

Missouri Ag News

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Making Silage from Drought-Damaged Corn

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Dry conditions around the state have many corn producers wondering about making silage from drought-damaged corn. Although silage made from drought-damaged corn is usually not as good as that made from unstressed corn, drought-damaged corn can make good livestock feed.

As a rule, drought-damaged corn will have 85 to 95 percent of the feeding value of normal corn silage. Ideally, corn silage would have 60 to 70 percent moisture at harvest. If drought-damaged corn contains less than 60 percent moisture, producers could add some water at the silo.

However, when drought slows plant growth and delays maturity, the moisture content is often higher than is suggested by the appearance of the crop. Taking the time to check the moisture content before harvesting could save a lot of trouble later. MU publication G3151 (<http://extension.missouri.edu/p/G3151>) contains detailed information on how to measure the moisture content of silage using a microwave oven.

Drought-damaged corn should be chopped to 3/8 to 1/2 inch in length. This length of chop should help in packing the silage to exclude as much oxygen as possible. Producers should also sharpen the knives on their equipment before making silage.

Other tips include filling the silo quickly

and packing the silage as tightly as possible. Remember, to make good silage, oxygen should be excluded at all points. One concern with drought-damaged corn is high nitrate levels. High nitrate levels are frequently found where high levels of nitrogen fertilizer were applied and where drought-damaged corn is chopped a few days after a rain.



Corn Silage.

Other factors that contribute to high nitrate levels in corn silage are cloudy weather, extremely high plant populations and shortages of soil phosphorus and potassium.

Ensiling drought-damaged corn is preferred to greenchop because during the fermentation process, the nitrate content can be reduced by 20 to 50 percent. If a producer suspects that the crop may have high nitrate levels, they should have it analyzed before harvest, if possible.

Making Silage...Continued

One word of caution: corn with high nitrate levels produces more silo gas (mainly nitrogen dioxide and nitrogen tetroxide) than normal corn silage. During the fermentation process, a portion of the nitrate in corn silage is converted to nitrogen dioxide or nitrogen tetroxide; the higher the nitrate levels in the plant, the more silo gas that is produced. The reddish-yellow fumes of silo gas often smell like chlorine bleach, and silo gas is toxic to humans. Remember that silo gas is heavier than air and thus tends to accumulate in low areas.

Most often, this is a problem for producers with upright silos, as the silo gas tends to accumulate in feed rooms at the bottom of silo chutes. Silo gas can be a problem for other silage storage systems as well and one should exercise caution around silos during the filling and fermentation process.

If producers have corn with high nitrate levels, there are a few things they can do.

First, they might delay harvesting until the plant begins to "outgrow" the nitrate accumulation. Usually, drought-damaged corn will have normal levels of nitrates after 10 days to two weeks of normal growth (once the drought ends!).

Second, producers might increase the cutting height to 8 or 10 inches. Nitrate levels are usually highest in the lower part of the stem, so increasing the cutting height can help lower nitrate levels in silage.

Finally, if they have high nitrate corn silage in the silo, they could dilute the silage in the ration with other low-nitrate feedstuffs.

Several producers have asked about making "big round bale silage" or baleage from drought-stressed corn. For those not familiar with the practice, this is simply baling high moisture forage and then wrapping the bales with plastic film to exclude oxygen. This could be a way to store the crop if typical silage-making equipment is not available, though corn is difficult to run through a standard round baler. Balers that have recutters to reduce particle length will make better silage out of

corn than will balers without this equipment. Even for balers with recutters, corn stalks are prone to poking holes in the plastic film and thus spoiling silage. While 4 mil plastic thickness is recommended for normal grass silage, drought damaged corn made should be wrapped to a 6 mil thickness.

Harvesting drought-damaged corn for silage can be a way to salvage an otherwise useless crop. Paying close attention to moisture content, length of cut, packing and nitrate levels in drought-stressed corn cut for silage will help make the most of a bad situation.

Final Thoughts:

- * Check nitrates before harvest or at least before feeding. If nitrates are high prior to baling, one might try to cut the crop higher. The bottom foot of the stalk is likely to be refused by animals anyway if they have much choice.
- * Corn stalks are a pain to bale. Slow down and do not over-feed the baler. Bales with net wrap are easier to handle.
- * Utilization of corn fodder bales tends to be low, as the physical characteristics of the stalks makes them difficult for stock to masticate easily. Utilization of dry bales would be higher if they were ground. That said, the nitrate consumed could be higher too.
- * It might not occur to folks that corn stalks do not dry very quickly. While the leaves will dry quickly, the stalks should be checked for moisture content before baling. If left unchecked, the stalks are often wet enough to ruin the hay or worse.
- * Use of a mower-conditioner with a flail type conditioner would likely be the best equipment to cut the crop. Feeding corn stalks through a roll-type conditioner can be problematic.

Rob Kallenbach, Professor Plant Sciences,
University of Missouri, Columbia, MO

Missouri Hay Directory

<http://mda.mo.gov/abd/haydirectory>

This website is put together by the Missouri Department of Agriculture. It allows a search by county, hay type and bale type to find locations in or out of state that have hay available for purchase. In addition hay can be listed for sale if you have any available for purchase.

