Weed control possible with lower herbicide use

James P. Webb
Staff Reporter

A weed control program that would allow soybean farmers to reduce herbicide application rates and still realize profitable yields is being fine tuned, according to a cooperative extension weed specialist.

Alex Martin, a researcher at the University of Nebraska-Lincoln Institute of Agriculture and Natural Resources, said he wants to improve an existing weed control program so that more farmers would use less herbicides.

Martin said research from three years of testing on UNL experimental plots has shown that with one pass using lowest rates of some of the herbicides tested, such as one-quarter of the recommended usage, tended to be inferior in weed control and in soybean yields.

To make up for the poorer control, tests were done using a one-quarter rate herbicide application, a trip with a cultivator and then up to two more one-quarter rate herbicide applications to achieve the control of one pass using the recommended rate.

The problem now is trying to reduce the number of trips farmers would have to make over the field, he said.

"Part of the savings that we realized by using less herbicide was offset by the need for fuel and the time required to physically be out in the field for second and third treatments," Martin said.

Most farmers avoid making extra trips by applying pre-emergence herbicides while they are discing the field or when they are planting, he said.

Farmers don't have the time or labor to make the extra trips over the field. The trips compact the soil, decrease the tractor's life and waste fuel, he said.

"From my perspective, we have a technical success, but time is precious," he said. Farmers who have got eighteen other things to do much rather do this in one trip," he said.

This summer research will focus on finding the optimum herbicide rate and a later time to apply it with just one trip, he said.

And given the variables of weather, the strengths of individual herbicides and the growing patterns of different weeds like velvetleaf, sunflower and cocklebur become more complicated.

"It's like a juggling act," he said.

At the desirable reduced rate, herbicide is only able to kill certain weeds when they are one to two weeks old, he said.

The biggest question is how long treatment can wait after a single trip with a cultivator kills weeds down the center of the row and still be late enough so that a second major flush of weeds appears before the soybeans' canopy is able to block off sunlight to the weeds.

"If we're going to cultivate just once, we think we have to wait about five weeks into the season," he said.

Martin said he conducted a pilot study last year to study the proper time for cultivation and herbicide application on a small scale and found that it was effective.

"But one year doesn't prove the case, we're going to pursue this. It's kind of in a state of evolution," he said.

"I'm sure we're going to have some farmers try this on a limited scale, but I'm not going to pretend we have a great program that's packaged and ready to go," he said.

Subsidies at risk under trade talks

By James P. Webb
Staff Reporter

Nebraska agricultural producers could lose incentives to protect highly erodible lands if trade negotiations with Canada, Mexico and the European Community are successful, an economist said.

Annual federal subsidies paid to the farmers and ranchers, totaling $300 million, are the target of trade negotiators, said Roy Frederick, an agricultural economist at the University of Nebraska-Lincoln.

In terms of economics, export and production subsidies paid out by any government represent barriers to free trade, Frederick said.

"Producers are very aware that expanded export opportunities could be offset to some extent by losses in federal support income," he said.

The increased demand for agricultural products would also serve as a stimulus to convert erodible lands from conservation programs back into production, he said.

"It's possible that farmers would give up support payments to increase production in certain instances, and the environment would end up a net loser. But the extra per-acre income would have to outweigh the penalties for quitting the program," he said.

About 1.3 million acres of Nebraska cropland are currently enrolled in the Conservation Reserve Program.

The program pays farmers to idle erodible land in ten-year renewable contracts, in exchange for planting grasses, shrubs or trees to protect the soil.

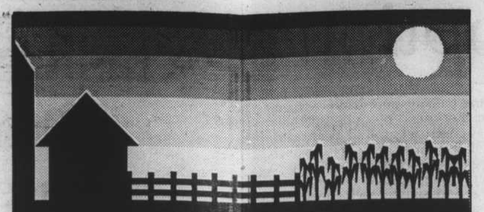
The CRP, like the Acreage Adjustment Program and the Wet Lands Program, are enforced with penalties including repayment of all federal support received on the acreage in violation and in some cases fines up to $2,500.

Overall, however, Nebraska farmers stand to gain from the increased trade, Frederick said.

"We are getting close to convincing the Europeans of the safety of our beef hormones," he said.

