

Nitrates In Drought-Damaged Silage Can Harm Cows

NEWARK, DE. — Dairy farmers can make the most out of this year's drought-stricken corn crop by harvesting it as silage if they take certain precautions. Filling silos with drought-stressed corn can be a dangerous and difficult practice for two reasons, says University of Delaware Extension dairy specialist Dr. George Haenlein: first, because of the potentially high nitrate content of the silage; and second, because of the difficulty of packing stalks that are too dry.

Packing dry stalks is no problem with a trench silo. However, in an upright silo, it may be difficult or impossible to remove air pockets

created by pieces of stiff stalk if the corn isn't green enough. In such cases, farmers may need to (1) add a preservative to prevent development of mold in the presence of air, or (2) add weight in the form of water during filling and place a water-filled plastic bag at the top of the silo afterwards to compress the silage. But Haenlein says the weight of the bag isn't likely to affect air pockets in the lower part of the silo, so the danger of mold remains.

The potentially high nitrate content of drought-damaged corn is another problem for dairy producers. Nitrates interfere with the oxygen-absorbing capacity of the

cows' blood. This may lead to secondary problems, particularly interfering with normal reproductive processes, resulting in poor ovulation and even abortion.

Haenlein says at low levels nitrates can be tolerated or adjusted, but at medium and high levels they become increasingly dangerous. In extreme cases of nitrate poisoning, cattle may die.

For these reasons, he cautions farmers using drought-stressed corn for silage to be alert for the presence of brown nitrous oxide gas seeping out of the silo and flowing down—the gas is heavier than air.

If a producer must feed high nitrate silage, the specialist says it must be diluted with other, safer feeds, such as hay and grain.

He suggests dairy farmers follow these guidelines when using drought-stressed corn in order to avoid nitrate problems in silage:

* If there is a rain, wait three to five days before chopping drought-stressed corn silage because nitrate levels are high in the plant directly after rain.

* Consider raising the cutterbar on the chopper 12 inches up the stalk. Nitrates are more concentrated in the lower part of the plant, so by doing this you can leave more nitrates in the field.

* Don't feed freshly chopped corn silage to cattle.

* Wait at least 30 days before feeding silage from the silo. The fermentation process will help dissipate the nitrates originally in the silage.

* Before feeding, have a sample of the silage analyzed QUANTITATIVELY for nitrate content. Remember, testing is better than guessing.

The ideal moisture content for making silage is 65 percent to 70 percent. Normally this occurs about the time the lower half of the leaves are browning and the tips of the kernels in the center of the ear have a black layer.

If drought-stressed corn has no ears, more than half of the leaves on the plant may be "fired." As long as the upper leaves are still green, Haenlein says the plant will probably respond to rainfall by recovering a normal moisture content of 70 percent to 75 percent. He suggests farmers apply the following squeeze test to get a general idea of silage moisture in the field.

Squeeze a handful of freshly chopped forage into a ball for 20 to 30 seconds. Quickly release your grip and watch what happens to the ball of forage. If the ball holds its shape and free juice is present, moisture content is probably more than 75 percent. If the ball holds its shape but very little free juice is present, estimate moisture content at 70 percent to 75 percent. If the ball falls apart slowly and there is no free juice, moisture is between 60 percent and 70 percent.

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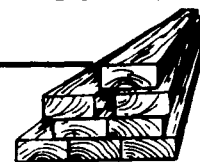
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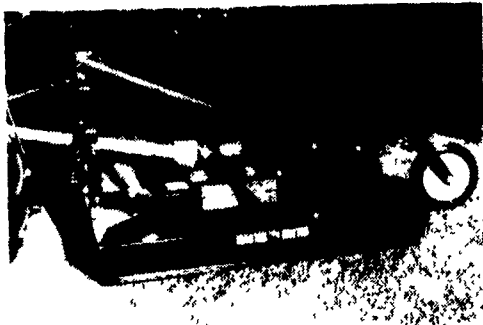


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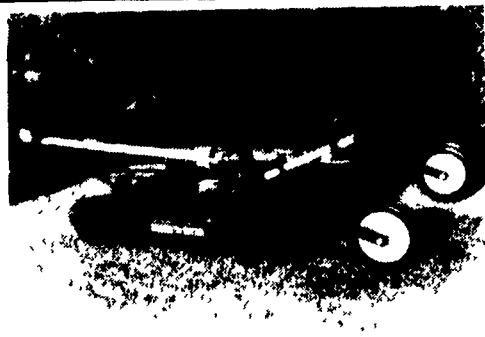
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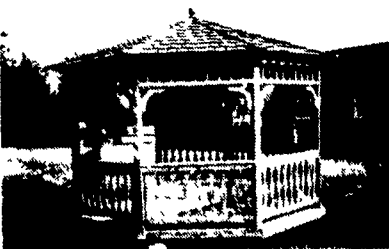
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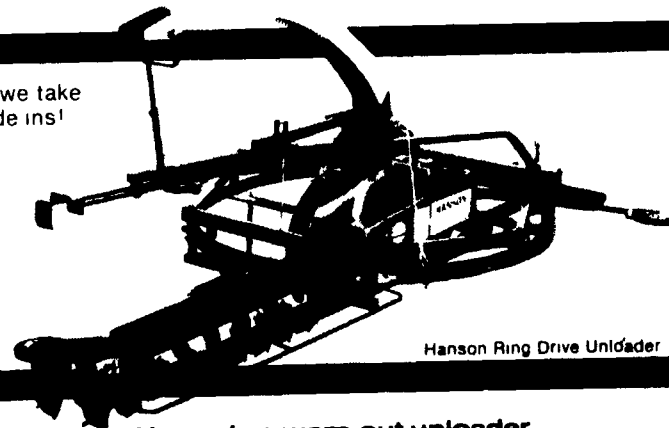
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