

## Surfactants In Weed Control

Surfactants help herbicides do their job. When you're trying to kill weeds, you need to add a surfactant to the mix.

Technically, a surfactant is a soluble compound that reduces the surface tension of liquids or reduces interfacial tension between two liquids or a liquid and a solid.

In other words, it's a linear molecule with a hydrophilic (attracted to water) head and a hydrophobic (repelled by water) end.

To be really technical, surfactants clump together when in solution, forming a surface between the fluid and air with the hydrophobic tails in the air and the hydrophilic heads in the fluid. Often surfactants will form "bubbles" within the fluid - a small sphere of heads surrounding a pocket of air containing the tails. They can also form bubbles in air - two nested spheres of surfactant, between them a thin layer of water, surrounding a pocket of air - and anti-bubbles in fluid - a layer of air surrounding a pocket of water.

That's obviously more than most of us need to know about surfactants, but I think they are very important in weed control in Texas, so I thought it was worth the detailed explanation.

Whether you're killing weeds, unwanted grass, or brush, a surfactant is almost always essential in the herbicide mix because most water in our area is considered "hard." Hard water tends to just roll off leaf surfaces.

Do a test yourself: Mix up a broadleaf weed killer solution and spray it on some clover, dollar weed or thistle. You'll see that, in most cases, the water beads up and rolls right off the leaves. Then, add a surfactant to the mix and you'll note there's a sheen on the leaf surface. That's the herbicide actually sticking to the leaf and doing its intended duty.

There are two ways of adding a surfactant to most herbicides.

The simple way: add a bit of dish soap to the mix. The normal dose is about a tablespoon per gallon of spray. (To keep the suds down when using over-the-counter soaps with a trigger-spray bottle or a pump-up sprayer, load the required amount of herbicide into the sprayer first, then add the dish soap. Finally, add the required amount of water by submerging the hose below the surface of the soap/herbicide mixture before you turn on the tap.)

The professional-grade way: use commercial surfactants like Hi-Yield's Spreader Sticker or Bonide's Turbo. They won't generate suds.

Even if your herbicide says it contains a surfactant, I suggest adding a bit more. It won't cost you too much. Obviously, dish soaps like Lux, Palmolive, Dial and Dawn are the cheapest, but even commercial surfactants are relatively inexpensive ... maybe \$3 a bottle.

By the way ... if you employ one of those ready-to-use or ready-to-spray bottles that hook onto the end of a hose, remove a small portion of the concentrate and add the surfactant. If you use dish soap with one of these sprayers, be prepared for lots of bubbles.



Randy Lemmon is the host of the GardenLine radio program on Newsradio 740 KTRH. Randy has been doing GardenLine in one capacity or another since December of 1995, for all three of the now Clear Channel AM stations - KTRH, KPRC & KBME. When Randy took over GardenLine, he replaced long-time Houston radio veteran and GardenLine originator, Bill Zak. For those who remember that far back, GardenLine was a weekly radio staple on KTRH from 10 a.m. to Noon Mondays through Fridays - along with a Saturday show as well. Now GardenLine is heard exclusively on Newsradio 740 KTRH on weekend mornings.



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