

Mid-Season N Management (PSNT)
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Soil testing for nitrogen (N) during the growing season of annual crops is one of the most useful recent developments in soil fertility management. Without the PSNT (Pre-sidedress Soil Nitrate Test) growers can only guess about the need for N fertilizer. As a consequence of not knowing they may often choose to apply supplemental N during the growing season as a matter of insurance.

The PSNT is especially useful in situations or fields where growers have adopted practices for building soil organic matter content and the soil N supplying capacity. Such practices as spreading compost or manures, growing legume cover crops, and following good crop rotations build soil fertility. These practices are commonly used in organic crop production, a farming system where the PSNT is especially helpful. In short, farming practices that build soil organic matter content and the ability of the soil to supply N during the growing season are ideal situations for where the PSNT can often save growers on the cost of N fertilizer.

On very sandy soils, or soils of low in organic matter content, or of degraded fertility status, the PSNT will nearly always find that sidedress N is needed. These situations are not good sites for employing the PSNT. The low N supplying capacity of such soils can be often be predicted without a soil test. Growers should instead focus their PSNT soil sampling efforts on fields well-endowed with organic matter and likely to be good suppliers of plant available N.

Soil sampling for the PSNT is different in many ways from traditional soil fertility testing. PSNT soil samples must be taken at an early growth stage of an annual crop. The probing to collect the soil samples should be from the 0 to 12 inch depth. The soil sample should be dried quickly. They should be sent to a soil test lab that can provide rapid analysis, reliable service, and report the results in a timely manner.

Soil sampling for the PSNT is performed during the early growth stages of row crops. This soil test works well for a wide variety of annual crops but PSNT soil sampling is not recommended during the production of perennial crops. The PSNT soil test results are used to determine if the soil has an adequate supply of available N. If, for example, the PSNT soil test level is found to be 25 ppm N or greater, the farmer can with confidence grow the crop without applying supplemental N fertilizer during that growing season. If, however, the PSNT finds that the soil test level is low, some supplemental N fertilizer may be recommended.

More information about how to use the PSNT soil test for a wide variety of vegetable crops can be found at Rutgers New Jersey Agricultural Experiment Station on the web: <http://njaes.rutgers.edu/pubs/publication.asp?pid=E285>