Contact Mark Murphy if you wish to be included on the list at 573-751-5633 or Mark.Murphy@mda.mo.gov.

SOUTHEAST MISSOURI

Food Bank



Delivering Help and Hope to the Hungry

The Southeast Missouri Food Bank is eager for donations of specialty crops. The food bank will bring a 24 foot box truck to pick up available produce. Edible produce (seconds are welcome) should be in a crate or box.

Contact James Landewee, Operations Director at 573-651-0400 several days ahead of time if possible and specify if a refrigerated truck is needed. He will provide you with a tax receipt for anything you donate to use as a tax right-off.

Options for Livestock During Drought

The first thing I tell people when they ask what to do in a drought situation is to assess their livestock inventory.

Rainfall is continuing to avoid southeast Missouri causing drought conditions to become more severe as the temperature remains high. For most of the area, pastures are poor to very poor. The first thing I tell people when they ask what to do in a drought situation is to assess their livestock inventory. Most people are overstocked to begin with. Selling the non-productive or unnecessary animals is a good way to save money on feed costs. The second is to assess their feed inventory. If all possible pastures are gone and hay is short then other options need to be considered. Be wary of cheap feeds as they tend to be inadequate in nutrients or hard to handle.

Other options to consider after the first two are performed include: creep feeding calves, weaning calves early, feeding grains or by-products, purchasing hay, stockpiling fescue, and sowing winter annuals. Creep feeding and weaning calves early reduces the amount of feed your cows need. A dry cow requires 20%-30% less nutrition than a lactating cow. Feeding grains is probably inevitable for those producers lacking hay. By supplementing cows with a high-quality ration, you will reduce the amount of forage your cattle consume. Limit-feeding cows in a dry-lot situation or restricting them to 10% of the pasture area will prevent damage to your pastures

and allow for faster recovery when it does rain. Purchasing hay is yet another option if you can find a supplier, but do not purchase poor quality hay because it will do more damage than good. A hay test to assess the nutrients in the forage can be one of the best tools you have when purchasing supplements. By-products can be relatively cheap in comparison to hay when based on protein and energy content. Stockpiling fescue and sowing winter annuals such as wheat or rye will only help if we get some rains soon to work in fertilizer and seed.

The key to managing your livestock during drought is to keep your animals in good condition or you will have even bigger problems down the road such as reproductive failure and sick/dead calves. Parasite control can also be an issue with short pastures, so do not skimp on deworming your animals. You can contact me if you need a grain ration formulated for your animals. Be prepared to tell me what commodities you want to use and the nutrient content of your hay.

There is no silver bullet that will be right for everyone. Choose which strategies that work for your farm.....and pray for rain.

Kendra Graham, Livestock Specialist, University of Missouri, Greenville, MO

Corn Irrigation - Do Not Stop Early

I would speculate that most farmers in the Bootheel of Missouri have irrigated more this year, than in any other years in recollection. In most years, irrigation is used to supplement rainfall – this year rainfall supplemented irrigation.

Even though most farmers are ready for harvest to start, irrigation still needs to continue. It will be several weeks before soybeans and cotton is mature, but corn is close. So when do we terminate irrigation in corn?

After corn is in full dent, the crop can still use about 2-3 inches of moisture. Corn will use moisture all the way to maturity, or at black layer formation. However, allowing a crop to stress late in the season – especially if you do



Black layer in corn kernel.

not have water – is the least damaging to the overall yield.

According to Joe Henggler, one method to determine irrigation termination in corn, is to look for the milk line formation. The milk line will start close to the top of the kernel and travel down toward the cob, as the corn kernel matures.

According to Joe, in Southeast Missouri, irrigation should

occur past the 25% milk line formation for electric powered irrigation systems and 50% for diesel and propane systems. Or 25% and 50% of the total milk line in the kernel. However, this year with record high prices for corn, and if the system is

operational, I think I would use the 25% recommendation overall.

A rule of thumb that I used to say, was that corn needed at least one more irrigation after full dent – because the crop is still using moisture until black layer formation, as is shown in the photograph above.

Farmers that irrigated after full dent have consistently stated that both yield and test weight increased.

The decision to terminate irrigation is yours, all factors should be considered including price, machinery management and availability of water. This year, with the high outside temperature and low humidity, once the irrigation stops, the corn should mature rapidly. However, if you are shooting for the highest yield possible, do not terminate too soon.

Van Ayers, Agriculture and Rural Development Specialist, University of Missouri Extension, Bloomfield, MO.



Both Pictures courtesy of Mississippi State University Extension Service.

Executive Order 12-08 issued July 23, 2012

NOW, THEREFORE, I, JEREMIAH W. (JAY) NIXON, GOVERNOR OF THE STATE OF MISSOURI, by virtue of the authority vested in me by the Constitution and laws of the State of Missouri, including Chapter 44, RSMo, do hereby authorize the State Soil and Water Districts Commission to implement an emergency cost share program for water source development and/or water distribution practices to assist landowners engaged in livestock or crop production adversely impacted by the current drought. This emergency cost-share program shall be specifically directed to address water challenges caused by the current drought where implementation of a water source development or water distribution practice would produce an immediate material benefit.

