Pest Corner

July, 2005

With this year's wet spring, your best defense may be a good fungicide. Many fungicides are registered for plant use, but only a few are available for home gardeners. The active ingredient in some of the most popular home garden fungicides contain either sulfur, copper, Captan, triforine or chlorothalonil. Each is specific to different plants, diseases or uses. For example, sulfur and copper products can be used for growing organic produce while Captan, triforine and chlorothalonil don't qualify as organic.

Elemental sulfur is labeled for use on fruit, beans and many ornamentals and is active against mites, powdery mildews, some rusts, leaf blights, and fruit rots. But it has several disadvantages. It requires shorter application intervals than other products, is active as a vapor only within a certain temperature range, may burn foliage if applied when the temperature is over 85 to 90 degrees F, is inactive at low temperatures, and will burn some plants, such as 'Concord' grapes or apricots, at any temperature.

Copper is toxic to fungi and bacteria but can also kill all types of plant tissues. Therefore, the use of copper fungicides has largely been replaced with fungicides that are safer and often more effective. Bordeaux mixture is one of the first (1882) copper fungicides. It has long residual action and has been used to control many diseases, including peach leaf curl, fire blight and scab of apple and black rot, downy mildew and powdery mildew of grape, but the conditions under which it is used are critical for success.

Captan is one of the best all-around, general purpose fungicides to control a huge variety of plant diseases, but it is not very good against powdery mildews and rusts. It can be used as a spray, dust, dip, or seed treatment; is labeled for ornamentals, lawns, vegetables and fruit; works well to control leaf spots, blights, and fruit and vegetable rots. It is compatible with many other fungicides but cannot be mixed with oils, lime, or strongly alkaline (soapyfeeling) materials.

Chlorothalonil is a general use fungicide used to control fungal diseases in nurseries, seed orchards, Christmas tree plantations, and greenhouses. Its primary targets are fungal blights, needlecasts and cankers on conifer trees and, therefore, it isn't widely used by home gardeners. **Triforine**, on the other hand, is widely used to control powdery mildew, blackspot and rusts primarily in roses and a few other ornamentals.

Understanding the disease cycle, timing, coverage and selection of the right fungicide to

get good control is the key. Many fungicides work by protecting healthy plant tissues. Captan, copper products, chlorothalonil, and sulfurs must be on the plant before the fungi arrive and begin the infection process. Although triforine is locally systemic, it must be applied before or soon after infection for maximum benefit. Once plants are heavily diseased, no fungicide can revive them.

Fungicide names are confusing. This is because plant pathologists usually use the common name, such as chlorothalonil, when making recommendations, while manufacturers and retailers use the trade name. And the trade name may be different depending on whether it is targeted to the home or commercial market. For example, chlorothalonil (common name) is packaged as Daconil 2787, Funginil, or Multi-Purpose Fungicide for the home market and as Bravo or Exotherm Termil for the commercial market. All contain chlorothalonil, but the formulation (liquid, powder), active ingredient by weight (10%, 50%) and use (spray, drench) determine the name. To add to the confusion, some products, such as generic flower or fruit spray, may contain both an insecticide and a fungicide. The ingredient list on the label is the true indicator of what is in the product.

Whether the fungicide is toxic or not, always follow label directions and take all precautions, such as wearing protective clothing (gloves, long-sleeved shirt, and long-leg trousers) while mixing or applying the product, keeping it out of reach of children and animals, applying it when weather is calm, and cleaning all equipment, clothes and yourself after application.

Remember, the label is the law. Many diseases can be controlled without resorting to chemicals. A combination of techniques, both cultural and chemical, usually works quite well for controlling most landscape plant diseases.