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Corn Silage Harvest using Harvester Mounted Kernel or Crop Processors

Michael L. Westendorf, Ph.D., Animal Science



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Harvesting corn silage in the fall is often a balancing act between optimizing yield, digestibility, and nutrient content when you have time to get it out of the field. This could vary between harvesting at milk stage all the way to black line. Silage harvested at milk contains about 10 percent grain, while that harvested at full black line contains 45 per cent grain. Although grain percentage is higher when harvested later, silage will have lower dry matter and fiber digestibility at black line. Some research has shown that peak milk occurs at one-half to two-thirds milk line. Greater than two-thirds milk line all the way to a black line harvest will also result in increasing levels of corn in the manure.

Past recommendations have been that when silage was ready for harvest, we still had several weeks more to complete the task. Current understanding of silage production indicates this is not the case. For starters, dry matter content can change rapidly during this period. And although yield will increase with a later harvest, dry matter digestibility and nutrient content will decrease.

A new technology which has the possibility of increasing digestibility when corn silage is harvested later is the use of kernel or crop processors. Kernel processors are mounted on forage harvesters just behind the cutter head, and prior to the blower. They consist of two rollers turning in opposite directions similar to the conditioner on a mower-conditioner. The distance between the rollers is about the thickness of a dime.

The chief effect of using a kernel processor is to reduce the particle size of the forage. When well-eared corn silage is harvested with a crop or kernel processor, corn grain will become more digestible and less will appear in the feces, and cobs will be more digestible as particle size is reduced.

Processing the corn cracks the kernel and makes the starches more available for digestion in the rumen and helps to increase the availability of all plant nutrients. Kernel or crop processors will make it possible to harvest at a later maturity with a greater theoretical length of cut. One individual has stated that the real benefit of the crop processor is that it allows a greater length of cut while still breaking up kernels and cobs. Corn silage that is too mature and too dry will never make the

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Harvest Rootworm Damaged Corn Early To Reduce Losses

Daniel Kluchinski, Mercer County Agricultural Agent

This year in many areas of the state, especially the northern counties of Warren and Sussex, corn rootworm has led to significant damage in corn. The effect of the rootworm larvae feeding, however, may not be noted until the fall. For some corn stands, the plants may be lying flat on the ground. In these situations, these fields or areas within fields should be harvested early.

For most producers however, the first indication of rootworm feeding damage would occur in July, when strong winds or heavy rainfall knock over plants. At that time, looking at the plant root system would indicate that the roots are severely damaged or there are almost no roots at all. However, as the season progresses, the corn plants are able to produce additional roots and grow upright. These plants are curved or "goose necked," a typical and classic symptom of this insect damage.

These plants go on, in most part, to pollinate and produce an ear. However, the grain can be lost as the season progresses and stalk disease develops. The stalk rot disease becomes more prevalent as the plant matures and begins to dry down. The ear may also be lost as the pull of gravity on the ear causes the plant to fall back to the ground. This is especially true if the ear is large and if wet or windy conditions occur. With early harvest, it is necessary to dry the wet corn, and although not the most desirable situation, it is better than losing the crop in the field. □

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best feed and the crop processor will not compensate for this. The upshot is this: don't try to compensate for poorly managed, over-mature corn silage with a crop processor.

Cow responses seen are increases in both corn silage and dry matter intake and a 2 to 5 per cent increase in milk production. Fewer kernels of grain in the feces are also a consistent observation. Most of the research which has been done with kernel processors has been completed at a given moisture percentage. Research needs to be completed at differing moisture and maturity levels and with some of the new corn silage hybrid varieties.

The processors which you may have heard or read about recently are mounted on self-propelled forage harvesters. It is also possible to process using stationary rollers, either pre- or post-ensiling.

John Deere, New Holland, Claas, and Hesston all make self-propelled forage harvesters with kernel

Prepare For Soybean Harvest

William J. Bamka, Burlington County Agricultural Agent

As we prepare for the soybean harvest, it is important to remember that management of the soybean crop goes beyond soil fertility, insects, diseases and weeds. In order to remove as many beans as possible and ensure maximum profit, it is important to properly manage the harvest of the crop you worked so hard to produce. Harvest losses and damage should be kept below 10 percent. Keep the following items in mind when preparing for harvest.

- 1) Harvest soybeans as soon as they mature. Optimum moisture level is 14%. This usually occurs 2 to 3 weeks after all leaves have dropped.
- 2) Harvest can begin at about 18 percent moisture, but moisture should be no higher than 13 or 14 percent for safe storage.
- 3) Delayed harvesting may increase shattering losses and decrease seed quality.
- 4) Follow the manufacturer's instructions for adjusting the combine.
- 5) Set the cutter bar as low as practical to avoid large numbers of unharvested pods.
- 6) Maintain a relatively slow ground speed. Mature soybeans frequently shatter easily.
- 7) Make sure the reel enters the crop just enough to maintain the crop's movement into the platform.
- 8) Check for harvest losses. Leaving an average of four beans per square foot on the ground equals a loss of 1 bushel per acre. □

processors. It is expected that pull-type harvesters equipped with kernel processors will soon become available.

The question is: will it pay? Large, six- or eight-row, self-propelled harvesters equipped with processors can cost well in excess of \$200,000. The cost of the technology on a self-propelled harvester is between \$10,000 and \$15,000. It is expected to be available on pull-type harvesters at an optional cost of about \$6,000. Estimates of increases in feed values are \$5 to \$10/ton of dry matter in mature corn silage, and perhaps \$2 to \$4/ton in immature corn silage. It is clear that relative value is greater in more mature corn, such as greater than two-thirds milk line. Corn-silage harvested at one-half to one-third milk line will benefit the least. There may also be different effects on different hybrid corn-silage varieties.

Crop or kernel processing is just another tool producers have to increase performance. Those interested should contact their local county agent or feed company representative. □

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
P.O. Box 231
Cook College
New Brunswick, N.J. 08903-0231

PLANT & PEST ADVISORY FIELD CROPS/LIVESTOCK EDITION CONTRIBUTORS

Rutgers Cooperative Extension Specialists

Joseph R. Heckman, Ph.D., Soil Fertility
Bradley A. Majek, Ph.D., Weed Science
Michael L. Westendorf, Ph.D., Animal Science

RCE County Agricultural Agents and Program Associates

Field Crops IPM Prog., Joseph Ingerson-Mahar (609-769-0090)
Burlington, William J. Bamka (609-265-5757)
Mercer, Daniel Kluchinski (609-989-6830)
Salem, David L. Lee (609-769-0090)
Program Associate, Miles Huffaker
Sussex, Robert C. Mickel (201-579-0985)
Program Associate IPM, Susan Eck-Jones
Warren, Everett A. Chamberlain (908-475-6503)

North Jersey Resource Conservation & Development Council

Brian Aldrich (908-852-5450)
NJ Department of Agriculture
Robert Chianese, Beneficial Insect Lab

Newsletter Production

Jack Rabin, Assistant Director, NJAES
Cindy Rovins, Editor and Designer

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