# Use microwave to test forage moisture level

NEWARK, Del. — Each year five to 20 percent of the annual hay and silage crop cannot be fed to dairy cows because it's chopped or baled at the wrong moisture content. But many dairy farmers own a kitchen appliance that can tell them — at the push of a button — when their crop is ready to harvest.

"A microwave oven can give you a quick, 95 percent accurate check on forage moisture," says Dr. George Haenlein, extension dairy specialist at the University of Delaware. "The technique works on grasses and legumes and on forage from the windrow, bale or silo — provided your family doesn't object to the smell of hay or silage in the kitchen."

The microwave can also be used to check the moisture content of haylage already ensiled.

The testing process takes about 15 minutes. It requires few additional tools and just a few simple calculations. Here's what to do.

First, collect a representative sample of the forage crop. Chop this into 2- to 3-inch lengths with heavy sheets or hedge clippers.

Place a microwave-safe ceramic plate or heavy paper plate on a gram scale. Record the weight of the empty plate. Then weigh out 100 grams of the fresh chopped forage and spread it evenly on the plate. If the plate won't hold 100 grams, record the fresh weight of the forage to the nearest gram.

The accuracy of the test depends on the quality of the scale and the accuracy of the weights recorded. Haenlein says a good diet scale that weighs in grams is acceptable and costs about $20 to $25. But a balance scale which weighs to the nearest one-tenth of a gram is perferable. Balance scales are available from farm supply catalogs for about $80 to $100.

Fill an 8-ounce measuring glass with water to the three-quarter level and place it in a back corner of the microwave to prevent the forage from charring and to protect the oven.

Put the forage plate in the oven. For haylage (50 to 70 percent moisture content) heat for four minutes; for hay ready to rake (35 to 40 percent) or baled hay (20 to 25 percent) heat for two minutes.

Remove the plate, weigh it and record the weight. Mix the forage, rotate the plate and return it to the microwave. Heat haylage an additional minute, or hay an additional 30 seconds. Remove the plate and again weigh it and record the weight.

Continue this heating, mixing and weighing procedure until the forage weight does not decrease by more than two grams, at which point you have reached the dry weight, Haenlein says. If the forage starts to char or

this stage, use the last recorded weight as the dry weight.

To figure the moisture content, subtract the final dry weight from the beginning fresh weight of the forage. Divide this difference by the beginning fresh weight and multiply by 100.

For example Haenlein says if you measured out 100 grams of forage on the plate and, after drying, the final weight was 71 grams, the calculations would be: 100 grams - 71 grams = 29 grams; 29 grams divided by 100 grams = 0.29; 0.29 x 100 = 29 percent moisture content.

# Montgomery no-till acres increase

NORRISTOWN — The Montgomery County no-till planting program has had a successful spring planting season. About 40 cooperating farmers have planted over 1200 acres using the Montgomery County Conservation District's no-till planting equipment.

The program, in its second year, has already exceeded its goal of 1,000 acres for the year. Still ahead are summer forage crop seedings, and the fall small grain planting season.

No-till, short for no tillage, is the name for the practice of growing farm crops without plowing, disking, or disturbing the soil surface in any way. This reduces or eliminates soil erosion in the fields. Soil conservation is the primary reason for the use of no-till practices.

**Ed Brzostek, district conservationist, soil conservation service, inspects Montgomery County no-till corn field.**

According to Bill Steuteville, the No-Till Program Coordinator, the crops look very good; "on the whole, I am very happy with the no-till crops I have seen in Montgomery County." He adds, "This has been an unusual spring planting season. No-till has stood up under some pretty severe conditions this year."

The program, created to promote no-till agricultural practices, has enabled area farmers to try it without having to invest in expensive equipment. The program has also made no-till affordable for small farm operators who simply can't afford the new equipment necessary for no-till.

In addition to these farmers, other Montgomery County farmers have used no-till on their own. These farmers, using thjeir own equipment, have planted an additional 2000-4000 no-till acres in Montgomery County. Steuteville thinks "These acre figures represent a dramatic increase over previous years, but I believe an even more dramatic increase will occur in years to come." Anyone interested in no-till or having questions, should call Bill Steuteville at the Soil Conservation Service in Norristown at 279-1178.