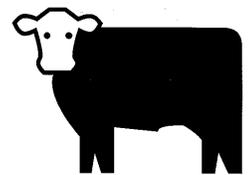


BABY DOLL NUTRITION NEWS

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Whole Corn is Best & Most Cost-Effective! University Research Confirms What BABY DOLL Growers Know

BABY CALVES

Recently published research from Penn State University (Journal of Dairy Science, 87:3439-3450, 2004) shows what growers using the BABY DOLL dairy beef program have known for years - calves simply perform better with whole shelled corn than with rolled or steam-flaked corn. The researchers, Drs. K.E. Lesmeister and A.J. Heinrichs fed Holstein calves one of four types of corn: whole shelled, roasted-rolled, dry-rolled, or steam-flaked. The study included both heifer and bull calves and started when calves were approximately 2 days old until calves were 6 weeks old. Calves were abruptly weaned at 28 days of age.

Measurements of rumen pH, an indication of the amount of acid or base present, showed calves fed whole corn had significantly higher pH than calves fed processed corn. This indicates less acid present in the rumen and is good news for whole corn feeders because rumen acidosis is a serious feedlot problem that reduces cattle performance and robs cattle feeders of profits.

WEANING TO 420 LB

Previous research at the University of Minnesota (Journal of Dairy Science, 1991, 74:1765-1771) compared whole corn to rolled corn for calves from weaning (day 39) to 420 lb body weight for approximately 127 days total. The researchers, Dr. H Chester-Jones, Mr. D.M. Ziegler, and Dr. J.C. Meiske fed Holstein steers one of three diets: rolled corn from weaning to 420 lb, whole corn from weaning to 420 lb, or rolled corn for 56 days then switched to whole corn for the remaining 71 days. For each treatment, corn was mixed with

1. Baby Calf Performance	Dry-rolled	Roasted-rolled	Steam-flaked	Whole corn
Starting weight, lb	92.1	95.0	93.5	91.9
Final weight, lb	135.1	138.5	133.0	137.5
Total Gain	43.0	43.5	39.5	45.6
Total Starter Intake, lb/hd	85.5 ^a	78.4 ^{bc}	75.8 ^c	81.9 ^{ab}
Feed/gain	2.03	2.03	2.14	1.88
Cost of gain, \$/100 lb gain	22.33	22.33	23.54	18.80
Rumen pH, week 6	5.41 ^b	5.43 ^b	5.44 ^b	5.66 ^a

Although not statistically different, total gain in the study favored calves fed whole corn with calves fed steam-flaked corn gaining the least. Feed intake was statistically different with calves fed dry-rolled corn eating the most feed and calves fed steam-flaked corn eating the least amount of feed. Calves fed whole corn consumed more corn than calves fed steam-flaked corn. Feed efficiency (lb feed per lb gain) was best for calves fed whole corn and poorest for calves fed steam-flaked corn. Cost of gain, assuming \$200/ton for whole-corn starter feed and \$220/ton for rolled or flaked-corn starter feed, would greatly favor whole corn because calves had better feed efficiency and processed corn is more expensive than whole shelled corn.

protein/vitamin/mineral supplement pellets in a 3:1 blend (by weight) before feeding.

Calves fed whole corn for the entire trial had the best performance, followed by calves fed rolled corn then switched to whole corn (see table 2 on next page). Calves fed rolled corn for the entire trial had the poorest performance. Feeding whole shelled corn resulted in faster gain, more efficient gain, and a lower cost of gain. In addition to better feed efficiency, feed made with whole shelled corn has a lower cost because whole shelled corn does not need to be processed.

From the code of the old west:

Workin' behind a plow, all you see is a mule's hind end. Workin' from the back of a horse, you can see across the country as far as your eye is good.

2. Weaning to 420 lb	Rolled Corn	Rolled-Corn, then Whole Corn	Whole Corn
Starting weight, lb	110.9	110.9	111.1
Final weight, lb	405.6	421.5	425.5
Total Gain	294.7	310.6	314.4
Total feed Intake, lb/hd	915.5	965.9	954.7
Feed/gain	3.11	3.14	3.05
Cost of gain, \$/100 lb gain	22.65	21.62	20.20

The researchers had the following conclusions:

1. Dry, whole shelled corn can be used effectively in high concentrate rations for growing-finishing cattle when compared to crimped corn.

2. When dry whole shelled corn is fed, gains and feed conversions will be greater when fed with no more than 10 lb of corn silage per head per day. Feeding 5 to 10 lb of

silage per head per day does not result in any significant benefit compared to feeding no corn silage.

Once again, cattle gained weight faster and more efficiently with whole shelled corn compared to crimped corn. Cost of gain is lower with whole shelled corn than with crimped corn.

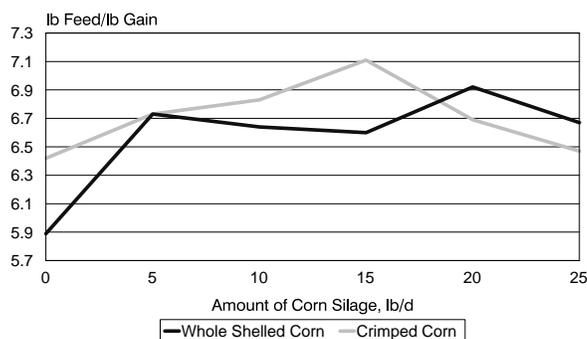
Feedlot Cattle

What type of corn is best for bigger cattle in the feedlot? Here, the answer depends on the amount of roughage in the diet. For many years a battle raged concerning which type of corn was best for cattle. Drs. Vance, Preston, Klosterman, and Cahill conducted a study at The Ohio Agricultural Research and Development Center which is part of The Ohio State University. In the study, they fed two forms of corn: whole shelled or crimped. For pens of cattle fed each form of corn, they fed 0, 5, 10, 15, 20, or 25 lb of corn silage per day on an as-fed basis. Cattle averaged 544 lb at the beginning of the study and were on feed for 176-183 days.

Average daily gain and feed efficiency of cattle are shown in the two graphs, above. The best form of corn

Type of Corn vs Corn Silage Amount

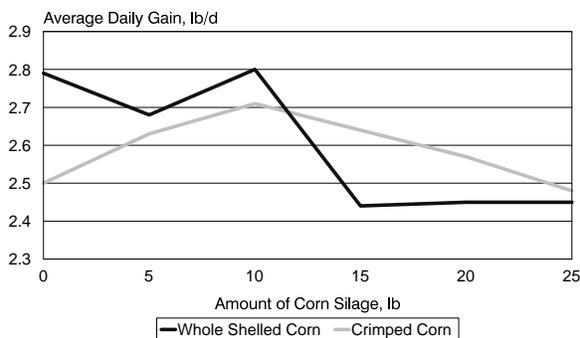
Feedlot Cattle Feed/Gain



Vance et al, The Ohio State University

Type of Corn vs Corn Silage Amount

Feedlot Cattle Average Daily Gain



Vance et al, The Ohio State University

depends on the amount of roughage being fed. With low amounts of roughage, feedlot performance is best with whole shelled corn. When higher amounts of roughage are fed, average daily gain is better with crimped corn and with very high amounts of roughage, feed efficiency is slightly better with crimped corn compared to whole shelled corn. But, the highest rate of gain and the most efficient feed utilization is with whole shelled corn and low amounts of roughage.

The bottom line: baby calves, growing calves, feedlot finishing cattle perform better and at a lower cost when whole shelled corn is fed. BABY DOLL growers have know it for years!

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