Lysol® All Purpose Cleaner. A product such as this may be sprayed on the tool or the tool can be dipped into the disinfectant solution. Wiping excess disinfectant from the tool prior to use on the next plant is recommended.

Any mention of specific products is for illustrative purposes and is not intended to be a product endorsement.

Additional Resource:

Dr. Linda Chalker-Scott, Washington State University

[Sterilized Pruning Tools: Nuisance or Necessity](#)

University of Minnesota Extension

[Clean and Disinfect Garden Tools and Containers](#)

October 16, 2023

Adapted from original Backyard Gardener publications by Jeff Schalau, Agent, Agriculture & Natural Resources, University of Arizona Cooperative Extension, Yavapai County

The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or genetic information in its programs and activities.