This emergency cost-share program shall be narrowly targeted to provide resources to alleviate immediate water shortages confronting Missouri agriculture. Due to the emergency nature of this program and the need for these water source and distribution practices to be implemented expeditiously, any rules, procedures and certifications generally applicable to soil and water cost share programs are hereby waived for this emergency cost-share program.

In order to be eligible under this emergency cost-share program, the following criteria must be satisfied:

1. The landowner applicant must be engaged in livestock or crop production and experiencing a water shortage caused directly by the current drought conditions;
2. The water shortage being experienced by the landowner applicant is severely impacting the well-being of livestock or crop production;
3. The proposed water source development or water distribution practice will produce an immediate material benefit to the well-being of the livestock or crop production; and
4. The proposed water source development or water distribution practice will not adversely affect a public water supply.

All applications under this emergency cost-share program by eligible landowners engaged in livestock or crop production must be submitted within fourteen days of issuance of this Order. Applications may be submitted either to the local soil and water district or to the State. Applications received by the State shall be immediately forwarded to the appropriate local soil and water district. The local soil and water district shall promptly notify the State when a completed application is received and upon taking final action on the application. The local soil and water district shall have seventy-two hours, including weekends, to approve or deny a completed application.

I further order the establishment of the Agriculture Water Resource Technical Review Team. The Directors of the Department of Agriculture and the Department of Natural Resources are directed to immediately assign adequate staff with agricultural and water resource experience to the Agriculture Water Resource Technical Review Team. The Agriculture Water Resource Technical Review Team shall assist in the expedited processing of applications and implementation of this emergency cost share program. In addition, any completed application not acted upon by a local soil and water district within seventy-two hours of receipt shall be immediately forwarded to the Agriculture Water Resource Technical Review Team which shall approve or deny the application within seventy-two hours.

All projects approved under this emergency cost-share program shall be completed within sixty days of issuance of this Order. The cost-share rate shall be ninety percent (90%) of the costs of eligible practices under this emergency cost-share program. The maximum cost-share award under this program is \$20,000.

This Order shall terminate on October 1, 2012, unless extended in whole or in part.

Dealing with Drought Seminar August 6th in Doniphan

The severe drought is continuing throughout Missouri and the United States with no end in sight. With pastures dried up and hay in short supply it is a challenge to plan for the future. The Ripley County Extension Council is sponsoring a seminar on August 6, titled Dealing with Drought. Speakers include Rick Hill from the Farm Service Agency, Don Foerster from the Missouri Department of Conservation, Melissa Welch and Sam James from the Natural Resource Conservation District, Michael Thornton and Rachel Griffin from the Soil and Water Conservation District and Kendra Graham, Livestock Specialist with the University of Missouri Extension. Topics will include federal and state cost-share opportunities, USDA assistance update and suggestions on how to manage livestock and feed resources.

The dealing with drought seminar will begin at 6 p.m. located at the 4-H building on the Ripley County fairgrounds in Doniphan. Cost for the program will be \$5 per person and we ask that you please pre-register by August 3, with the Ripley County Extension office located on the 3rd floor of the Ripley County courthouse by calling (573) 996-2921 or e-mail ripleyco@missouri.edu. All organizations are equal opportunity/ADA institutions.

Rice Irrigation Day 2012

Thursday, August 7, 2012

This field day, sponsored by Valley Irrigation, will focus on pivot irrigation. Registration begins at 8 AM with topics starting at 8:30 AM. Lunch is provided.

Topics include: History of Pivot-Irrigated Rice, Pivot verses Flood Irrigated Rice, Pivot-Irrigated Rice Myths, Machine Requirements, Weed Control, Irrigation Scheduling and Fertility Management.

RSVP at <http://agfax.com/2012/06/29/missouri-rice-field-day-neelyville-aug-7> by July 30.

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If you are interested in receiving this publication via e-mail or being removed from the email list please send a request to denklers@missouri.edu.

Future Meetings & Events -

Midwest Boar Stud Managers Conference: August 9-10, 2012 in St. Louis, MO.
 For more information go to: <http://bsmc.missouri.edu/>

Missouri State Fair: August 9-19, 2012 in Sedalia, MO

Missouri Rice Field Day: Thursday, August 23 at the Missouri Rice Research Farm near Glennonville, MO. To register call Sam Atwell at 748-5531.

Arkansas Nutrition Conference: September 4-6, 2012. at the John Q. Hammons Convention Center in Rogers, AR. For details go to www.thepoultryfederation.com

Missouri Livestock Symposium: December 7-8, 2012 in Kirksville, MO Call (660) 665-9866 or (660) 341-6625 or go to <http://missourilivestock.com>

Missouri Cattlemen's Association Annual Convention and Trade Show:
 December 11-13, 2012 at the Holiday Inn Executive Center in Columbia, MO

For information on commodities and markets visit - <http://extension.missouri.edu/seregion/fmmkt.htm>