

# RESEARCH UPDATE

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levels at sidedressing ranged from 10 to 43 ppm nitrate-N and at 11 of the 24 sites the PSNT level was less than 21 ppm, indicating that the field would be responsive to N fertilizer. In Pennsylvania, we use 25 ppm as a critical level to decide whether fields would be responsive.

Corn yields did not respond to N at any of the sites in the study, however, so the PSNT overestimated the N requirement at nearly one half of the sites. The authors believe that

the failure of the test was caused by slow mineralization of residual N from the alfalfa at some of the sites, probably due to the lower soil temperatures that are often encountered in the spring in Wisconsin.

Most studies indicate that corn following alfalfa rarely responds to more than 30 to 50 pounds of additional N. The authors suggest that a small N application of 50 pounds per acre or less could be applied on those fields following alfalfa where the PSNT is below the critical level. They believe the

PSNT is a good tool to convince growers on the need to take a credit for the alfalfa in their N fertility program, since often it will indicate that no additional N is necessary.

Pennsylvania research has revealed very similar results. We have documented a number of cases where PSNT levels were relatively low following a legume sod, resulting in a higher than expected N recommendation.

Dr. Dick Fox and his colleagues at Penn State have found that, to date, the PSNT overestimated N requirements on 12 of 41 sites, or 29 percent of the time when following a legume sod that has not received manure. Fox also attributes this to inadequate mineralization of nitrate by the time the sample is taken. In all but one of the other sites the PSNT



# CORN TALK NEWS

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correctly predicted that there would be no response to additional N.

Thus a high PSNT level in a field following a forage legume is a reliable indicator of adequate N for the corn crop. However, a low level following a forage legume can be misleading and often indicates the need for more N than is really required.

Our recommendation has been not to use the PSNT on fields where corn is following a

legume that has not been manured. On these fields, we suggest using the standard recommendations for corn following a legume of 20 to 50 pounds of N/acre, depending on the expected corn yield and the percent legume in the old stand.

PSNT sampling should be concentrated on fields that have received manure where the test has been found to do a reliable job of indicating whether additional sidedress N is required.

## The Corn Industry

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Higher carryover stocks will offset some of the production loss for 1993.

Domestic demand for corn should continue at a near record pace. A recovering economy and expanding numbers of livestock will help move corn to the domestic livestock feeding industries. The BTU tax appears to be dead, which is viewed as a positive factor for corn. Trade agreements such as NAFTA (North American Free Trade Agreement) will help corn markets in the long run.

Corn is the most protected crop in Mexico and its use as livestock feed is discouraged. Sorghum is currently the most widely used livestock feed there. If NAFTA is eventually approved, corn could be the biggest benefitter. Due to its highly protected status in Mexico, it would receive the longest phaseout period of any commodity in the NAFTA — 15 years. To begin, the U.S. could ship 2.5 million metric tons of corn annually to the Mexican

market, duty free. It would also grow 3 percent per year for the duration of the 15-year transition period.

One of the really bright growing markets for corn has been the food, alcohol, and industrial uses. Twenty years ago less than 400 million bushels were needed for these uses. In the 1993-1994 marketing year, about 1.5 billion bushels of corn will be used for these uses. This is a fourfold increase from 20 years ago. During this period the soft drink industry has moved from using sugar to the use of high fructose sugars made from corn in the manufacture of soft drinks.

There is much optimism about the potential growth of the ethanol industry using corn as a base for fuel for vehicles. To date, this industry has been very dependent on government subsidies. Can this industry survive if government support declines and can the end product compete with gasoline at low current prices?

## Compete To Win: An Insider's Guide

ST. LOUIS, Mo. — This year, it may be your turn to walk away a winner in the National Corn Yield Contest.

Toss away the rabbit's foot, let the four-leaf clover wilt on the vine...but keep your first edition copy of "Indian Rain Dance Steps," just in case Mother Nature needs prodding.

The NCGA informally surveyed past winners of the National Corn Yield Contest to find out their trade secrets. Here's the Top 10 List To Success (you'll understand if our sources remain confidential).

1. Flatter your earthworms with personal attention.
2. Garnish your fields with buffalo manure.
3. Take a close look at your leaves.
4. Plant seeds snugger than friendly sardines in a tight can.
5. Flip a coin. "Heads" or "Tails," plan to irrigate.
6. Avoid fields wet enough for Noah.

7. Consult Love Connection's Chuck Woolery for a perfectly matched hybrid.

8. Spoonfeed your foliage whatever nutrients it craves.

9. Ask neighbors for advice. They'll give it to you anyway.

10. Experiment. If at first you don't succeed, there's always next year.

Seriously folks, each and every past winner of the National Corn Yield Contest interviewed said that the "little things" gave them an edge over the competition.

Our past winners pick their hybrids carefully—often testing them for several years before entering them in the contest. They work hard to maintain adequate fertility—regular soil tests, foliage analysis to pinpoint nutrient

needs and a prescription approach to nutrient applications.

They also pay close attention to factors such as earthworm populations and soil tilth, especially under reduced tillage conditions. It's essential not to get into the field too early, they stress, particularly if the soil is too wet or cold.

Winners also scout their fields for insect pressure. They survey their neighbors and other contest winners to pick up tips to improve yields. And they also experiment to find the perfect mix of production practices, including plant populations and row spacings, for their particular situation.

As for luck? It comes in timely rains. And that, they say, is where the Good Lord fits in.

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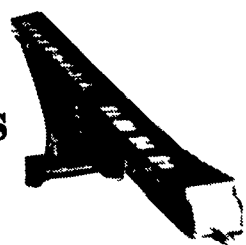
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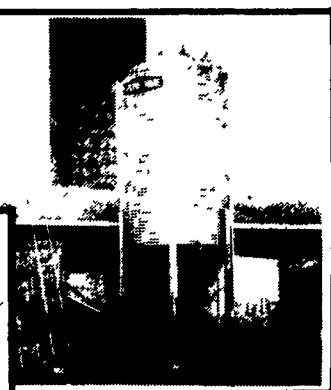
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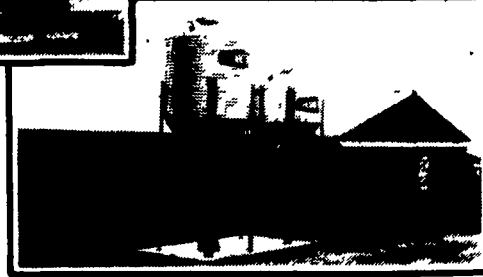
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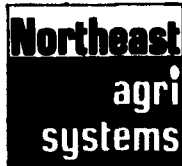
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