Helpful hints for tank-mixing your pesticides, fertilizers

Watch for foaming and gel formation when mixing pesticides and fertilizers in tanks, says an agronomic consultant.

■ Former Purdue University agronomist Jeff Lefton, now an independent consultant, reminds us that "pesticides are not perfect," that they rarely get 100 percent control, and that sometimes mixing errors make them even less effective.

"We have to understand where the problem is—in the leaf, the crown or the roots—and then target one chemical to the problem.

"There's a lot of information on the label," Lefton says. "But many times we don't read the label or the information we need isn't on the label. That's when you have to learn from your experiences. You have to keep a lot of notes."

Here are some cardinal rules Lefton says to keep in mind when mixing pesticide and fertilizer products:

1) Only one soluble chemical can be tank-mixed with one or more insoluble chemical.

2) If two soluble chemicals are tank-mixed, you can avoid phytotoxicity by cutting the rates in half.

3) All insolubles can be tank-mixed without phytotoxicity, as long as you use recommended rates.

4) Do not mix organic fungicides with alkaline compounds or with insecticides using xylene as a solvent.

5) Never mix a contact fungicide with a subsurface insecticide.

"Try mixes on a test area similar to where you plan to apply," Lefton suggests. If they are physically incompatible, you will probably see one of the following indicators:

* *precipitation*
* *foaming*
* *gel formation*
* *flake formulation*
* *separation of components*

When tank-mixing, tanks should first be filled to one-fourth capacity with water, and agitation should begin. Then add fertilizer first, followed by any wettable powders or wettable dry granules (pre-slurry).

Liquids, flowables or solubles should be

Photo courtesy of ChemLawn Services Corporation.

next, followed finally by emulsifiable concentrates.

Lefton says to watch out for alkaline hydrolysis, which can occur under high water pH. "Some compounds have very short residuals, sometimes just hours," he says. "Temperature, salts and formulations also affect alkaline hydrolysis."

Powder Blue, liquid ureaformaldehyde, fluid lime and water are all high-pH, as are many cleaning detergents.

To avoid alkaline hydrolysis, Lefton suggests:

1) checking pH;

2) using a buffer to bring the pH down to 5.5 to 6.0; and

3) applying the same day as mixing.

In summary, Lefton says:

1) Collect all the information you can.

2) Use a jar test, or test the tank-mix on a test area.

3) Know the solution's pH.

4) Use the right product for the right problem.

— *Jerry Roche*

Mercurial costs merit close tracking

Direct and indirect costs must be passed on to customers if you want to stay profitable.

■ If you don't track increasing costs carefully each year, profits will shrink before you know it, says Bill Hoopes of Barefoot Grass.

Hoopes defines **direct costs** as those costs which are closely identifiable with the rendering of service, including trucks, product and labor.

An **indirect cost** is one not directly identifiable with rendering of service, and includes rent or utility bills.

The gross profit margin—or the sum total of sales minus the direct costs—can dip dramatically when costs increase, as they are sure to do each year.

What happens when costs change, but business people fail to react?

"Assume you have 1,000 customers," says Hoopes, "each paying $200 per year for lawn care (five treatments each year at $40 each); your revenue is $200,000."

Gross profit is now $73,500 and has dropped from 40 percent to 36.75. Selling and administrative costs have jumped by 0.4 percent ($2,000). It's now $52,000 or 26 percent, further eroding bottom line.

Before-tax profit is now $21,500 (10.75 percent).

More than 28 percent of profit has been lost to cost increases.

"You could increase sales," suggests Hoopes, "but the percentages will stay the same. If you don't think you can get more eficiency from labor, and can't control price increases, you have to pass it along to customers in the form of a price increase.

"If your treatment price per customer is $40, the example shows a 4.25 percent