

The Effect of Chromium Propionate on Lactating Jersey Cows in Early to Peak Lactation

Improving energy utilization with KemTRACE® brand Chromium Propionate may add benefit to production performance of lactating dairy cows. The objective of this field trial was to determine if KemTRACE® Chromium Propionate had an added benefit to dairy cows in early to peak lactation. The field trial was conducted at a dairy in the Central Valley region of California. The study shows that the lactating dairy cows had an improved energy status during the supplementation of KemTRACE® Chromium Propionate. The ability of KemTRACE® Chromium Propionate to increase insulin sensitivity and promote glucose uptake, allows for the lactating dairy cows to utilize their energy efficiently. With an increase in energy corrected milk by 6 lbs, the additional income based on the chromium propionate supplementation resulted in a benefit of \$0.98/h/day.

Keywords: Chromium, dairy cattle, energy corrected milk, glucose

Introduction

Chromium Propionate is a highly bioavailable chromium source, shown to improve insulin sensitivity and promote glucose uptake. Greater sensitivity of tissues to insulin likely increases clearance of glucose from the blood more efficiently, therefore partitioning energy more efficiently into body tissues. Improving the efficiency of energy utilization with KemTRACE® Chromium Propionate may have added benefit to production performance of lactating dairy cows. The objective of this field trial was to determine if KemTRACE® Chromium Propionate had an added benefit to dairy cows in early to peak lactation.

Materials and Methods

The field trial was conducted at a dairy in the Central Valley region of California. The animals were housed in free-stall barns where they were milked twice daily in rotary parlor. Approximately 500 cows in second or greater lactation in the high producing group (60-120 days in milk) were used in this study. All animals in the group were fed the same diet before and during the study. Chromium Propionate was supplemented to provide 8 mg of Cr/cow/d. Dry matter intake was provided by the feed manager, while fat corrected milk (FCM) and Energy Corrected Milk (ECM) for the herd was calculated according to the following equation (Shirley, 2006)¹.

- Fat corrected milk (FCM)
 - $\text{Milk} \times (0.4324 + 16.218 \times \text{fat } \%)$
- Energy corrected milk (ECM)
 - $(12.95 \times \text{lbs of fat}) + (7.2 \times \text{lbs of protein}) + (0.327 \times \text{lbs of milk})$

Results and Discussion

The purpose of this field demonstration was to determine if KemTRACE® Chromium Propionate had an added benefit to dairy cows in early to peak lactation. Supplementation of KemTRACE® Chromium Propionate had a positive impact on a dairy in the Central Valley region of California.

Average milk, energy corrected milk (ECM), and fat corrected milk (FCM) yields are shown in Table 1 for both groups. During this study dry matter intake was constant at 51 lbs/head/day for both groups. The ECM and FCM efficiency results for both groups are shown in Table 2.

A milk price of \$17.00/cwt along with the investment of KemTRACE® Chromium Propionate supplementation was used to calculate the economic benefit. With an increase in energy corrected milk by 6 lbs, the additional income based on the chromium propionate supplementation resulted in a benefit of \$0.98/h/day.

If the production environment experienced during this trial would stay constant, the improvement in energy corrected milk would lead to an additional yearly income of approximately \$150,000 for this dairy.

Table 1. Response of mature cows after treatment of Cr Prop

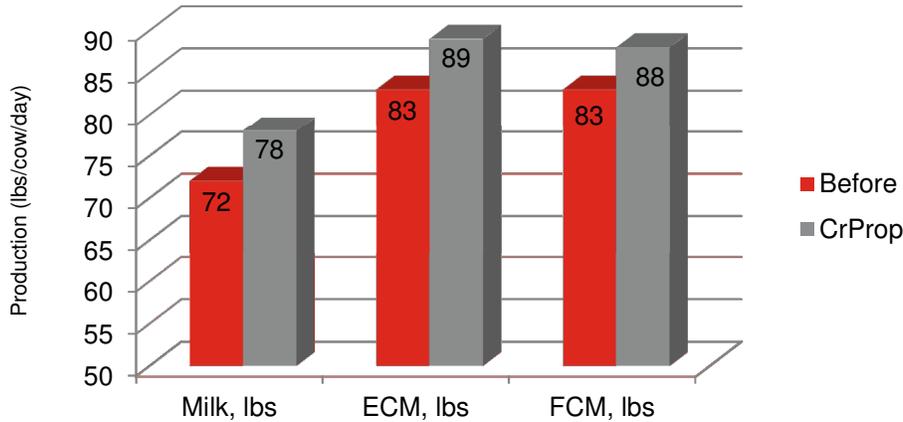
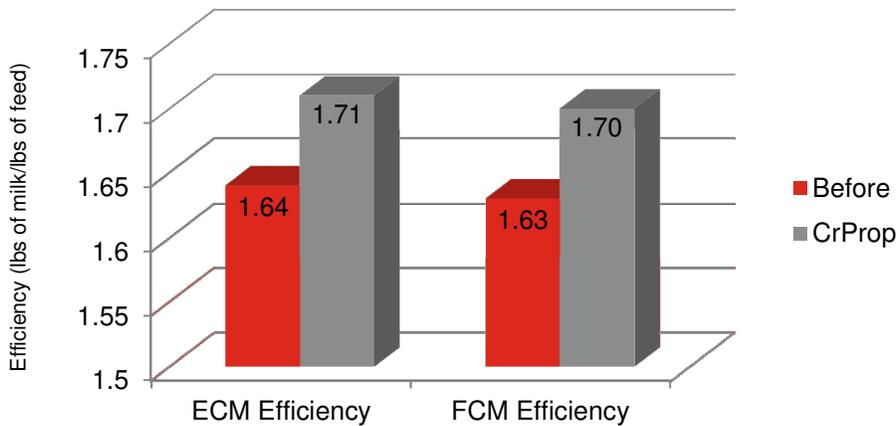


Table 2. Response of mature cows after treatment of Cr Prop



References

1. Shirley, J. E. 2006. Feed efficiency is an important management tool for dairy producers. In: Proceedings of the High Plains Dairy Conference. p. 63-67.
2. SD-11-00024