

Tank mixing pesticides for effective results

Tank mixing pesticides is a practice that has gained widespread acceptance in recent seasons. Time and labor savings are two of the obvious benefits, but certain precautions must be taken when using this practice to insure proper control. A recent survey conducted by Stauffer Chemical Company points up some general guidelines to get the most out of this system and limit possible mistakes.

Read all labels

First and foremost to remember before attempting any tank mix is to read the labels. The information contained may be long and involved, but it is there for a purpose: to help you make the best use of the material. Follow directions carefully regarding mixing, method of application, dosage, soil characteristics and other applicable information.

Recent EPA guidelines permit the use of non-registered tank mixes until Oct. 1977 if dosages do not exceed label instructions for any product in the mix used singly for the same pests on the same crops, and if labels do not explicitly instruct against such a mixture.

According to Dr. Douglas Murphy, agronomist with Stauffer Chemical Co., "before you mix any pesticides, first do a test for material compatibility. Many pesticides may not form a stable mixture causing layering or formation of precipitates. Application of a mixture of non-compatible materials will cause excessive rates of each chemical in separate parts of the field.

Test compatibility

An easily performed compatibility test involves the following procedures:

First place one pint of the carrier, usually water or liquid fertil-

izer, in a quart jar. Then add each pesticide to be mixed, one at a time, and shake well between each addition. When adding the pesticides be sure to use the material in the same volume proportion as to be used in the field according to label recommended dosages and your soil conditions.

The usual order for pesticides to be added for proper mixing is: wettable powders first followed in order by flowables, water solubles, surfactants and emulsifiable concentrates. These are general recommendations and label information may give more specific directions.

After the materials are added and agitated thoroughly, let the jar stand for approximately one hour while inspecting for any separation by layer or precipitate formation. If there are any precipitates formed, or relatively quick separation into layers, the mixture is incompatible and should not be used.

Check agitation

"The amount of separation permitted depends somewhat on the agitation capabilities of the field spray tank. Generally, however, minor separating after 30 minutes is tolerable if field sprayer agitation is good," Dr. Murphy adds.

Compatibility tests should be performed each time you fill the spray tank even if using the same formulations. The same analysis of fertilizer may vary in mixing qualities from batch to batch and manufacturer to manufacturer, and untested mixes of the same material may cause problems.

Make sure you have good spray tank agitation. Even somewhat unstable mixtures may be possible if agitation is sufficient to keep them in suspension.

When mixing in the field sprayer, put the carrier in prior to

addition of pesticides and allow time for thorough mixing between each material addition. Shortcuts may save you a few minutes, but the penalties can be exacted in yield and dollars.

Apply the fully agitated mixture as soon as possible after formulation to prevent possible separation, precipitation or caking. Do not allow mixtures to stand overnight without constant agitation.

Consult label information carefully regarding temperature and humidity data which may apply before mixing or if application is delayed.

Test mix rates

If you are trying an unknown combination, test it out first on a small scale at varying rates and under different conditions before large scale use. Check with extension agents for information concerning university test data on new mixes or local water conditions which may affect mixtures.

Don't mix pesticides which require different application methods. "Using foliar insecticides like Imidan, for example, with soil incorporated herbicides like Sutan + or Eptam, will cause improper placement of one or both of the materials," Dr. Murphy explains.

Don't hesitate to seek help from your local chemicals dealer or manufacturers representative for advice if problems crop up. Many times they will have access to information you might not know exists.

Do not exceed or underrate dosages of registered tank mixes. Registration is granted only after exhaustive testing under all possible conditions to assure proper control. Varying these rates may result in crop injury or pesticide non-performance. □