

Use of Levucell[®] Yeast in Barley Based Dairy Cow Diets

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Active dry yeast and yeast cultures based on *Saccharomyces cerevisiae* are widely used in commercial dairy production in North America to improve milk yield. Effectiveness of yeast products can be variable depending upon the type of diet and the yeast product formulation. Most commercial yeast strains available have been developed for use in corn based diets, such as those typically used in eastern Canada and the US. However, diets fed to dairy cows in western Canada are primarily barley based, and the potential benefits of supplementing these types of diets with yeast products has not been well documented.

The study was conducted at the University of Alberta's DRTC (Edmonton, AB). Forty lactating Holstein dairy cows were randomly assigned to one of two treatments: 1) Control diet (no yeast) and 2) Yeast supplemented diet. All cows were fed the control diet for 3 weeks followed by a 6-week period on their assigned diet. The control diet TMR consisted of 23% barley silage, 23% alfalfa silage, 6% alfalfa hay and 48% of a ground barley based concentrate (dry matter [DM] basis). For the treatment diet Levucell[®] SC-1077 (Lallemand Animal Nutrition, Milwaukee, WI) was added to the concentrate to provide 0.5 g Levucell[®]/head/day (10 billion CFUs/head/day). Body weight, dry matter intake (DMI), and milk yield and composition were measured.

There was no difference in final body weight, average daily gain, net energy output and efficiency of net energy output between treatments. Dry matter intake was similar for cows on both diets, while 3.5% fat corrected milk yield (FCM) was about 1 kg/d higher (not statistically significant, $P = 0.31$) for yeast-supplemented cows. This resulted in a slightly higher (5.8% increase) efficiency of milk production (kg FCM/kg intake) for yeast-supplemented cows.

Implications: Although milk yield was only numerically higher with yeast supplementation to a barley-based diet, the numerical increase in 3.5% FCM was economically important (+1.0 kg/d). This also resulted in an improvement in milk production efficiency which could lower cost of feeding.