

## Corn Silage Harvest

Cache County farmers are looking at one of the best crops of field corn ever produced in this valley. A series of unusually hot summer days, along with copious amounts of irrigation water, has resulted in a bumper crop of high quality corn for silage. As a general rule, growers are planting shorter season varieties and plant breeders continue to develop hybrids that produce high grain yields with elevated levels of digestible nutrients. We are confident that this season's crop will reach proper maturity before frost inhibits growth. Our biggest challenge this year is to find adequate financial resources to afford the fuel needed to harvest and store the crop.

We invite local growers to examine our 2006 USU Extension Corn Performance Trial plots at the John Allen farm in Benson. (4468 N. 3200 W.) John has been a great cooperater for the last five years and always does a superb job in helping us manage the necessary details for corn variety research. This year's plots were planted on May 10 with a 6-row JD MaxEmerge Plus VacuMeter corn drill. The planter was calibrated to plant approximately 35,000 seeds per acre. We changed back and forth from standard to small planter plates depending on which variety was being planted with a given pass. The varieties are identified with proper signage at the west end of the field, which is located east of the Allen dairy. We anticipate harvesting the plots September 12 and 13.

Growers were reminded at last years Fall Forage Field Day of the necessity of harvesting corn silage at the proper whole-plant moisture level. Harvesting at moisture levels that are too low will result in poor packing, inadequate air exclusion, poor fermentation and greater spoilage. Harvesting at moisture levels too high will result in excess seepage, loss of nutrients and undesirable clostridia fermentation. Wet silage will also have a foul smell with poor feed quality and low palatability. Recommended moisture content for corn silage is 65- 70% for horizontal bunker silos and 60-70% for bag silos. A common recommendation is to start harvest at 1/3 milk line and be finished by 2/3 milk line. The tendency is to "jump the gun" and chop corn before it is dry enough.

A simple procedure that can be used when more accurate methods are not available to determine moisture levels is referred to as the "grab test". This is accomplished by using a forage chopper, heavy knife or yard chipper to chop a few plants from the field, avoiding headlands. Tightly squeeze a handful of finely cut material in your hand for 90 seconds. Release the grip and note the condition of the ball.

Juice runs freely or shows between the fingers - 75 to 85 % moisture

Ball holds its shape and the hand is moist - 70 to 75 % moisture

Ball expands slowly and no dampness appears on the hand - 60 to 70 % moisture

Ball springs out in the opening hand - less than 60 % moisture

Another factor that can never be over-emphasized is the need of adequate packing at the bunker. Vigorous packing excludes oxygen and is essential to proper fermentation. Experts tell us that bunker silo dry matter density should be a minimum of 14 to 15 pounds of dry matter per cubic foot. Recent silo density studies at Penn State revealed

that only 30 percent of the growers tested actually achieved that level of density. The recommendation is to have 800 pounds of packing weight for every 1 ton of silage delivered per hour. For example, if 50 tons of silage is delivered per hour, 40,000 pounds of packing equipment is needed at the bunker. Properly packed silage always has a higher feed value and less spoilage than silage that is not properly packed.

It is not unusual for forage harvesters to deliver forage faster than the on-farm packing equipment can handle it. Since slowing down delivery is usually not a realistic option, adding more weight and/or more units to the packing crew is likely the best way to improve compaction. Reducing the thickness of the silage layer to be compressed with each pass is another way to improve density. A good goal is to limit push-up layers to a 6 inch thickness. I realize that is easier said than done.

With enhanced yields this season we will likely have corn piled much higher in the bunkers. Safety has to be a major consideration for all of us. No one will care how well the silage is packed if a serious accident occurs from someone rolling a packing tractor off the pile. Always use good judgment and work carefully.

Silos that are not properly covered immediately after harvest will have significant losses of feed quality. Protecting chopped corn from exposure to oxygen, sunlight, rain and snow is always cost effective. One study that was cited at a recent field day showed an average dry matter loss of 30 percent from the top three feet of the bunker. Professionals recommend the use of 4-6 mil black or black/white plastic, overlapped by 4 to 6 feet, and secured with uniform weights such as used tires. Research shows an estimated return of \$8.00 for every \$1.00 invested in covering silos.

A final recommendation is to wait at least one month after the “Stable Storage Stage” to begin feeding new crop silages. Silage will be properly fermented and have a higher feed value if the pit is not opened until Christmas.