



NITRATE - NITROGEN SAMPLING

TIME OF SAMPLING

Soil samples should be collected when corn plants are 6 to 12 inches tall (measured from the ground surface to the center of the whorl).

SELECTING TEST AREAS

Soil samples should be collected within several test areas that are 1 to 10 acres and seemingly uniform with respect to soil characteristics and management histories. Care should be taken to avoid unusual spots (eg., sites of old barnyards, feedlots, or manure piles, field edges or ends where fertilizer applicators may have made skips or double applications, abnormal patches of growing weeds or plant residues, or small areas where corn plants suggest differences in N availability).

The optimal number of test areas per farm should be expected to vary with many factors. First-year users of the test should consider testing about five areas for the first 100 acres and two more areas for each additional 100 acres. Information gathered in the first year can be used to help select future sampling strategies that are appropriate for a particular farm.

DEPTH OF SOIL SAMPLING

Samples collected for late-spring soil test are recommended to be taken at 1, 2 and 3 foot depths.

NUMBER OF CORES PER SAMPLE

Soil samples analyzed for this test should be derived from at least 16 to 24 cores. Care should be taken to ensure that the soil samples are collected in a manner that is not biased by the presence of corn rows or bands of fertilizer. At least 24 cores should be collected if anhydrous ammonia was applied for the present crop. Sampling bias can be minimized by collecting soil samples in "sets of eight" cores that have various assigned positions relative to corn rows. By this method, the person doing the sampling moves in random pattern within the test area to select approximate positions for collecting cores. Each time a core is collected, however, its exact position is selected relative to the two nearest corn rows. The first core is collected in a row. The second is collected one-eighth of the distance between any two rows after moving to another part of the test area. The third is collected one-quarter of the distance between any two corn rows after moving to another part of the test area. The process is continued until the eighth core is collected seven-eighths of the distance between any two corn rows.

The soil from all cores should be crushed and thoroughly mixed before a sub-sample is removed for analysis.

HANDLING AND SHIPPING SOIL SAMPLES

Moist soil samples should be protected from temperatures above 75 F and should be refrigerated if they cannot be analyzed within two days. Mailing usually poses no problem if the samples are without refrigeration for no more than two days.

CAUTION

Soils that are extremely wet or muddy should not be sampled. Incorrect results will be obtained if water "drips" from the sample.

Sampling fields with anhydrous ammonia applied or knifed in manure (at a rate to provide more than 50# N per acres) will not give accurate results.

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