

Sampling Fields for Nitrate Levels in Corn

The most important step in obtaining a meaningful analysis is to collect a representative sample. Every field will be different based on planting date, variety, fertilizer and manure applied, and soil type susceptibility to drought stress. Ideally, you would approach corn stalk testing similarly to fertility testing, but that probably isn't very realistic.

Here is a more practical approach to collecting a corn stalk sample for nitrate evaluation.

First, observe the entire field to determine where most severe stressed corn is located, what percent of the field is severely stressed, and the most likely pattern to be chopped.

Then sample diagonally across both good and bad areas in the field based on the likely path of the chopper. Focus on collecting a representative sample of each load of green chop.

-- Collect samples from a minimum of 8-10 locations within a field. Cut the stalks at the height you plan to chop. Collect the sample and deliver to the testing site as soon as possible.

OR

-- Cut 3 or 4 stalks from each area of the field that appears to be different. Take a 4-inch section of each 1/4th of the stalks. Chop those subsections in half and take a subsample of the chopped material for the sample. The remaining subsample can be used to determine the moisture level of the corn.

For more information on how to test corn for moisture content see Determining Moisture Level of Immature Corn Silage, Recovery 14 (ISU) <http://www.extension.iastate.edu/Publications/RECOVERY14.pdf>.

If sending to the ISU Veterinary Diagnostic Lab, the sample size should be at least 1 quart. Cut all forages to a length of 3" or less. Pack samples tightly to exclude air, and seal airtight in plastic bags. Keep refrigerated until submitted. Transport samples to the laboratory as quickly as possible. The VDL only accepts specimens referred by a licensed veterinarian, and the appropriate submission form must accompany all specimens. Your veterinarian will download the appropriate form. The fee for nitrate/nitrite testing is \$40 per sample and will be billed through your local veterinarian.

Many of the laboratories that test forages for nutrient content also can test for nitrates, but contact individual labs prior to sending samples to check for fees and forms needed.

It is best to sample and test for nitrates just prior to when you plan to start chopping for green chop feed. Nitrate levels can change quickly following a significant rainfall, negating a prior nitrate test level. If you will ensile the chopped corn, test a sample after the silage has gone through the fermentation process and just prior to feeding.