

SOILS

Jar test helps determine compatible chemical mixes

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I'm often asked if certain pesticides can be tank-mixed, or if they will mix with liquid fertilizer. Many are compatible, but some are not. There are two types of incompat-

ibilities. One is chemical incompatibility. When this happens, the resultant mixture will cause chemical degradation of one or all materials in the mixture, which will result in poor efficacy of the products. For example, if you mix two herbicides that are chemically incompatible, you are likely to encounter poor weed control. The pesticide label should inform the user on what products are chemically compatible.

A more common compatibility problem is physical. When two or more products are physically incompatible, an emulsion may form. This results in a mayonnaise-like substance in your tank that is very difficult to get out. Obviously, you want to avoid physical incompatibility. Usually, the label says to conduct a "jar test" to determine if products will mix. Following is a description of how to do a jar test from Utah State University Extension.

First, get a quart-sized jar with a sealable lid. Add 1 pint of the carrier you plan to use (water or liquid fertilizer). If water is your carrier, be sure to



use the same water source that will go into the spray tank. Add the materials and rates you plan to use to the carrier in the following order: water soluble pouches (1 tablespoon), wettable powder (1 tablespoon), dry flowables (1 tablespoon), capsule suspensions (1 teaspoon), emulsifiable concentrates (1 teaspoon), soluble liquids (1 teaspoon), soluble powders (1 teaspoon) and surfactants (1 teaspoon). Seal the jar with the lid and shake vigorously after

each addition. You will almost never use all these types of products at one time, so choose the ones you will use and add them to the jar in the order and amounts listed.

For example, let's say you want to spray a combination of liquid fertilizer, 2,4-D amine and Cimarron Plus. Since liquid fertilizer is the carrier, add 1 pint to the jar. Cimarron Plus is a dry flowable (formulation can be found under the "Product Information" section on the ▶

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label), and 2,4-D amine is a soluble liquid. Following the order in the preceding paragraph, add 1 tablespoon of Cimaron Plus into the jar, seal and shake vigorously; then add 1 teaspoon of 2,4-D amine, seal and shake vigorously; then add 1 teaspoon of surfactant, seal and shake vigorously. Let the solution stand 15 minutes after the last shaking. Shake again and observe the results.

If the materials are physically compatible, the jar will be cool to the touch and there will be no separation of materials or forming of clumps or

emulsions. If the mixture is incompatible, the jar may be warm or hot to the touch; layers may form in the mixture; or sludge, clumps or grains may form in the mixture. If the mixture is incompatible, either do not use that group of products together or re-do the test with a compatibility agent to see if that aids in making the mixture compatible.

After the test is complete, pour the contents of the jar into the spray tank (if it is compatible), triple rinse the jar, add the rinsate to the spray tank and throw the jar away.

Always conduct this test when mixing pesticides together. I have heard many stories from people who mixed Brand X and Brand Y together many times with no problems then had a foul-up with the same products and had to clean out their tank. ■