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This Year's Corn Silage Harvest

Dr. Rich Erdman, Professor, Dairy Nutrition, University of Maryland

With this year's early planting dates, and high temperatures and dry weather conditions during late June and July, corn silage harvest in Maryland and the Mid-Atlantic region will begin shortly. Corn silage is one of the simplest forages to harvest and store and generally has a high feeding value under a variety of harvest and storage conditions. However, a few simple management steps taken at harvest can make the difference between having a high quality versus just average quality corn silage.



Courtesy of Bally Bright's Farm

Target 32-34% Plant Dry Matter at Harvest

We target a dry matter (DM) content of 32-34% (66-68% moisture) at harvest which results in silage with a DM content of 30-32% at feed-out. Past recommendations have stressed harvesting at half to 2/3 milk line stage of maturity. However, the real key to producing high quality corn silage is the moisture content, not the stage of maturity at harvest. No other management factor has a greater impact on feeding value. Check the moisture when you begin harvest using either a Koster tester or a microwave at the farm. Don't harvest too early if it's too wet.

If the DM content is too low (<31% DM at harvest), silage fermentation is excessive. This causes a silage pH that is too low and results in butyric acid type fermentation. Silage DM losses during fermentation are increased and livestock silage intake is reduced. A good thumb rule is that livestock feed intake is reduced by 2% for each unit of DM percentage below 30% at feed-out. In essence, feed intake is reduced 10% for 25% DM corn silage compared to a 30% DM corn silage.

If the DM content at harvest is too high (> 35-36% DM), the silage will not attain adequate fermentation. This causes too little lactic acid production to reduce silage pH and preserve the forage. This leads to unstable silage that will heat at the silo face and in the feed bunk reducing feed intake and increasing feed DM losses. Moisture content also has a big impact on starch digestibility. Today's corn varieties have more vitreous starch content (hard endosperm) that require longer and specifically wetter storage conditions to maximize starch digestibility in dairy and beef cattle. If the silage is too dry, starch digestibility will be reduced. While some of this can be overcome using a kernel processor on the forage harvester, having the right DM content at harvest is still critical.

Cont. pg. 2

Drought Stressed Corn Can Still be Excellent Feed

Of course corn silage tonnage per acre will be down during a drought year due to poor kernel fill and reduced plant height. Because of the reduced starch content, there is a perception that drought stressed corn has reduced silage nutritional value. However, our experience at the University of Maryland's Clarksville Dairy Research Unit suggests otherwise. While it requires more acres to produce the tonnage needed to feed your herd, the resulting silage is generally of good feeding quality as long as the silage has been harvested at the correct DM content. Lauer (2007) at Wisconsin did a comparison of corn hybrid composition across locations and years of

corn harvested after a range of growing season moisture conditions ranging from below normal to drought. While DM tonnage ranged from as little as 2.7 to as much as 9.8 tons per acre, there was very little quality difference for corn silage during drought compared to below normal rainfall years. Drought harvested corn will have lower starch and a higher NDF content but the NDF has less lignin and the NDF digestibility is greater. Overall, the feeding values are about the same. The biggest concern is nitrate accumulation and even that can be handled by simply letting the silage ferment and by staying out of the silo. The biggest error during drought years is harvesting too early. Be sure to let the corn plants attain 32-34% DM before harvesting.

Pack, Pack, Pack, Cover, and Seal

Just harvesting at the right DM content is not enough. Air infiltration in a silo or trench can ruin what could have been good silage. This can be overcome with adequate packing to get rid of excess oxygen. A trench silo should be continuously packed during the harvesting period. Once the harvest is done, be sure to seal the silo with an adequate (4-6 mm) plastic weighted with either old tires or sand to prevent air infiltration. There currently is a lot of interest in covers specifically designed for use in trench and bunker silos, but covers alone will not compensate for poor packing and inadequate sealing.

Warm Season Annual Crops as a Drought Emergency Crop

Jeff Semler, Extension Educator, University of Maryland Extension

With dry conditions spreading across Maryland and other Mid-Atlantic states, sorghum and its relatives, sudangrass and millet, can be planted to supplement forage supplies for dairy and livestock producers.

Producers dependent on forage production can utilize summer plantings of these crops to supplement current feed production. Sorghum crops can yield three to eleven or more tons per acre. Higher yielding species typically will contain lower fiber digestibility. Fiber digestibility will be greater in brown midrib species and can have energy values similar to corn silage. Choosing which species and variety to plant will be dependent upon the nutritive requirements of the livestock to which it will be fed and the need to increase forage production.

Germination during drought conditions can be a challenge. Seed should be planted two inches deep into a firm seedbed to improve germination in dry soil conditions.

Rolling or cultipacking soil behind the grain drill will also aid in creating good seed to soil contact and draw moisture towards the surface.

