Industry News

Farmers save time, cash mixing vegoil, chemicals

U.S. farmers applying herbicides and pesticides using vegetable oil as the carrier fluid are reporting improved protection from pests and weeds at greatly reduced costs.

One source estimates potential usage at more than a billion pounds of vegetable oil a year. The farmers are not waiting for reports from elaborate research projects. Instead, they're buying vegetable oils by the drum, figuring their own mixing rates, adjusting their sprayers and then applying.

One interesting result is that cottonseed oil apparently provides better protection of cotton plants than would soybean oil, while soybean oil does a better job on soybean plants than does cottonseed oil.

Spray equipment manufacturers are helping the farmers. A series of one-day workshops are being held throughout the United States to discuss using vegetable oil as a carrier. A newsletter, "Ag Oil News," is available for a $10 contribution to Delta Ag Oil Research, Delta Ag Oil Research Fund, Box K, West Helena, AR 72390.

At the first Agricultural Oil Day held on Aug. 28 in Helena, farmers described how they were using vegetable oil and their results.

One Arkansas farmer reported $20,000 savings in chemicals for a 3,500-acre operation. Another reported saving more than $11,000 in chemicals for an 850-acre soybean operation. Farmers also save time as the vegetable-oil-base chemicals are applied at ultralow volume (ULV) rates, meaning fewer trips to refill sprayers and less hauling of water to fields to mix with chemicals.

At the Delta Ag Day, Lynn Jones, director of research and education for the National Cottonseed Product Association, spelled out 11 advantages to using vegetable oil as opposed to water:

First, reduced volume. One pickup truck carrying two 55-gallon oil drums supplies enough oil for a full day's spraying. Use of water would require some type of tanker ferrying water to tractors. One farmer said a 55-gallon drum of oil will cover 100 acres while water-based chemical application requires about a thousand gallons of water per 100 acres.

Second, spread factor. Water expands about three times when it hits a surface; oil expands four times or more (cottonseed oil on cottonseed plants spreads as high as 12 times), thus providing improved coverage.

Third, the use of oil permits farmers to obtain improved protection using less chemical herbicide or pesticide.

Fourth, oil-based pesticide penetrates lower on plants because of a smaller droplet size, reaching and killing more insect larvae.

Fifth, oil is less resistant to washing off. Sixth, vegetable oil tends to cling to a leaf's epidermis, as opposed to water which may evaporate or bead up and run off.

Seventh, vegetable-oil-base chemicals survive adverse environmental conditions better.

Eighth, there is less photodecomposition of chemicals that are sensitive to sunlight.

Ninth, oil is more compatible with chemicals in terms of pH.

Tenth, farmers don't need as many additives such as buffers and antidrift agents when mixing oil with chemicals versus mixing water with chemicals.

Eleventh, there is less drift. Use of vegetable oil on cottonseed has grown rapidly, particularly in the Rio Grande Valley. Vegetable oil became a dominant cotton spray in 1981, when 92% of the cotton was sprayed with vegetable-oil-base chemicals and in 1982, when it was used on 98% of the crop. There were 56 complaints of chemical drift in 1980, 10 in 1981, and three in 1982, with none of the complaints in 1981 or 1982 involving oil-base applications.

There are problems in the use of vegetable oils, however. A primary concern of manufacturers and farmers is to find a suitable cleaning agent to remove vegetable oil from equipment such as tractors, rubber tires and similar farm items that may get coated during the spraying operation. The farmers are seeking something easy and quick to use and safe to handle.

Second, if vegetable-oil chemical mixes are allowed to stand overnight, they tend to separate. The farmers are looking for additives that will reduce, if not eliminate, such inversion. They also wonder if some additives might work better with cottonseed oil than with soybean oil and vice versa.

Spray equipment manufacturers are working on providing equipment engineered specifically for the new development.

Chemical companies meanwhile are seeking federal and state approval for use of vegetable oil materials as carriers. In September, the U.S. Environmental Protection Agency proposed a rule which would allow mixed phytosterols derived from edible vegetable oils to be exempt from tolerance requirements when used with pesticides. EPA also proposed a similar tolerance exemption for poly[oxyethylene] [POE] adducts of these mixed phytosterols.

To farmers, the ultralow volume applications represent a way to save money and time. If soybean growers use soybean oil and cotton growers use cottonseed oil, they also will be increasing demand for the products they produce.

The idea isn't new. In 1974, researchers at the USDA Northern Regional Research Center had proposed investigating use of soybean oil as a chemical carrier in farm applications. But at that time, the USDA was redirecting NRRC research work away from industrial users to focus on nutrition and food production through photosynthesis. The project was not funded.

