MORE HOT WEATHER

The extremely hot weather of 1995 continues. To maintain soil moisture and to prevent fruit scalding it is prudent to sprinkle vines during the heat of the day (See issue number 6 this year). Some of the short crop last year may have been a result of cool temperatures in late summer. Berries appear to be sizing nicely this year with the heat. If we can get some cool nights color should begin developing soon.

Care also needs to be exercised in applying pesticides during hot weather. I recently heard of an apple grower who has a putative case of crop injury from including too high of a rate of a spray adjuvant several days before some extreme heat in his location. The following article is a reminder about pesticide mixtures.

Ignorance is doing things the same old way and expecting different results.

Author unknown.

PESTICIDE MIXTURES

Sometimes two or more pesticides can be mixed and applied together. In this way more than one group of pests can be targeted with a single application and the costs associated with multiple applications are avoided.

You may be tempted to tank mix two pesticides simply because you want to apply both of them at the same time. First, though, you must make sure the pesticides remain effective when mixed; sometimes they do not. Pesticides that retain their properties when mixed together are compatible. However, if you can't 'mix the pesticides or if doing so reduces their activity or results in increased toxicity or hazard, the pesticides are incompatible. Pesticides may be physically or chemically incompatible.

Physical incompatibility

Some pesticides cannot be physically mixed together. In most cases, solids settle out of the mixture or the mixture separates into layers after you agitate it. Sometimes, the mixture may curdle, get, or become sludge like. A physically incompatible mixture may be unsprayable; even when you can spray it, however, the concentrations will likely vary during the application. Pesticide labels sometimes indicate physical compatibility problems.

Chemical incompatibility

Sometimes even physically compatible pesticides should not be mixed because:

- The activity of one or more of the products may be reduced or destroyed,
- The mixture's toxicity and/or hazard to the applicator or the environment may be greater than that of the individual components, or
- The mixture may be phytotoxic or leave unsightly residues on the plants.

If a mixture exhibits any of these properties, the pesticides are chemically incompatible. You cannot tell if pesticides are chemically incompatible just by mixing them; you won't find out

until it's too late. The label will often tell you to avoid certain tank mixes.

MIXING PESTICIDES

Never assume that you can mix pesticides together or with a fertilizer unless at least one of the product labels specifies the combination. Be aware, too, that a label may allow some tank mixes and yet may prohibit others. Also, use caution when using liquid fertilizer as the carrier. Such may be fine when you combine the fertilizer with a single pesticide, but may be prohibited when you tank mix two or more pesticides.

The label will provide mixing instructions for all registered tank mixes. It is extremely important that you add the components of the mixture in the order that the label specifies; sometimes, whether or not pesticides are physically compatible depends on the order in which you add them to the tank.

Unless the label states otherwise, mist pesticides as follows:

- Fill the spray tank to 1/2 of the total spray volume and begin agitation
- Add different formulations in the following order: wettable powders (WP), dry flowables (DF), flowables (F), and liquids. Allow time for each product to mix and disperse before adding the next product.
- Fill the spray tank to 3/4 of final volume and add any emulsifiable concentrates (EC).
- Add crop oils, surfactants and liquid fertilizer solutions. (The fertilizer solution here is a small portion of the mixture rather than the total spray carrier.)
- Fill the tank to its final volume.
- Add an antifoaming agent (if appropriate) to reduce excess foaming during mixing.

Again, always refer to the label for instructions. Although surfactants are usually added last to the mixture, some labels may instruct you to add the nonionic surfactant before adding other pesticides. Unless the label states otherwise, you cannot apply any pesticide in a mixture at a rate higher than the label allows for when the pesticide is used alone for the same purpose.

SMALL-JAR COMPATIBILITY TEST

Before you mix pesticides or pesticide fertilizer combinations in your spray tank, conduct a small jar compatibility test. This test will show you whether or not the components are physically compatible and if you need to add a compatibility agent. The advantages in doing the test are that you only have to use a small amount of each product and you won't have an ugly mess in your spray tank if the mixture is physically incompatible. This test cannot detect chemical incompatibility.

To conduct the test, mix the products that you intend to use in a quart jar; some labels suggest that you use two jars. The label also will tell you how much of each product to use so that the contents in the jar are in the same proportion as they would be in the spray tank. label each jar clearly, so you'll know what it contains. Shake the jar and let it stand for 10 to 30 minutes. If the mixture separates into layers or curdles shake the jar again to redisperse its ingredients. If it easily redispurses, you will not need a compatibility agent. However, you will need to constantly agitate the mixture in the spray tank. If the mixture will not disperse after the second shaking, add a compatibility agent and reshake. If the mixture still does not disperse, you may want to perform the test again using a different compatibility agent, or decide at this point not to use the tank mix.

Conduct a small jar test even if a tank mix is described on a product label. The pH, chemical composition, and even the temperature of you water can affect physical compatibility. Likewise, a pesticide may be registered for use with liquid fertilizers, but how effectively you can mix the two could depend on the mature of the fertilizer you use.

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Cranberry Crop Management Newsletter
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PERENNIAL WEEDS: HAND-WIPING CHECKLIST

- ☑ Reserve hand-wiping for weeds that can't be controlled by any other way such as brambles.
- ☑ Use a sponge or other absorbent material to selectively apply Roundup solutions to leaves, avoiding contact with cranberry.
- ☑ Wipe patches soon after they invade a bed and before they spread. Large patches can be hand-wipes, but wiping large patches will be extremely time consuming.
- ☑ You do not have to hit every leaf for good control. In a large patch with many above ground stems, you do need to hit at least 2-4 lower leaves on every stem.
- ☑ Use the proper additives in your solution. Ammonium sulfate and a nonionic surfactant improve uptake and movement of Roundup. Adding a dye to the solution helps you evaluate coverage. Get these a local ag-chemical suppliers.
- ☑ Use a solution strong enough to provide control, but not too strong. 4 parts water to one part Roundup is the recommended strength.
- ☑ Do not apply within 6 hours of expected rainfall or irrigation. **Observe 30 day interval to harvest.**
- ☑ Always follow up. Do not expect perfect control after one year. Repeat applications the second (and third year if needed) are required and should be easier and more effective.
- ☑ Wipe plants after they have completed spring growth, usually later in summer. Early in summer, young plants will not transport sufficient Roundup to roots.
- ☑ Evaluate control the year following application. Root kill will not be apparent until the second year.

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