

Proper surfactant may boost herbicide effects

Editor's Note: Every spring, farmers put a lot of careful thought into the selection of herbicides. But often they pay little attention to the surfactants or wetting agents that should also go into the tank mix. This can be an expensive mistake. The following article describes the role of surfactants and explains why choice of surfactants is just about as important as choice of the herbicide itself.

NEW YORK, N.Y. — If you've ever put a nice coat of polish on your car then driven through a rain storm, you've seen how the water reacts to the car's surface. It doesn't really wet the car; it beads up and runs off. The same principle applies when a liquid herbicide is sprayed on the waxy surface of a weed. The end result is poor herbicide performance, and consequently weed problems.

Because of this basic law of nature, surfactants are often mixed with liquid herbicides to provide more even coverage and better weed control. A surfactant's purpose is to modify the surface forces between the herbicide and the weed by orienting itself between the interfaces, allowing the liquid to spread. There are some pitfalls that need to be avoided when choosing a surfactant to accompany a specific herbicide, however. While a surfactant can often greatly increase herbicide efficiency, one that isn't suited for a specific situation can actually harm herbicide performance.

According to Dr. Gary A. Lee of the Department of Plant and Soil Sciences at the University of Idaho, in one study conducted to determine the herbicide performance enhancement of 70 surfactants, results showed that 80 per cent actually reduced the weed killer's effect, 10 per cent had no effect, and only 10 per cent boosted the herbicide's effect.

Part of the reason for these statistics is that surfactants are sold separately from herbicides and are not subject to EPA registration.

Because there is no authority to regulate performance standards, false product claims and misunderstandings have easily cropped up.

An example of this misuse involves the application of a surfactant to act as a wetting agent - spreading the herbicide over the entire surface of the weed. This characteristic is desirable when a contact herbicide is being applied with water in a low gallonage rate. If no wetting agent is present, the spray droplets will very likely concentrate on small sections of the leaf surface, resulting in localized tissue burning without kill.

On the other hand, when a high gallonage rate of the herbicide and water mixture is being applied, if a wetting agent is used by itself up to two-thirds of the spray retention is required. If the spray doesn't stick to the weed, it can't do its job.

Mr. C.E. Moran, research chemist with Chevron Chemical Company, agrees that the selection of a proper surfactant is a critical step when putting together a successful herbicide program. Moran has recently evaluated a new formula of his company's X-77 Spreader, which is recommended for use with Ortho's Paraquat CL herbicide; Paraquat is a non-selective contact material commonly used for no-till production of both large and small grains, pasture renovation, and harvest desiccation of soybeans, cotton and sunflowers. When agitated, this new formula produces up to 83 per cent less foam than other spreaders on the market, and Moran believes that's an important consideration for the grower.

"When you reduce surface tension with a surfactant, you get foaming," Moran said. "Things with low surface tension tend to make bubbles ... it's just a law of nature. The grower's spray tank will fill up with foam and he'll get poor distribution of his chemicals, not to mention the mess it makes.

The research which led to this improved low-foam formula

of X-77 Spreader is an example of the work that's being done to provide growers with specially formulated adjuvants. According to Moran, many similar products will work in a specific situation, but compatibility with the herbicide is very important when choosing a spreader.

"Unless we've extensively

evaluated a spreader-sticker type adjuvant, we have no way of knowing how it might affect the performance of our products," he said. "For an individual grower or applicator to conduct a similar evaluation could be a very costly process. Even a small degree of incompatibility can produce globs of material which will clog up the spray rig, and result in

ineffective application. Furthermore, incompatibility often cannot easily be detected until it's too late."

While choosing an effective surfactant to accompany a specific herbicide is no simple task, Dr. Gary A. Lee offers a basic rule of thumb for success. According to him, surfactants are designed for a

specific use and should be chosen on that basis. The manufacturer of a herbicide will state on the label if an additional surfactant needed, and the brand that should be used. According to Dr. Lee, it's a good idea to follow this label advice, because the manufacturer will have carefully screened available surfactants to find the most suitable material.

Loan reference guide available

WENATCHEE, Wash. — A new book entitled "Federal Farm Loans: How To Ask For The Money And Get It," is designed to show farmers and ranchers how they can apply for and obtain FmHA farm loans for which they are eligible. The informative new book contains actual procedure condensed directly from thousands of pages of Federal regulations.

Under guidelines of the Agricultural Credit Act of 1978, farm partnerships, cooperatives, and corporations, as well as individual farmers, can now receive FmHA loans up to \$400,000 at advantageous rates and terms.

The book describes six categories of direct

agricultural loans: Farm Ownership, Soil and Water, Recreation, Farm Operating, Economic Emergency, and Emergency Disaster loans. Specific eligibility requirements, authorized loan purposes, loan limitations, rates, and terms for each loan category are carefully explained. Internal agency procedures for loan processing, and a glossary of the terms commonly used in FmHA loan programs, are detailed.

The book also includes a variety of sample forms and a list of suggested Do's and Don't's for the prospective applicant.

"Federal Farm Loans: —" is reference guide for far-

mers, ranchers, ag lenders, farm consultants, and others who can benefit from these greatly expanded USDA agricultural loan programs.

The soft cover book sells for \$7.95, and may be ordered from: FAARM, P.O. Box 2656, Wentachee, Washington 98801.

Open House slated

NEW HOLLAND - Victor F. Weaver, Inc., will hold a general public Open House, Thursday, April 5 from 7:00 p.m. to 9:30 p.m. and Friday, 9:30 a.m. to 4:00 p.m. at its new Fried Chicken Production Center, South Custer Avenue and Phillip Road, New Holland.

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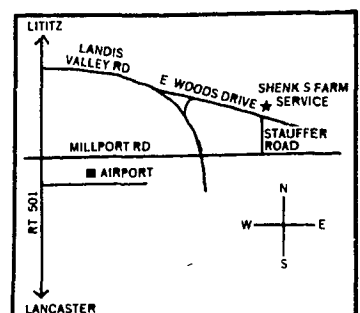
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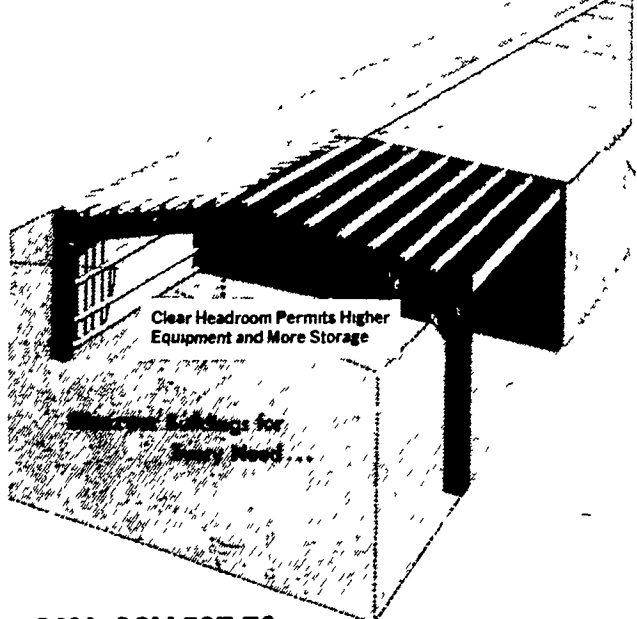
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