Prussic acid poisoning can be a problem. Prussic acid is found in its highest concentrations in the leaves and new shoots making grazing cattle most susceptible. Frost and severe drought frequently increase prussic acid content and fields that have experienced these weather conditions should not be grazed. Prussic acid poisoning usually is not a problem in stored feeds. Concentrations of prussic acid decrease during the sun curing and fermentation process. Sorghum crops can be stored as chopped silage, round bale silage and sun cured hay.

If the dry weather persists, planting winter cereals directly into drought stressed summer annuals, or into pastures and alfalfa, can provide fall grazing and harvest as well as a spring forage crop. These



winter annuals can also be planted following a sorghum or corn silage harvest.

During drought years, you can fill your forage needs by having a drought contingency plan using either a sorghum crop or winter cereals. Keep your eyes to the sky and hope for rain but be prepared to respond to drought.

(Portions of this article appeared in an article written by Frank Wardynski, Ruminant Educator, Michigan State University (MSU) Extension.)



Crop Reports

Central

Continued hot and dry weather has stressed both corn and soybeans. Rainfall has been variable across the region, but has provided much needed moisture during critical pollination corn and the beginning of reproductive development for soybeans. Some areas have received more than 10 inches. In contrast to the hot summer we have experienced, cool temperatures over the July 21-22 weekend actually set record low daytime highs in this region. Soybeans are blooming and early plantings are setting pods. High populations of Brown Marmorated Stink Bugs are being found in both corn and soybeans in isolated locations. Properly managed pastures still have adequate forage for livestock, but many have been showing stress from the heat. Some of these pastures are showing signs of improvement since the rains of July 19 to 21. Sweet corn has been spotty with high temperatures causing poor kernel fill. Peach harvest is near completion, and harvest of apples has started in some areas.

Northeast

The record heat of 100+ temperatures last week took its toll on both corn and soybeans especially in the areas that missed the recent rains from the weekend. Some growers have indicated they expect a considerable reduction in yields. Some hay fields are going dormant due to the drought conditions and most fields will produce low yields. Pastures are rated fair to poor with reports of high weed pressure. Peaches and apples also are showing signs of drought stress. Vegetable growers are reporting lower than usual yields due to high heat and humidity. We need some days of steady slow rain.

Southern

Southern Maryland remains hot and mostly dry. In St. Mary's county, rain has been very spotty, with most areas receiving less than a tenth of an inch in the last two weeks. Other areas of the region, particularly to the north have received more. Most of the corn crop has finished pollination. Many corn fields will be a total loss. Soybeans are struggling to hold on. Full season beans are flowering, but pollination and pod set is very poor. Mites are present in many fields requiring treatment in most cases. Growth of most forage crops has stopped. Some farmers are exploring salvaging corn for silage. Nitrate testing will be important for those pursuing that option.

Upper Eastern Shore

The region received some rainfall over the past 2 weeks, but many areas are remaining in severe drought conditions. There are many ponds, ditches, and wells that are lower/drier than ever before. While we have experienced summer droughts that were more severe, we started this year with poor ground water reserves. There are many acres of corn, especially in the southern part of the region, with no ears. It is already beyond the permanent wilting point and rain will not help at this time. The situation is becoming similar for soybeans with full season beans dying and dropping blossoms in the southern part of the region. Wheat beans are growing fine in most areas, but soil moisture is becoming limited for them as they are nearing the rapid growth stage. Many soybean fields are infested with spider mites and not just along the edge of the fields. Even some irrigated fields have spider mites, which is rare. Not as common and too late to cause any harm or worry, but there are

also high populations of spider mites being found in corn fields. So, keep an eye on the wheat beans that are next to drought stressed corn. Good quality hay is being made; there is just not very much of it!

Lower Eastern Shore

Hot and dry conditions continue across the region with the exception of the immediate coastal area. Scattered showers have brought little relief. Outdoor burning bans are still in effect. Much of the corn crop was damaged during pollination and will experience reduced yields. Soybean crop is rated fair to good; scouting for spider mites is warranted. Pasture and hay conditions are rated poor to fair with delayed cuttings.

Timeline: This crop report is for the field observations from July 13 through July 26, 2012. Crop Report Regions: Western (Garrett, Allegany and Washington), Central (Carroll, Frederick, Howard, Montgomery), Northeast (Cecil, Harford, Baltimore), Southern (Anne Arundel, Prince George's, Calvert, Charles, St. Mary's), Upper Eastern Shore (Kent, Queen Anne's, Talbot, Caroline), Lower Eastern Shore (Dorchester, Wicomico, Worcester, Somerset)

Agriculture Weather Report

Adam Caskey, Meteorologist



According to the National Drought Mitigation Center, over 50% of Maryland is in a moderate drought with the driest areas continuing to be the Eastern Shore and Southern Maryland. Actually, the Eastern Shore has the most significant soil

moisture anomalies in the state, but an expected shift in the weather pattern signals the chance for some widespread rain in the last few days of July and early August. Actually, the weather pattern looks favorable for slightly above average rainfall

through August 7th due to thunderstorm chances and frontal activity. Temperatures will likely continue to run warmer than average through the middle of August, however, the intense heat of triple digit temperatures appears unlikely at this time.

