

Corn Talk News RESEARCH UPDATE



PSNT FOR CORN Doug Beegle Perry State Soil Fertility Specialist

The Presidedress Soil Nitrate Test (PSNT) for corn has been used successfully in Pennsylvania for several years.

This nitrogen soil testing approach is based on taking soil samples just before sidedressing — after the spring wet period but before the period of major nitrogen demand by corn — and determining the nitrate-nitrogen available in the soil at that time.

If the test level is greater than 21 parts per million NO_3-N , no sidedress nitrogen is recommended. If the test is below this level, the results of the test are then used to make sidedress nitrogen recommendations.

This test is primarily recommended for use on fields where there are significant organic nitrogen contributions such as a history of manure applications or forage legumes in rotation. It does an excellent job of verifying when these organic sources of nitrogen are adequate for the crop. This test is of limited value on most fields without organic nitrogen contributions, because these fields generally have low levels and thus the standard recommendations are suitable.

Since this test is somewhat unique compared to regular soil tests, it is probably worthwhile to review the procedures for using the PSNT since it will soon be time to test. The PSNT procedure is as follows:

1. Only apply a minimum of fertilizer nitrogen in the spring. (Starter fertilizer and/or nitrogen used as a herbicide carrier.)

2. Apply manure based on the history of the field, a manure analysis, how the manure will be handled, and on crop requirements for nitrogen estimated from the expected yield and crop history.

3. Take soil samples when the corn is 12 inches tall or at least a week before planned sidedressing.

4. Sample the fields by tak-

ing 10 to 20 cores to a 12-inch depth if possible. If not sample as deep as you can. Avoid starter bands and other atypical areas. Because of sampling problems, this test cannot be used on fields that received injected fertilizer or manure.

5. Combine and crumble the cores and dry as quickly as possible. Spread the samples out in the sun or under a heat lamp in a well ventilated area to dry. The samples must be dry within 24 hours.

6. The sample can be sent to a reputable soil testing lab for soil nitrate-nitrogen analysis. A reliable field test kit for soil nitrate-nitrogen can be used to determine the nitrate-nitrogen level in the sample.

7. Calculate the adjusted nitrogen recommendation from the worksheet below.

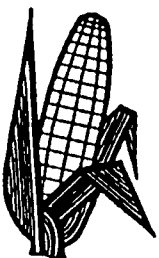
There are several areas that seem to cause the most problems with the PSNT. First, many people try to take the test too early. It is important for the test to work properly that the corn be at least 12 inches tall at the top of the whorl when you sample. A second problem related to timing of sampling is taking samples immediately after a heavy rain. Experience has shown that the test works best if you allow 2 to 3 days following a heavy rain before sampling for the PSNT.

Sampling too soon after a rain can give a false low reading indicating that there is less nitrogen available than there really is. Third, and this is the tough one, for the test to work the best the samples should be taken to a 12-inch depth.

Unlike phosphorus and potassium, nitrate will readily move deeper into the soil. Everyone complains about this deep sampling but it could be worse because taking deeper samples would be even better. Some states recommend two or even four-foot deep samples for nitrogen testing.

This 12-inch depth seems to be a reasonable compromise between optimum accuracy of the test and sampling practicality. Finally, the samples need to be dried immediately. They should be completely dry within one day of when they are taken. I have seen sample nitrate nitrogen levels increase by a factor of 2 to 3 times just from sitting around damp over a weekend.

Agronomy Factsheet #17 "Presidedress Soil Nitrate Test for Corn," which explains the PSNT in detail, is available from Penn State Cooperative Extension offices.



Statewide Corn Checkoffs

What Is a Checkoff?