"Nebraska, which is the top fed-beef state in the nation, is in a very good position to expand its production," he said.

Nebraska's corn, soybean and sorghum producers would benefit if the North American Free Trade Agreement with Mexico, which needs those commodities, is finalized, he said.



Environmentally related projects

at the UNL Institute of Agriculture and Natural Resources:

GROUND WATER CONTAMINATION
• IANR is coordinating an interdisciplinary research project to study how different agricultural-management practices affect ground water contamination.

HOUSEHOLD SOLID WASTE AND RECYCLING PROGRAMS
• As part of a rural development program, cooperative extension solid waste specialists, home economists and engineers are working to reduce rural household solid waste and develop safe rural solid waste facilities and recycling programs for small communities.

WATER PLANNING
• This year the Cooperative Extension Service will demonstrate efficient water-planning practices to farmers at 70 sites in the central Platte Valley area.

FISH FARMS
• Terry Kayes, a cooperative extension aquaculture specialist, is working with agriculture producers and state officials to stimulate the development of fish farms.

GREENHOUSE GASES
• Shashi Verma, agricultural meteorologist, and Frank Ullman, professor of electrical engineering, are testing an adjustable diode-laser spectrometer that is able to measure the concentration and change in concentration of greenhouse gases.

NEW GRASSES
• Horticulturists and agronomists are breeding hybrid turf grasses and drought-resistant shrubs and trees to be used in the expanding golf course industry and in household landscaping.

Arnie DeFrain/Daily Nebraskan

Name change matches conservation ethic

By James P. Webb
Staff Reporter

The University of Nebraska-Lincoln College of Agriculture Sciences and Natural Resources has changed its name not because of a new teaching philosophy, but to elevate it to its appropriate stature, said an official.

The name change was needed so that students, industry and the public would recognize that the college wasn't just teaching production agriculture, said Steve Waller, a professor of agronomy.

"We needed a name to match our strong ethic for the conservation of natural resources," Waller said. "We haven't changed out teaching philosophy at all. We just found the new name to more accurately describe us."

Waller said the name change was the collective idea of the college's faculty.

Faculty members began two years ago to begin the review process integrating existing courses to form four new interdisciplinary majors and to add natural resources to the college's name, he said.

"It was more like fitting a puzzle together," he said. "We didn't have to add any new courses."

So far, students are still just beginning to recognize the benefits of the overhaul, yet 124 students have declared natural resources majors, he said.

Waller said he expects that with the new college name and the new majors, employers will more heavily recruit from UNL.

The major recruiters are state and federal agencies, such as the Agricultural Stabilization and Conservation Service, the Soil Conservation Service, the Forest Service and water resource districts.

Students majoring in natural resources are learning both an appreciation for the demands of production agriculture and the need to protect the environment, he said.

At the same time students are being taught to overcome misconceptions about environmental problems.

"The public has the idea that pollution from agriculture chemicals is the fault of careless farmers. But in reality, most of it comes from the city where people are unintentionally over-applying fertilizers and herbicides," he said.

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> *Waller*
> *professor of agronomy*

"We try to correct the normal tendency to lay blame and make students think in terms of finding an integrated solution to the problem."

Over the last five years, Waller said he has seen a positive trend in students regarding their career outlook and the majors they chose in college.

"We're seeing a change in the decision making process of students, he said. "No longer are students thinking in terms of career and how much money they can make.

"I think because of T V and the specialization of science that the students and the public are realizing that in order to conserve finite resources, we have to begin managing them accordingly."

Waller said widespread public thinking in terms of a global environment is very new to American culture.

He said that when he was in college people thought it was impossible to pollute Lake Erie, rivers and miles of atmosphere.

"We've come to a point where I think the public now realizes that sooner or later, we all breathe the same air and drink of the same water," he said.

"It's too bad that it had to take this much pollution to realize that, but the future of technology and what we're able to do in resource management is getting more exciting every day."

The problems of water quality today, which are in part a result of chemically intensive practices researchers thought to be safe ten years ago, shouldn't be blamed on farmers, he said.

"Farmers would never intentionally damage the land they live on," he said. "That idea is absurd, when you consider they'll one day pass that land onto their children."

William Lauer/Daily Nebraskan

A farm hand sets irrigation pipes for a beet field near Scottsbluff.