The 2005 corn crop was planted early in most areas of Michigan, and the growing season so far has been generally favorable with expectations for above average corn silage yields in 2005. Sufficient rain may be the big question. As the summer progresses growing conditions may become less favorable for high corn silage yields. However, even in years with droughts and/or early frost, excellent corn silage can be made if proper harvesting management methods are followed.

### Tips for Making Good Corn Silage

1. **Harvest at 30-40% Whole Plant Dry Matter (WPDM).** This is the single most important piece of information to know for making high quality corn silage. Bacteria present on the corn plants in the field ferment plant sugars contained primarily in the stalk to produce fermentation acids that preserve the corn silage. To ensure a vigorous and successful bacterial fermentation, the dry matter (DM) content of the whole corn plant material at harvest is very important. The proper DM content for optimum fermentation is between 30 and 40%. If corn silage is wetter than 70% moisture, excessive fermentation acids can reduce palatability and feed intake. Wetter silage also is more likely to result in effluent loss, which is a huge potential environmental concern for many Michigan dairy farms. If corn silage is drier than 40% DM there may not be enough sugars available for adequate fermentation increasing DM losses and resulting in heating at feedout. In addition, if corn silage is too dry, kernels become hard and starch digestibility is reduced.

   Determining the WPDM at the beginning and during harvest is the most critical and important harvest management practice to implement. Dry matter can be determined using a Koster™moisture tester or microwave oven.

   A publication on using a microwave for moisture testing can be obtained at: [http://ianrpubs.unl.edu/range/g1168.htm](http://ianrpubs.unl.edu/range/g1168.htm).

   Kernel milk line has been used in the past as an indicator of when to harvest corn for silage. Kernel milk line is an indicator of kernel maturity but is not a good indicator of WPDM.

2. **Harvest Chop Height at 4 to 6 Inches.** Some publications suggest chopping at 12 to 16 inches from the
ground, which will increase the grain concentration and reduce the concentration of fodder in the silage. Implementing this 12 to 16-inch concept would increase the energy density but decrease the fiber content of the silage. However, many producers are concerned that dairy cow diets do not contain sufficient fiber and they purchase dry hay or straw to increase dietary fiber. This practice makes no sense. Corn plant fodder is a good source of fiber and leaving potentially digestible fiber in the field while purchasing other perhaps less digestible fiber sources is a costly venture. MSU’s recommendation is to harvest corn at 4 to 6 inches for silage unless grain price is very high compared with the price of forage you would have to purchase.

3. **Theoretical Length of Cut (TLC) Equals ¼ to ½ Inch.** Kernels and cobs need to be broken and to accomplish this chop length may need to vary between ¼ to ½ inch TLC for choppers without a processor depending on WPDM. A chop length of ¼ inch should be used only for dry corn plant to ensure that the kernels are nicked. Short chop-length silage will require inclusion of another forage source in the ration for adequate effective fiber. For choppers with a processor, a ¾ inch TLC is recommended when WPDM is 30 to 40%. Processing when WPDM is less than 30% may result in mashing of the kernels and stalk and the processor rollers should be backed-off to prevent mashing.

4. **Filling and Packing.** To prevent spoilage between filling layers fill bunkers as rapidly and continuously as possible. Stopping for a day or more may result in spoilage layers that can depress feed intake. Pack bunkers continuously during filling to expel air that is trapped between plant particles.

5. **Covering.** Cover bunkers and tower silos as soon as filling is completed. Plastic covering will prevent exposure of the top silage surface to air and water and control the extent of spoilage in the top layers. Tucking the plastic around bunker sidewalls will prevent water from seeping into the silage which will help prevent sidewall spoilage.

6. **Preventing Leachate Problems.** Harvesting at 30 to 40% WPDM is the first step in preventing silage seepage. Harvesting at less than 30% WPDM for horizontal silos increases the potential for seepage. Vertical silos require higher WPDM to prevent seepage. After filling and covering is completed, take care to clean up plant material from around the bunker, bags, piles, or tower silos. Implement a plan to direct water from the silage feed bunk area to a properly designed system to prevent environmental problems.

As the 2005 growing season progresses if drought or early frost conditions become a potential problem MSUE will publish timely corn silage alerts with information relevant to the problem.