For each bushel of corn sold in 19 different states, a specified rate of checkoff is invested by the seller at the first point of sale. These monies are then collected at the state level. A state checkoff or promotion board of farmer directors invests the money in state programs of research, market development and education to increase the demand for corn. The farmer directors also invest in the

National Corn Development Foundation, which is the financial watchdog of the National Corn Growers Association. Then, on a national level, NCGA invests checkoff dollars in research, market development and education with the mission to enhance corn profitability and usage to improve the quality of life in a changing world.

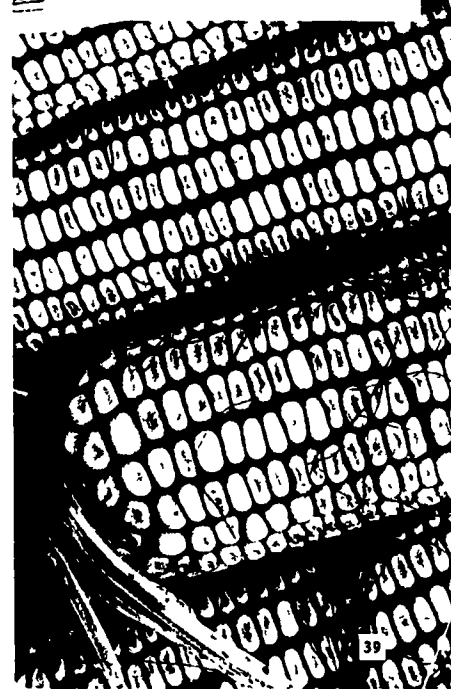
State	Year of Checkoff	Checkoff Rate	Checkoff Rate
Alabama*	1979	1986	1 cent
Colorado	1979	1987	1 cent
Georgia	1984		
Illinois	1971	1982	1/2 cent
Indiana	1971		
Iowa	1967	1977	1/2 cent
Kansas	1975	1977	1/2 cent
Kentucky	1982	1990	1/4 of 1%
Louisiana*		1986	1/2 cent
Maryland	1977	1991	1/2 of 1%
Michigan	1973	1993	1 cent
Minnesota	1978	1990	1/2 cent
Missouri	1978	1984	1/2 cent
Nebraska	1973	1978	1/4 cent
New York	1988		
North Carolina	1978	1979	1/2 cent
North Dakota	1987	1991	1/4 of 1%
Ohio	1977	1989	1/2 cent
Pennsylvania	1973		
South Carolina	1991		
South Dakota	1986	1988	1 cent
Tennessee	1986		
Texas	1989	1990	1/2 cent
Virginia	1979	1980	1 cent
Wisconsin	1975	1982	1/10 cent

* Alabama and Louisiana do not have state associations.

NCGA - NCFD

corn facts

Farmer-invested checkoff dollars and the strong membership base of the National Corn Growers Association and state affiliated associations continue to be the corn industry's catalysts in developing new products and maintaining traditional markets.



Pennsylvania Corn, Soybean Conference Set

GRANTVILLE (Dauphin Co.) — Plans are nearly complete for the 1997 Corn and Soybean Conference scheduled Feb. 7 at the Holiday Inn at Grantville.

This year's program promises to be a good one and will feature Dave Cruse, an entertaining ag broadcaster from Iowa, who will provide us with his forecast for the 1997 corn and soybean markets.

The program will also feature a recap of the growing season for corn and soybeans by agronomist Mike Brubaker, president of Brubaker Agronomic Consulting Service. Dr Jim Bierlien from Penn State's

Ag Economics and Rural Sociology Department will take a look to the future in another presentation and ask producers if they are ready for managing farms in the 21st century.

Other topics on the program include the performance of Bt corn hybrids this year, a report on the activities of the Maryland Grain Producers Utilization Board, a review of some of the new uses of soybeans, and

an update on some of the added value soybean varieties that are being developed.

The conference will also include ag industry exhibitors, Five Acre Corn Club and Soybean Yield Contest awards, and reports from the Pennsylvania Master Corn Growers and the Pennsylvania Soybean Board. More information on registration will be available soon. Mark your calendars and plan to attend.

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