The teat is a principal point of entry for invading pathogens into the mammary gland and milk is an excellent medium for pathogen growth. Therefore, mammary epithelial integrity is of paramount importance to mammals. Feeding Zinpro Performance Minerals® has repeatedly been shown to decrease somatic cell count (an indicator of mammary inflammation) in both cows (Figure 1) and sows. These improvements in mammary health may be a result of increased teat keratin production, which protects the mammary gland from invading pathogens. Increased keratin production is also observed when Zinpro Performance Minerals are fed (data not shown).

Leakage of lactose from milk to plasma is indicative of tight junction deterioration and a lack of mammary epithelial integrity. Feeding zinc from ZINPRO® zinc methionine has been shown to decrease leakage of lactose from milk to plasma during times of heat stress (P = 0.11), indicating an improvement in epithelial integrity (Figure 2).

**CONCLUSIONS**

Feeding Zinpro Performance Minerals®
- Consistently decreases somatic cell count
- Increases teat keratin production in the mammary gland
- Decreases leakage of lactose from milk to plasma

ZINPRO® zinc methionine complex; Treatments were (DM basis): ZnCl, 75 ppm Zn from Zn tetrabasic chloride; Zinpro, 40 ppm Zn from ZINPRO® + 35 ppm Zn from Zn tetrabasic chloride. All diets included 81 ppm Mn from MnSO4, 6 ppm Mn from MANPRO® manganese methionine complex, 6 ppm Cu from CuSO4, 6 ppm Cu from CuPLEX® copper lysine complex, 0.6 ppm Co from COPRO® cobalt glucoheptonate.
- During the baseline phase (baseline period was 84 d), all cows were cooled (fans and misters over the freestall and feeding areas, average temperature-humidity index = 73), while during the environmental challenge phase, half of the cows on each dietary treatment were not cooled (average temperature-humidity index = 78).
- *LSmeans lacking a common superscript letter differ, P < 0.11.*