

**Evaluation of the economic impact of Optigen® use in commercial dairy herd diets with varying feed and milk prices.** J. F. Inostroza\*, V. E. Cabrera\*, R. D. Shaver\*, and J. M. Tricárico#. Department of Dairy Science, University of Wisconsin, Madison, WI, USA\*. Alltech Inc., Brookings, SD, USA#.

The objective of this study was to evaluate the impact of Optigen ® (blended, controlled-release urea) use in commercial dairy herd diets on feed cost and income over feed cost. Results from a field trial with 16 Wisconsin herds randomly assigned to treatment sequences of either Optigen® (OPT; 114 g/cow/d replacing an equivalent amount of supplemental CP to provide iso-nitrogenous TMR; TMR formulation space created by the use of OPT was filled with either corn grain or corn silage DM) to control (CON) or CON to OPT in a cross-over design with two 30-d feeding periods, showed that milk yield was 0.5 kg/d/cow greater ( $P < 0.01$ ) for OPT than for CON; data were analyzed using the mixed model procedure of SAS with period, sequence and treatment as fixed effects and herd as a random effect. An economic simulation analysis was performed using the OPT feeding rate and milk yield response from the field trial and monthly soybean meal-48 ( $\$0.373 \pm 0.054/\text{kg}$ ), dry corn ( $\$0.188 \pm 0.020/\text{kg}$ ), corn silage ( $\$0.059 \pm 0.005/\text{kg}$ ), and high-moisture corn ( $\$0.149 \pm 0.016/\text{kg}$ ) prices (as-fed basis) and milk prices ( $\$0.38 \pm 0.03/\text{kg}$ ) for January through December, 2008. The cost of OPT was set at  $\$1.63/\text{kg}$ . A total of 32 combinations of varying feed and milk prices were simulated. Results are provided in the Table 1. Under the conditions of the simulations performed in this study, OPT reduced feed cost only when corn silage was used to fill formulation space while milk income minus feed cost was increased by OPT for all scenarios. A decision tool spreadsheet was developed to allow for further economic simulation analyses with the ability to vary the milk yield response to OPT, the cost of OPT, and the CP and energy supplements evaluated.

**Table 1. Economic impact of Optigen® use in dairy herd diets.**

<b>CP Supplement Replaced by OPT</b>	<b>Ingredient Used to Fill Formulation Space</b>	<b>Feed Cost OPT - CON (\$/cow/day)</b>	<b>Milk Income OPT – CON (\$/cow/day)</b>	<b>Milk Income - Feed Cost (\$/cow/day)</b>
<b>SBM-48</b>	Dry Corn	0.047 ( $\pm 0.027$ )	0.192 ( $\pm 0.016$ )	0.145 ( $\pm 0.039$ )
<b>SBM-48</b>	Corn Silage	-0.020 ( $\pm 0.039$ )	0.192 ( $\pm 0.016$ )	0.212 ( $\pm 0.051$ )
<b>SBM-48</b>	HM Corn	0.042 ( $\pm 0.028$ )	0.192 ( $\pm 0.016$ )	0.150 ( $\pm 0.040$ )

**Key Words:** Controlled-release urea, economics, feed cost, dairy cows