

## Silage acidity affects dairy feed intake

PISCATAWAY, N.J. — Cattle can sometimes be finicky at feeding time, and one reason may be the acidity of their diets. Researchers at the University of Maryland have found that animals eat better when their corn silage rations are slightly acidic — between pH 5 and 6. At pH levels above and below this range, feed intake is reduced, the researchers say.

The study also indicates that adding sodium bicarbonate to silage at feeding time improves feed intake and cattle performance.

Randy Shaver, doctoral candidate at the University of Wisconsin, conducted the research while a graduate student at

Maryland. He compared consumption of 330-lb. Holstein steers fed one of four rations: 1) fresh whole plant corn, 2) fresh whole plant corn acidified with hydrochloric acid to a pH equalling that of corn silage, 3) corn silage, and 4) corn silage with approximately 5 percent sodium bicarbonate (dry matter basis) added at feeding time to increase pH to a level equalling that of fresh whole plant corn.

Feed intake appeared to be linked to pH of the feedstuffs. The highest consumption rate was with corn silage that had been supplemented with sodium bicarb. Consumption was lowest with fresh whole corn which had been acidified (see following table).

"This research shows that corn silage pH is a factor affecting intake, and that sodium bicarbonate added to the ration can be beneficial in keeping silage pH within an optimum range of 5 or 6," says Shaver. "Where silage acidity is extremely high, however, it may not be economical to add as much bicarb as would be needed to achieve the optimum pH level. Producers will have to analyze their own situations to see if it pays to reduce silage acidity by adding bicarb at feeding time."

The study is one of several planned at the University of Maryland to further define the role of sodium bicarbonate in cattle feeding, according to Richard Erdman, assistant professor of animal science who participated in the research.

"Many studies have shown a response to sodium bicarbonate, and we have assumed that buffering in the rumen has been the reason for the response," says Erdman. "We're interested in the possibility that bicarb may also improve palatability by keeping pH of the ration at an optimum level."

Effect of Silage pH on Consumption (Holstein Steers)

Ration	pH	Dry Matter Intake (Lbs/Day)
Fresh whole plant corn	5.20	8.95
Fresh whole plant corn acidified with HCL	3.66	8.31
Corn silage	3.86	8.60
Corn silage supplemented with sodium bicarbonate	5.94	10.10

In a second study, the researchers compared intake of 640-lb. Holstein heifers fed corn silage to which had been added either 2, 4 or 6 percent sodium bicarbonate, on a dry matter basis. A control group received silage which had no

bicarb added.

Again, consumption improved as pH approached neutral. However, at the highest level of bicarb, pH of the silage was slightly alkaline, and intake was reduced (see following table).

Effect of Silage pH on Consumption (Holstein Heifers)

Ration	pH	Dry Matter Intake (Lbs/Day)
Control (no bicarb)	3.72	14.74
2% sodium bicarbonate	4.46	17.16
4% sodium bicarbonate	5.62	17.82
6% sodium bicarbonate	8.05	13.64

## DVC wins flower award

DOYLESTOWN — Delaware Valley College's display at the Philadelphia Flower Show has been named the 1984 winner of the Bulkley Medal.

"We're delighted with the award," said John Martin, Chairman of the College's Ornamental Horticulture Department. "It really is a great honor. We haven't won the Bulkley Medal in a number of years. The award is national in scope, so it goes beyond being a local honor."

The Bulkley Medal is awarded to an exhibit of special merit and/or educational value. It is sponsored by the Garden Club of America.


The College's theme at this year's show is "The Great American Mail-Order Garden". It lets people see for themselves what over 100 mail-order vegetables and

flowers look like and how they stack up against the photos that appear on seed packets and in catalogs.

As part of the project, students at Delaware Valley College compiled a mail-order source list which describes what can be obtained through the mail. Current samples from about 500 companies dealing in mail-order seeds are also part of the display long with a variety of gardening gadgets and tools.

"I was very pleased with some of the comments I heard from the judges who looked at our exhibit," commented Martin. "For the most part they said that our exhibit was attractive as well as educational."

The Philadelphia Flower Show is being held at the Civic Center through Sunday.



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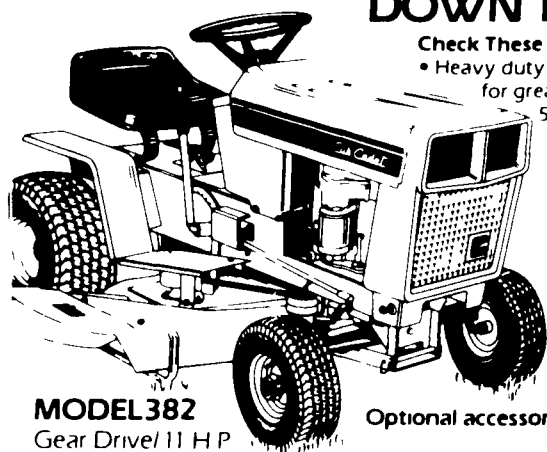
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