All Sun buys Agricom

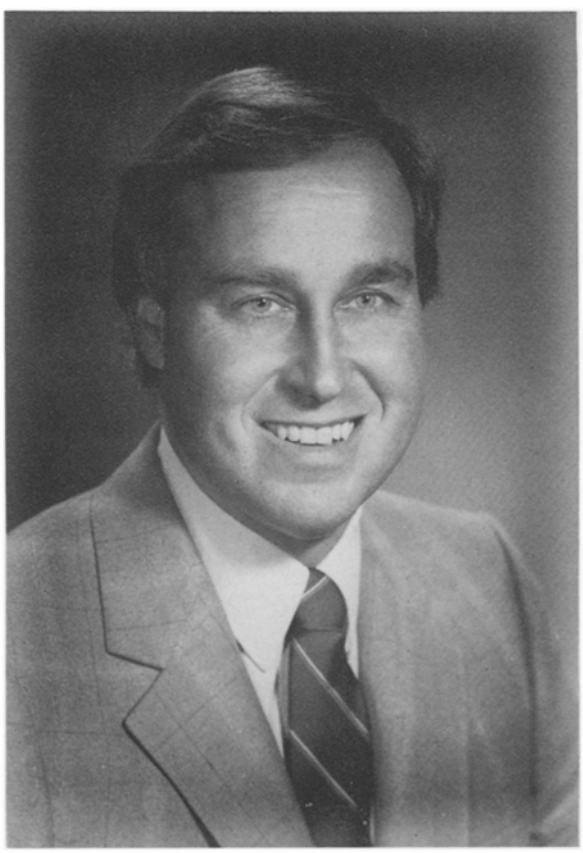
All Sun Incorporated, representing a group of North Dakota and South Dakota farmers and businessmen, has purchased Agricom International from Pacific International Rice Mills Inc.

Agricom, which trades, processes and refines such vegetable oilseeds as sunflower and safflower, has processing and refining facilities in Berkeley and Grimes, California.

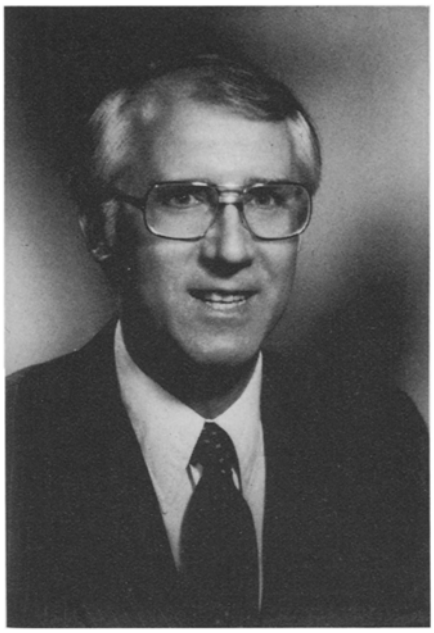
Roger Slotten, All Sun's president, said the purchase is a step toward further expansion. He said the company's future plans include constructing a vegetable oil processing plant on property it owns in North Dakota.

Agricom's new president is Thomas E. Mulcahy.

People



R.T. Krai



E.E. Bryan

The Harshaw Chemical Company has appointed R.T. Krai as marketing director and E.E. Bryan as sales director in its catalyst department's sales and marketing group. Krai has been a member of AOCS since 1979, and Bryan joined the society in 1976 . . . James E. Long and Kenneth P. Mitchell have been named group vice presidents within Diamond Shamrock Corporation's new chemical unit. Long is vice president of the Industrial Chemicals Group. Mitchell is vice president of the Specialty Chemicals Group . . . Vincent Lamberti, manager of organic chemistry and patent coordination at the Lever Brothers Research Center in Edgewater, NJ, recently was awarded his 100th patent. Dr. Lamberti's patents cover powder and liquid detergents, toilet bars, perfumes, germicide systems and other processes . . . Otto Vogl, professor of polymer science and engineering at the University of Massachusetts, has been appointed to the Herman F. Mark Chair at Polytechnic Institute of New York as research professor of polymer science. This chair is the first to be endowed in polymer science in the United States.

Death

Robert A. Kennedy

AOCS has been informed of the death of Robert A. Kennedy, a plant engineer for Westvaco Corporation in Winder, Georgia, and a member of AOCS since 1971. Kennedy had been with Westvaco in DeRidder, Louisiana, until 1980 when he transferred to the Georgia location.