

Research: Feeding supplemental methionine helps dairy cow health



Research in the use of supplemental methionine in dairy rations continues to expand as methionine has come to be recognized as an essential nutrient for dairy cows. One focus in this expansion is cow health.

Particularly critical to dairy cow health are the weeks immediately after parturition. During the transition phase from dry cow to lactating cow, the incidence of metabolic diseases peaks and can be a primary deduction from the economics of milk production. The most common clinical conditions include milk fever, dystocia, retained placenta/metritis, ketosis, left displacement of the abomasum, clinical mastitis, and lameness.

Supplemental methionine supports cow health and wellbeing. Research results show the benefits on four parameters (Table 1) such that the combined savings on treatments to mitigate production decreases can be in the order of \$80 per cow per year. The savings are calculated using the MilkSmart™ App which makes financial calculations based on the outcomes of numerous research studies.

Table 1: Incidence of disease, associated costs, and potential savings/year*

Disease	Cost/Case/Year	Current Incidence	Reduced Incidence	Savings/Cow/Year
Ketosis (clinical)	\$232	14%	44%	\$14.29
Ketosis (sub-clinical)	\$67	40%	44%	\$11.79
Mastitis	\$224	40%	35%	\$31.36
Left DA	\$494	4%	18%	\$3.56
Metritis	\$300	20%	43%	\$25.80
Total:				\$86.80

*Adisseo MilkSmart™ App

In early lactation, for instance, high-producing dairy cows are prone to developing fatty livers. Lysine and methionine facilitate the secretion of fat out of the liver. They are called limiting amino acids and can limit an animal's production and performance when in short supply.

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Recent research trials from the University of Illinois highlight the health benefits:

- Liver function improved while inflammation and oxidative stress were reduced in the cows receiving supplemental methionine. Their livers were better able to metabolize liver fat during the second and third week after calving. Supplemental methionine led to faster recovery from negative energy balance due to healthier liver function and decreased inflammation and resulted in higher DMI and milk production.
- In a first trial, post-fresh cows receiving supplemental methionine increased dry matter intake by 1.4 kg (3.08 lb) to more than 2 kg/day (4.40 lb). The increase in dry matter intake resulted in more milk, more than 4 kg (8.81 lb) of energy corrected milk, more than 0.15% milk protein and more milkfat.
- In another trial, postpartum cows receiving supplemental methionine had an average of 5 kg/d (11 lb) more dry matter than cows receiving a moderate energy diet.
- Energy corrected milk (ECM) was also higher in the cows receiving the supplemental methionine by an average of 6.9 kg/d (15 lb) than the cows receiving only a moderate energy diet. Likely contributing to the greater milk yield were the better health status of the liver and a greater dry matter intake.
- The somatic cell count was lower in cows receiving the supplemental methionine.

