

RESEARCH UPDATE: PRE-SIDEDRESS NITRATE TEST IS EFFECTIVE FOR FALL CABBAGE

A pre-sidedress nitrogen test is an in-season test used to determine if additional nitrogen should be applied to a crop during the growing season. Use of the test avoids the use of excess nitrogen fertilizers, thus eliminating potential run-off and provides cost savings in labor and chemicals. It is especially useful in soils that are high in organic matter or have had a cover crop or manure turned under before planting. This test has been used successfully with corn, potatoes, peppers and some cucurbits. This research update looks at its use in fall cabbage. The test was done in 27 fields throughout the Northeast. The fields had been previously planted with sweet corn that was disked in after harvest. Five-week-old cabbage transplants were planted in the soil the last week of July or the first two weeks of August. PSNT tests of NO₃-N were taken two weeks after planting.

Results showed that the critical soil concentration of NO₃-N levels was 24 ppm NO₃-N. In other words, if your individual soil test reveals a number greater than 24 ppm NO₃-N than further applications of nitrogen fertilizer are unnecessary and will not increase yields. If your individual soil test reveals a number less than 24 ppm NO₃-N than the addition of nitrogen will increase yields. This critical number is the same number used for both sweet corn and field corn and is only slightly higher than the number used for celery and lettuce. The usual nitrogen recommendation in the Mid-Atlantic States is for 112 to 168 ppm N/ha. If a PSNT shows NO₃-N concentrations are less than 9 ppm than adding a full complement of fertilizer is recommended. If your soil test reveals a number in the range of 10 to 23 ppm, then you could reduce the amount of nitrogen you apply by as much as 25 to 50%.

Note: This research was conducted in the state of New Jersey, Connecticut, Delaware, and New York. Also, this is just a summary of the work. This is not an implied endorsement.

Original Source: Heckman, J.R., T. Morris, J.T. Simms, J.B. Sieczka, U. Krogmann, P. Nitzsche, and D. Ashley. 2002. HortScience. 37(1):113-117.

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