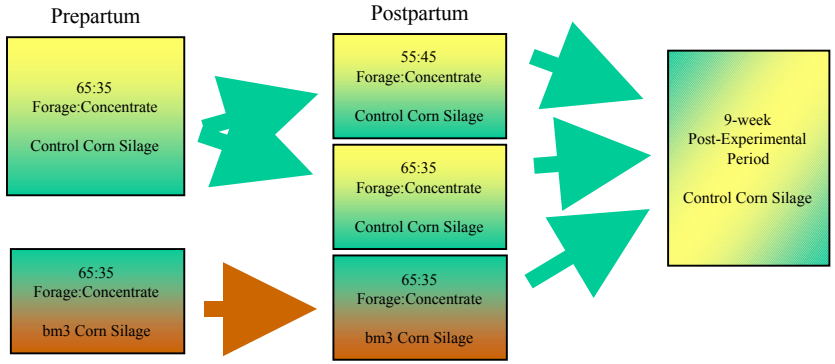
# BROWN MIDRIB CORN SILAGE FOR TRANSITION COWS

## Background:

Brown midrib 3 (**bm3**) is a natural mutant corn that leads to reduced lignin content of corn silage. The vegetative portion of bm3 corn silage is more digestible than conventional corn silage. Commercial varieties of bm3 corn silage are available, and limited amounts are used by dairy producers.

## Procedure:

The objective of this study was to evaluate bm3 corn silage for cows during the transition time of 3 weeks pre-calving to 4 weeks post-calving. A total of 112 cows were divided into three balanced groups. Two of the three groups were combined for one of two prepartum treatments. Cows were placed in treatment groups 3-4 weeks before their projected calving date. The two prepartum diets contained 65% forage and 35% concentrate, with corn silage providing 60% and alfalfa silage 40% of the forage dry matter. After calving the three groups, two of which were fed control corn silage prepartum, were assigned to three postpartum diets for 4 weeks. The postpartum control diet (control 55 F) contained 55% forage and 45% concentrate, with 58% of the forage as corn silage and the balance as alfalfa. The second and third postpartum diets contained 65% forage, 58% of which was corn silage and 42% alfalfa. One of these was the control corn silage (control 65 F). Cows fed control corn silage prepartum were fed control corn silage postpartum. Following the first 4-5 weeks of lactation, cows were placed on a common diet containing control corn silage for a 9 week post experimental period.

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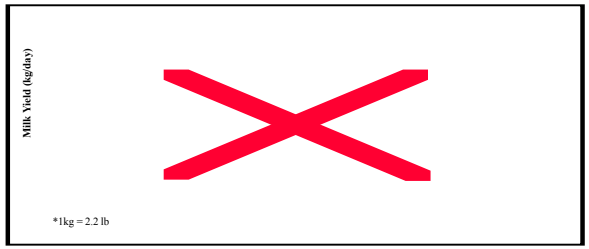
## Results:

Milk production and 3.5% fat corrected milk production for the control 55 F, control 65 F, and bm3 65 F treatments were:67.8, 78.5; 68.0, 80.7; 72.2 and 86.5 lb/day during the 4 week postpartum period. Cows previously assigned to the bm3 treatment continued to produce about 4-6 lb/day more than cows previously assigned to the control corn silage, indicating a positive carry-over effect from feeding bm3 earlier in lactation. The figure below summarizes the treatment effects on milk production:




## Economics of using bm3 corn silage:

Using modern bm3 hybrids, the average milk production response in 10 studies comparing conventional corn silage with bm3 corn silage was an increase of 3.7 lb milk and a decrease in milk fat test of .06 percentage points.

If one assumes milk at $12.50/cwt., and the cost of producing control corn silage at $50/ton of dry matter, and the cost of producing bm3 at $68/ton of dry matter (due to higher seed cost and reduced yield), then it will require an increase in milk production of about 2 lbs of milk per cow per day to pay for the higher cost of bm3 corn silage. The average milk production response in experiments is 3.7 lbs of milk per day.

## Take home message:

**bm3 represents good profit potential for dairy producers!**