# THE EFFECT OF YEAST CULTURE ON PRODUCTION PERFORMANCE IN DAIRY CATTLE

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**Introduction:** Yeast and yeast products have been used in ruminant nutrition to manipulate rumen fermentation and, therefore, production response. Many artificial rumen fermentation studies have shown influence of yeast products on composition and metabolic activity of the intestinal microflora which could result in higher production response.

**Objective:** To evaluate the effects of supplementing yeast culture (YC) on production performance in dairy cattle.

**Materials and Methods:** One hundred multiparous cows were balanced to one of four treatment groups (2 pens/trt) according to previous lactation 305 d ME. Cows entered the groups at calving and remained through 14 weeks postpartum. Groups were randomly assigned throughout the barn. Pens were identical in layout and each pen contained an exit alley so that it would not inter-fere with an adjacent pen when animals were moved for milking. The two treatments were: Control; no YC and YC; same as Control with YC (A-MAX™ 28 g/d). The model that was utilized was as follows: $\mu$ = mean + trt + period + pen (trt) + trt x period + residual.

**Results:** Mean group dry matter intake was similar across treatments. Milk yield variables were affected by treatment (P<.01). Cows supplemented with A-MAX produced more milk than Control cows. These same significant production differences were revealed for 3.5 FCM and ECM. Milk fat, SNF, or lactose percentages were not affected (P>.05) by treatment. Differences in fat, protein, and SNF yields were primarily reflective of milk yield (P<.01). There was no effect of treatment on lactose, MUN, or somatic cell count.

**Conclusion:** Cows supplemented with A-MAX produced more milk, FCM and ECM than non supplemented cows. Fat, protein, and SNF yields were higher for A-MAX-supplemented cows compared to Control.

## Results Tables:

| Table 1. Effect of Yeast Culture on Group DMI and Milk Yield | | | | |
|---|---|---|---|---|
| | Treatments | | | *P* |
| Item | Control | A-MAX™ | SEM | Trt |
| N (Pen 1+2)[1] | 47 | 48 | | |
| DMI, lb | 55.1 | 54.8 | | |
| Milk, lb | 89.3[b] | 92.3[a] | 0.8 | .01 |
| 3.5 FCM. lb[2] | 91.6[b] | 95.3[a] | 0.9 | .01 |
| ECM, lb[3] | 90.1[b] | 93.8[a] | 0.8 | .01 |

[1] Pen (trt) effects for all variables were non significant (P>.05)
[2] 3.5% FCM = .4324 (lb milk) + 16.218 (lb milk fat).
[3] Energy-corrected milk was calculated by the following equation: ECM = (kg milk x .327) + (kg milk fat x 12.95) + (kg protein x 7.2).

| Table 2. Effect of Yeast Culture on Milk Composition and Yield | | | | |
|---|---|---|---|---|
| | Treatments | | | *P* |
| Item | Control | A-MAX | SEM | Trt |
| Composition | | | | |
| Fat, % | 3.67 | 3.70 | .05 | NS |
| Protein, % | 2.91 | 2.93 | .02 | NS |
| Lactose, % | 4.67 | 4.68 | .02 | NS |
| SNF, % | 7.58 | 7.61 | .05 | NS |
| Component Yields | | | | |
| Fat, lb | 3.26[b] | 3.41[a] | .02 | .01 |
| Protein, lb | 2.58[b] | 2.68[a] | .04 | .01 |
| SNF, lb | 6.74[b] | 7.01[a] | .07 | .01 |
| Other | | | | |
| MUN | 11.1 | 11.4 | .15 | NS |
| SCC, x1000 | 241 | 258 | 21 | NS |