



Penn State Cooperative Extension Capitol Region Dairy Team

SILO GASES
Tim Beck

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Drought-stressed crops pose greater risks to animals and their caretakers. One of the additional risk factors of greater importance in a dry year is the possibility of poisonous silo gases forming during the fermentation process. The high nitrate accumulation in the plant causes increased risk to the animal and can be a deadly threat to humans.

Plants wilted by drought or crops ensiled after a drought-breaking rain often have high nitrate levels in the plant stalk. Heavily fertilized fields may have high levels of residual nitrogen that wasn't absorbed and utilized to grow the plant. Following a heavy rain, moisture-starved plants rapidly absorb this nitrogen, and it takes time for plants to metabolize these nitrates into useful plant nutrients. Because this often happens late in the season when harvest will soon occur, producers can unknowingly harvest crops with high nitrates.

Two important recommendations are to avoid harvesting silage crops until several days of sunshine have followed a drought-breaking rain. This gives the plant time to convert the nitrates to useful plant nutrients and lowers the risk for both man and animal. Producers can reduce nitrates by cutting corn plants higher than normal because most of the nitrates concentrate in the lower portion of the stalk. When in doubt as to the risk of high nitrates, have plant samples analyzed for nitrates prior to harvest and adjust management practices appropriately.

Nitrogen dioxide gas is the major toxic material of concern to humans when ensiling crops. The plant respiration and bacterial fermentation that occurs may convert nitrates and nitrites into the yellowish brown gas sometimes observed around the base of silos. Inhaling these gases will burn the lungs and may cause death in only a few minutes.

The greatest danger to humans occurs in the first few days after ensiling, but gases may be formed for two to three weeks or more after ensiling. Be alert for bleach-like odors and/or yellowish fumes around the silo. Avoid spending time around silos for at least three weeks after filling until fermentation is nearly completed and exercise caution when opening silos for the first time. Always work with someone else in clear view so if a rescue becomes necessary you can receive assistance.

Run the forage blower for 15 to 20 minutes before unloading silage to allow any accumulated gases to ventilate from inside the silo. Be especially careful around silo feed rooms. Since this is a heavy gas, fumes often accumulate near the bottom of the silo and unventilated silo rooms can be dangerous places that build up the toxic fumes. Open windows and use fans to ventilate these rooms especially during the initial three-week high-risk period. Tightly seal silo room doors to prevent contamination of the barn.

If circumstances require the producer to enter a silo within 10 days after filling, then a self-contained breathing apparatus is es-



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ential. Under such conditions, working with a partner who can maintain visible contact at all times is a must.

Always remember the risk of fatal silo gas poisoning when silage harvest approaches. Keep alert for possible silo gas accumulation and take precautions to ventilate silo rooms, run the blower, and work in pairs when opening silos.

Silo gas poisoning is just one of the added challenges producers face when dealing with drought-stressed forages. For additional information on these and other topics, request a copy of DAS 99-5 "Drought-Related Issues In Dairy Cattle Nutrition," from your local extension office, or download a copy from the Web at <http://www3.das.psu.edu/dcn/catforg/DAS/index.html>. For additional information on this or

Sullivan Celebrates 150 Years Of County Fairs

DAVE LEFEVER
Lancaster Farming Staff

FORKSVILLE (Sullivan Co.) — The 150th Sullivan County Fair was conducted here Aug. 29 to Sept. 3 along the waters of Loyalsock Creek, about a mile from World's End State Park.

About 10,000 people annually pay to attend the fair to take in livestock shows and various other events including pony pulls and live musical entertainment, according to fair secretary and historian Jody Lambert.

Original fairgoers in the mid 1800s attended the festivities by oxen and wagon, Lambert said. The first dairy shows here mainly featured the Milking Shorthorn breed.

The long slate of happenings during this year's fair included a more modern dairy show Aug. 30 that included six breeds of dairy animals.

Out of a group of Ayrshire,



Some of the buildings on the Sullivan Co. Fairgrounds near Forksville are over 100 years old.

Brown Swiss, Dutch Belted, Holstein, Jersey, and Jersey/Holstein crossbred champs, Judge Kenny Young named a 3-year-old Holstein owned by Dan Lambert as supreme champion.

Dan is one of five children of Jody Lambert and her husband

William Lambert. The family maintains a herd of about 350 Holsteins on their Dushore farm.

Dairy shows exhibitors came from Bradford and Lycoming counties, as well as Sullivan.

Results of the show are shown below:



Champion line-up at the Sullivan County Fair Dairy Show, from left, Victoria Woodhead and Aubrey Frazier, dairy maids; Evan Heess, Jersey/Holstein crossbred; Hanna Long, Dutch Belted; Ashley Broschart, Ayrshire; Brian Katzmaier, Brown Swiss; Kelly Hoyt, Jersey; Ben Lambert (for brother Dan), Holstein; Elizabeth Reibson, alternate dairy princess; and Anna Reibson, dairy maid.

JUNIOR DAIRY SHOW

AYRSHIRE
Fall senior calf: 1. Ashley Broschart.
Winter intermediate yearling: 1. Ashley Broschart.

GRAND CHAMPION
Ashley Broschart
RESERVE GRAND CHAMPION
Ashley Broschart
DUTCH BELT

Winter intermediate calf: 1. Hanna Long.
GRAND CHAMPION
Hanna Long
HOLSTEIN

Pre-junior: Dan Lambert.
Spring junior calf: 1. Kelly Hoyt. 2. Taylor Hart. 3. Benjamin Lambert.

Winter intermediate calf: 1. Tara Hoyt. 2. Thomas Lambert.
Spring junior yearling: 1. Kelly Hoyt.
Junior champion: Kelly Hoyt.