Announcements

Accepting Applications for LEAD Fellowships

The LEAD Maryland Foundation is seeking applications for its next class of LEAD Fellows. Applications are due October 1, 2012. Program information and the application form are available on the organization's web site www.leadmaryland.org.

The LEAD Maryland Foundation (LEAD) is a partnership 501(c)(3) nonprofit organization dedicated to identifying and developing leadership for Maryland's agriculture, natural resources, and rural communities.

This new class will be "Class VIII (2013-2014)" and will join 157 others who have completed the LEAD program training, first offered in 1999. The new class will be selected in late 2012 and will begin meeting in February 2013. During 2013 and 2014, Fellows will complete a series of

nine multi-day seminars held at various locations throughout Maryland and Washington DC. Additionally, Fellows will complete a travel study tour.

LEAD invites farmers to apply for the Fellowships. At minimum, half of each class must be farmers, growers, producers, foresters, and watermen. As Fellows learn a tremendous amount from each other, it is important that grain producers and other grain industry emerging leaders are included within each class. For more information, please contact Susan R. Harrison at 410-827-8056 or leadmd@umd.edu

2012 Pesticide Container Recycling Program from MDA

Maryland Department of Agriculture's Pesticide Container Recycling Program will be accepting clean, empty containers from June 1 through September 30, during

normal business hours.

Containers will be collected from their current owners, for safe disposal and recycling.

Containers must be cleaned (triple-rinsed or pressure-rinsed) according to label directions.

Please remember to remove lids and label booklets from the containers prior to drop-off.

Call 410-841-5710 for hours of operation and drop-off location instructions. Collection dates and venues can be found at this link, <http://www.mda.state.md.us/pdf/recycle.pdf>



Upcoming Events



Precision Agriculture Equipment Day

Please join us and learn how to make precision agriculture pay in your operation. Practical and informative advice will be given on variable rate

irrigation, precision seeding systems, variable rate fertilizer equipment, and much more. DE and MD Nutrient Management Credits & CCA credits will be available. Lunch will be available for purchase.

Wednesday, August 8, 2012

9:00 AM – 3:15 PM

Caroline County 4-H Park, 8230 Detour Road, Denton, MD 21629

To register and find more information visit:
www.enst.umd.edu/extension/Events.cfm

Speakers & Topics:

- Dr. Randy Taylor, Oklahoma State University
 - Precision Seeding Systems
- Dr. Joe Luck, University of Nebraska-Lincoln
 - Variable Rate Fertilizer Application Equipment
- Dr. Mike Buschermohle and Lori Gibson, University of Tennessee
 - Increasing Farm Profits using Planter Automatic Section Control
- Wesley Porter, Oklahoma State University
 - Variable Rate Irrigation

For more details please call: 410-228-8800 or 410-758-0166.

Pasture Poultry Twilight Meeting on August 21st



This educational meeting will highlight flock economics, small portable coop design, pasture management for layers, breed differences and include a visit to the Hen House.

Time: 6:30 PM - 8:30 PM

Location: Western Maryland Research & Education Center, 18330 Keedysville Road, Keedysville, MD 21756

Refreshments will be provided. Please RSVP to 301-791-1304

Small Farm bus tour slated for late August

University of Maryland Extension will be conducting a small farm bus tour that offers

a variety of educational stops over a two-day period during late August. The tour will allow participants to “Explore New Farm Income Opportunities,” by visiting successful farm operations on Monday, August 27, and Tuesday, August 28.

The registration fee, which covers bus transportation, hotel accommodations for one night, educational materials and light refreshments, is \$25 per person. To register online, visit www.umes.edu/1890-mce. All registrations and payments must be received by Thursday, August 23.

For more information contact Berran Rogers at 410-651-6070

SIGN-UP TO RECEIVE “AGRONOMY NEWS”

If you would like to receive this newsletter via email please contact Rhonda Barnhart at rbarnhar@umd.edu. The subject line should be: Subscribe Agronomy News 2012.

If you would like a hard copy please contact your local county extension office to sign-up for the mailing list. The list of local county offices can be found at www.extension.umd.edu.



Did You Know

The largest corn yields in history all occurred in the last eight years.

A Big Thank You!!



Maryland Grain Producers' Utilization Board and Maryland Soybean Board are both recognized for their financial contributions that support the publication and distribution of this newsletter. This is another example of the work that is accomplished with the checkoff dollars these two organizations manage.

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