

Deeper Incorporation Necessary For Top Efficiency

WHITE PLAINS, N.Y. — To save a trip across the field, many corn growers apply their fertilizer and preplant herbicide in the same pass. But not all "weed-and-feed" combinations can be incorporated deep enough for proper fertilizer efficiency.

Many soil fertility specialists recommend that N, P, and K be incorporated three to six inches deep — where plant roots are concentrated.

"We recommend incorporating phosphorus and potash fertilizers for maximum nutrient uptake by crop roots," said Dave Mengel, professor of agronomy at Purdue University.

"Our research has shown that with conventional tillage, in a normal growing season, the bulk of the corn roots are found between 3 and 10 inches below the soil surface.

"P and K are both relatively immobile, so you have to put these nutrients where the plant roots can reach them. But many herbicides can't be placed that deep," he said.

Acetanilides — including Dual, Lasso and Cropstar — should be incorporated no more than two inches deep. Triazines, like Extra-zine II and Bladex 4L, can be incorporated no more than three inches deep.

Thiocarbamate herbicides like Sutan+ and Sutazine+ work best when the incorporation tool is set to cut four to six inches deep. For this reason, thiocarbamates are considered more suitable for weed-and-feed applications.

"In some years, you may get enough rain to move the nutrients deep enough into the root zone," said Mengel. "But last year, we dried out after planting. Because there was very little root growth near the surface, the nutrients that were not incorporated may have

been unavailable."

Similar conditions prevailed in Kentucky, where weed-and-feed applications like impregnation — spraying liquid herbicides onto dry fertilizer granules — have been growing.

"When the weather is dry, you'll see more benefit from incorporating your fertilizer, particularly if you have a nutrient deficiency," said agronomist John Grove with the University of Kentucky. "If you incorporate P and K with a disk or field cultivator, you should get adequate utilization."

In Ohio, potassium deficiencies caused by the dry weather have been serious, said Ohio State Uni-

versity soil fertility specialist Don Eckert.

"Last year, root growth in the top one or two inches was so limited by dry weather that most of the potash near the surface was unavailable," he said.

"This has been a limiting factor in no-till, and it's the reason why growers in conventional till should incorporate their fertilizer."

Incorporation of nitrogen is also important, especially if the fertilizer contains urea. According to Mengel, conditions in 1991 were prime for volatilization of urea.

"Planting in wet soils, followed

by extended periods of dry weather with low humidity, will result in significant nitrogen loss from urea," said Mengel.

According to the University of Illinois' Bob Hoelt, as much as 30 percent of the nitrogen can be lost in as little as three days.

"If you have three or four days without rain, you will lose UAN solutions or urea," Hoelt said. "These fertilizers should be incorporated as soon as possible. The ideal placement is at least three inches deep. Thorough soil mixing of the fertilizer and herbicide combinations are necessary for optimum herbicide performance."

According to University of Illinois ag engineer Loren Bode, two incorporation passes with a field cultivator or disk harrows will do the most effective job of mixing fertilizer and herbicides into the soil.

"If you are using a field cultivator, it is important to keep your field speed up to at least five miles per hour," Bode said. "Higher speeds will give better soil mixing and better herbicide incorporation."

Horizontal distribution of the fertilizer and herbicide can be improved by making a second incorporation pass at an angle to the first.

Franklin Co. Hosts Corn Clinic

GREENCASTLE (Franklin Co.) — Concerns of corn growers become more paramount in the light of the past drought year and the approach of corn planting season.

For growers who want to learn more about troubleshooting corn production problems, corn root-worm control, the latest in chemical and cultural weed control, reducing corn production risks, and other corn-related topics, the Franklin County Corn Clinic is for you.

The clinic will be held Tuesday, January 28, at Kauffman's Community Center four miles north of Greencastle. Beginning at 9:30 a.m., corn topics will include "Troubleshooting Corn Production Problems" by Dr. Greg Roth, Penn State corn specialist; "Limiting the Environmental Impact of Herbicides," by John Yocum, director of the Penn State Landisville Research Center; "Reducing the Financial Risk of Corn Production," by Roland Freund, Penn State area farm management

agent; and "Integrated Pest Management" by John Shearer, Franklin Co. agent.

The Corn Club awards will be presented after the 11:30 a.m. lunch. Afterward, more topics will include "The Latest In Chemical and Cultural Weed Control" by Yocum and "Nitrogen Management For Corn Production" by Roth. At 2 p.m., a panel will highlight several corn production top-

ics, including western corn root-worm control; planting rye to reduce pesticide use, improve yields, etc.; corn, crown vetch, and oats in one field; crown vetch, the living mulch; and using earthworms in no-till corn. Panelists include Martin Krone, crop management association manager; John Koons, a corn grower in Waynesboro; Steve Mellott, Pennsylvania Master Corn Growers'

Association director; Wilmer Lehman, Willow Hill corn grower; and Mark Gayman, Waynesboro-area dairy farmer.

Pennsylvania pesticide credits include 1 core and 2 category for private applicators and 1 core and 2 category 01 or 18 for commercial/public applicators.

For more information, contact the Franklin County Extension office at (717) 263-9226.

York Dairy Day Set

YORK (York Co.) — York County's Atlantic Dairy Day will be held from 9:30 a.m. to 2 p.m. on Thursday, February 13 at the Seven Valleys Fire Hall.

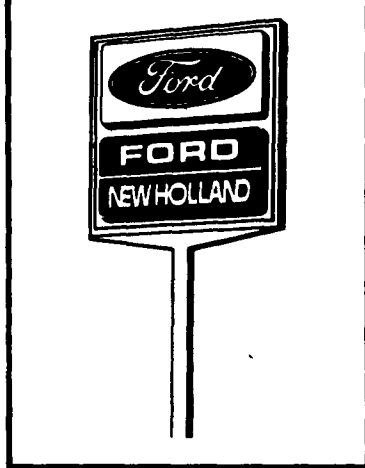
The morning educational program will include the following topics: "York Agricultural Land Preservation Program Update," by Patricia Comish, program director; "What's New in Milk Marketing" by Dr. Robert Yonkers, of Penn State Ag Economics Extension; and "Holding on to the Family

Farm" discussed by a panel including Roland Freund, farm management agent, Louis Glantz, attorney, and dairy farmers Earl Fuhrman and Jed Beshore.

Lunch will be served at noon and an Atlantic Breeders Cooperative District Meeting will be held in the afternoon.

To register or for more information, contact the York County Extension Office, 112 Pleasant Acres Road, York, PA 17402, or call (717) 757-9657 or (800) 441-2025, ext. 9408, on or before February 5. Reservations for the event are \$3.50 per person which includes a buffet lunch.

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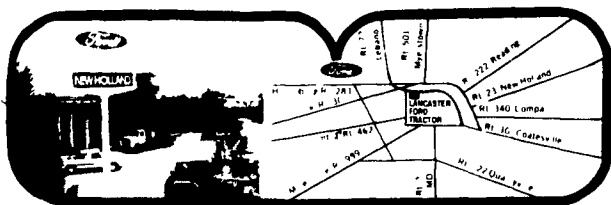
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