Junior 3-year-old: 1. Benjamin Lambert.
Senior 3-year-old: 1. Dan Lambert.
Reserve junior champion: Kelly Hoyt.
Senior champion: Dan Lambert.

Reserve senior champion: Ben Lambert.
GRAND CHAMPION
Dan Lambert
RESERVE GRAND CHAMPION
Ben Lambert
JERSEY

Spring junior calf: 1. Tara Hoyt. 2. Emily Long. 3. Kelly Hoyt.
Winter intermediate calf: 1. Hanna Long.

Spring junior yearling: Emily Long.
Fall senior yearling: 1. Tara Hoyt.
Junior 2-year-old: 1. Kelly Hoyt.
Junior champion: Tara Hoyt.

Reserve junior champion: Emily Long.
Senior champion: Kelly Hoyt.
GRAND CHAMPION
Kelly Hoyt
RESERVE GRAND CHAMPION
Tara Hoyt
SHOWMANSHIP

8-11-year-old: 1. Hanna Long. 2. Tom Lambert. 3. Taylor Hart.
12-14-year-old: 1. Emily Long. 2. Ben Lambert. 3. Ashley Broschart.

15 and over: 1. Dan Lambert.
DAIRY SHOW
BROWN SWISS

Pre-junior spring calf: 1. Brian Katzmaier.
Junior spring calf: 1. Robert Miller. 2. Nathan Katzmaier. 3. Brian Katzmaier.

Intermediate winter heifer calf: 1. Robert Miller. 2. Robert Miller.
Senior fall heifer calf: 1. Robert Miller.
Summer yearling: 1. Brian Katzmaier.

Junior get of sire: 1. Robert Miller.
Best three females: 1. Brian Katzmaier.

GRAND CHAMPION
Barbara Warburton
RESERVE GRAND CHAMPION
Barbara Warburton
SUPREME CHAMPION
Dan Lambert

Produce of dam: 1. Brian Katzmaier.
Junior champion: Brian Katzmaier.
Reserve junior champion: Robert Miller.

GRAND CHAMPION
Brian Katzmaier
RESERVE GRAND CHAMPION
Robert Miller
HOLSTEIN

Pre-junior calf: 1. Benjamin Lambert. 2. Barbara Warburton.
Junior spring heifer calf: 1. Barbara Warburton. 2. Barbara Warburton. 3. Brian Katzmaier.

Best three females: 1. Barbara Warburton.
Junior champion: Barbara Warburton.
Reserve junior champion: Barbara Warburton.

GRAND CHAMPION
Barbara Warburton
RESERVE GRAND CHAMPION
Barbara Warburton
JERSEY

Pre-junior heifer calf: 1. Barbara Warburton.
Junior spring heifer calf: 1. Barbara Warburton. 2. Barbara Warburton. 3. Barbara Warburton.

Intermediate winter heifer calf: 1. Barbara Warburton.
Junior get of sire: 1. Barbara Warburton. 2. Barbara Warburton. 3. Barbara Warburton.

Junior champion: Barbara Warburton.
Reserve junior champion: Barbara Warburton.

GRAND CHAMPION
Barbara Warburton
RESERVE GRAND CHAMPION
Barbara Warburton
JERSEY/HOLSTEIN CROSSBRED

Pre-junior heifer calf: 1. Barbara Warburton.
Intermediate winter heifer calf: 1. Barbara Warburton.

Senior fall winter heifer calf: 1. Barbara Warburton.
Junior get of sire: 1. Barbara Warburton.
Best three females: 1. Barbara Warburton.

Junior champion: Barbara Warburton.
Reserve junior champion: Barbara Warburton.

GRAND CHAMPION
Barbara Warburton
RESERVE GRAND CHAMPION
Barbara Warburton
SUPREME CHAMPION
Dan Lambert

Corn Silage Whole-Plant Dry Down Rates*

Paul Craig, Extension Agronomy Agent

Droughted corn is rapidly losing green coloration in its leaves. Leaf blights are severely impacting late development. Corn is at 1/2 milk line in the droughted area, and a little more advanced in the well-eared section. Very dry soil moisture conditions continue.

Late planted corn is just beginning to dent. Plants remain very green in coloration. This planting does not have very much height.

Moisture Test Date	Kernel Milk Line	Whole Plant Moist. %	Sugar as % of DM	Plant Firing % ^b	Predicted Days to Harvest ^c	
					Bunker Silo ^d	Tower Silo ^e
110-day corn planted May 1. Well eared and good ear fill:						
Aug 4	None	73.5		33	5	13
Aug 14	1/4	73.3		33	5	13
Aug 21	1/3	69.5	3.9	33	-1	7
Aug 28	1/2	63.8		40	-10	-2
Sep 4	2/3	64.5		50	-8	0
Same hybrid and field, but droughty, small ears, 75% ear fill:						
Aug 4	None	73.5		50	5	13
Aug 14	1/4	72.8		50	4	12
Aug 21	1/4	69.3	4.3	50	-1	7
Aug 28	1/3	65.0		60	-8	0
Sep 4	1/2	59.5		50	-16	-8
Same hybrid planted May 25. Well eared and good ear fill:						
Aug 28	None	76		0	9	17
Sep 4	None	76		0	9	17

Footnotes:

- a-Conducted at the Penn State Field Research Farm at Landisville.
- b-Percent of stalk fired from the ground upward.
- c-Based on 0.65 drop in % moisture from last test date.
- d-Based on a target moisture of 70% for bunker silos at harvest time.
- e-Based on a target moisture of 65% for tower silos at harvest time.