

# 2010 CHERRY MILDEW PROGRAM

We now have the ability to predict when cherry mildew will show up in your orchard. It will be seven to ten days after one-tenth of an inch of water is applied as irrigation, or falls as rain, with the temperature above 50°F. The conditions needed to release and germinate mildew spores are very similar to a light apple scab infection period as measured by the Mills Chart.

More mildew is caused by irrigation than by rain. Delaying your first irrigation until absolutely necessary may cut the amount of mildew present at harvest by 50%. According to Dr. Gary Grove you can delay your first irrigation up to three weeks following normal winter moisture without effecting fruit size or soluble solids. Light soils or young trees may reduce the amount of time you can delay. You're not selling a cover crop. Let it dry down and quit growing.

Using water for frost control probably does not contribute to mildew unless you let it run late into the next day, temperatures have to be above 50°F for the spores to geminate. But if you use irrigation for frost control you should easily be able to delay actual irrigation until late in the spring, perhaps even past shuck fall. Don't worry about the grass; it will recover. Use your shovel and measure the amount of moisture available for trees at the 12 to 24 inch depth.

**Sterol Inhibitors**, (SI materials) called eradicant compounds because they have the ability to kill or retard established infections. Effectiveness declines after 24 hours and very little control should be expected after 96 hours. **Elite, Orbit, Procure, Rally DF** and **Rubigan EC** are some SI materials currently registered on cherries. Mildew resistance to Rubigan EC has been documented in some locations. Rally has been reported to have about a 40% cross-resistance factor with Rubigan. Orbit is failing in research comparison plots. Several fieldmen report that Procure in not controlling mildew as well as it did two years ago. Base your material selection on the mildew control history of the orchard in question. Best option is to combine with an appropriate eradicant material.

**Strobilurins**: We now have four materials available in this class, Pristine, Abound, Cabrio and Gem. These materials perform best as protectants and should be used before mildew becomes well established. Abound must be used with extreme caution, it is highly phytotoxic to some varieties of apples at VERY low concentrations. Use this material only if you can dedicate a spray machine solely to cherries and do not have apples adjacent to your cherry block that are subject to drift. Cabrio, Pristine and Flint do not have the same phytotoxicity risks.

**Quinolines (Quintec)**: Use it in a rotation with other materials at GA timing or later. Do not make more than two sequential applications.

**Protectants**: These materials must be in place before the mildew becomes established. They have little to no effect on active mildew. Mineral spray oil, Strobilurin products and Sulfur products are all protectants. Microthiol Disperss or Kumulus (micronized sulfur) are most effective when tank mixed with SI materials. Sulfur and sulfur based compounds work best in temperatures above 70°F. Do not apply when temperatures are forecast to be above 90°F to

avoid leaf and fruit burning. A practical sulfur protectant program requires reapplication with light amounts every 7 to 10 days throughout the period when mildew and tree growth is active.

**Mineral Spray Oil** and the carbonates (**Armicarb, Kaligreen**) are mildew **eradicants**. A narrow range, light weight summer oil (70 grade) may be used through pit hardening. Allow a minimum of 14 days between the last oil and a sulfur application. The **carbonates** are most effective when combined with a Strobilurin a Quinoline or a Sterol Inhibitor.

There is some indication that if **oil** is applied during cool weather at petal fall or shuck fall, pre harvest leaf loss may be increased. Delay the first oil application until nighttime lows are in the 40°F range.

Do not use Guthion, AzinphosMethyl, Imidan or any other organophosphate in the Cherry Fruit Fly program if you have used oil for mildew control post bloom. Severe leaf drop may result on some varieties!

**Why use oil?** Cherry growers lose more to mildew control each year than they do to Cherry Fruit Fly. Northwest Wholesale continues to recommend the use of oil as the foundation of mildew control with the necessary adjustment to a Fruit Fly control program. If you use oil for mildew control do not use any organophosphate materials for cherry fruit fly control. This is especially important on the Canadian varieties.

Thorough coverage of all of the foliage is critical for mildew control with oil. Fully developed orchards will require 150 to 200 gallons applied at 1½ mph or slower for good contact. **Do not use sulfur within 14 days of an oil application. For practical purposes this means that no sulfur would be used in the orchard until 14 days after the final oil application.** Sulfur is not effective pre-bloom and early post bloom due to the cooler temperatures and the fact that Cherry mildew is not present and active until one-tenth of an inch of water has been applied with temperature above 50°F.

### Post Harvest

To reduce the mildew pressure for the following year, apply a 1% solution of oil as soon after harvest as possible at 200 gallons per acre. This will also have the benefit of reducing a mite population and may avoid the need for other post harvest controls for that pest. For heavy mildew pressure or a high population of adult mites a second application may be needed about 10 days later. Provado or Actara will work as a post harvest treatment as well.

### Materials and Use Rates

Abound (protectant)	12-15 ounces/acre
Armicarb (eradicant)	2.5-5 pounds/acre
Cabrio (protectant)	9.5 ounces/acre
Elite 45DF (protectant-post infective)	8 ounces/acre
Gem (protectant)	3.8 ounces/acre
Kaligreen (eradicant)	3 pounds/acre
Microthiol (protectant)	6-8 pounds/acre
OR Kumulus Sulfur (protectant)	6-8 pounds/acre
Pristine (protectant post infective)	10-14 ounces/acre
Procure 480SC (protectant post infective)	16 ounces/acre
Quintec (protectant)	6-7 ounces/acres

Rally DF (protectant post infective)	5 ounces/acres
Rubigan EC/Focus (protectant post infective)	12 ounces/acre
Summer grade Spray Oil (eradicant/protectant)	0.75-1% solution
<b>All rates are shown per acre except those products where concentration of material is important.</b>	

All of these materials are contact only, complete coverage of the foliage is very important. 100 gallons per acre has not proven successful in full sized trees after they are well leafed out i.e., post bloom or later. Use 200 to 400 gallons per acre when controlling mildew.

Driving speed is very important. Driving more than 1½ miles per hour does not allow the fan on your sprayer time to move the air into the center of a full sized tree. Slower is better when you are trying to control cherry mildew.

## MODEL CHERRY MILDEW PROGRAM

**Petal Fall to post Shuck Fall** (depending on prevailing temperatures, rain and irrigation)

### Petal Fall

Gem (Protectant)	3.8 ounces/acre
OR Cabrio (Protectant)	9.5 ounces/acre
OR Abound (Protectant)	12-15 ounces/acre
OR Quash	4 ounces/acre

### Shuck Fall

Quintec/1% oil (Eradicant/Protectant)	7 ounces/acre
Pristine/1% oil ** (Eradicant/Protectant)	14 ounces/acre (10-14 days later)
Quintec* (Eradicant/Protectant)	6 ounces/acre (10-14 days later)
Pristine* (Eradicant/Protectant)	14 ounces/acre (10-14 days later)
Procure 480 SC* (Eradicant/Protectant)	16 ounces/acre
Kaligreen (Eradicant)	2.5-3 pounds/acre
*Combine with a carbonate or sulfur for better eradicant properties if mildew is visible. Repeat as necessary through harvest. Either material may be used twice, but don't use any material more than twice in succession.	
**If timing is right this spray can be mixed with GA.	

Early season control of the initial mildew infections is critical to delaying the epidemic until after harvest, especially on heavy clustering varieties harvested after Bings. This program combines the best performing products in Dr. Grove's trials at the optimum timing for the activity of each material. It also addresses the issue of resistance management.