

Evaluation of the Relative Efficacy of Feeding Processed (Ground) Oilseeds versus Feeding Extracted Oil for CLA Production

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Dietary conjugated linoleic acid (CLA) induces a decrease in body fat levels and an increase in protein content. CLA is also one of the most potent of all naturally occurring anticarcinogens. Milk fat contains CLA that may potentially have beneficial effects on human health. Our recent studies have shown that the CLA content of milk increases after the introduction of the new feed to animals through modification of a cow's diet by a dietary fat source.

The objective of this study was to determine the influence of the source of dietary fat and efficacy of feeding processed (ground) oilseed versus feeding extracted oil on CLA enriched milk. Diets were prepared as follow: 1) control, 2) linola seed, 3) linola oil, 4) canola seed, 5) flaxseed, 6) safflower oil, 7) soy oil, and 8) sunflower oil. Oilseeds were mixed with barley grain (50:50) and ground before being used. Control diets contained tallow and Megalac® and all lipid supplements contributed 6% added fat to the dietary dry matter.

Dry matter intake was lower for safflower oil (17.5 kg/d), sunflower oil (18.6 kg/d), and flaxseed (18.6 kg/d), intermediate for soy oil (20.5 kg/d), and higher for control (22.1 kg/d), canola seed (21.1 kg/d), linola oil (21.1 kg/d), and linola seed diets (21.1 kg/d). Milk production was not affected by dietary treatments (35.9 ± 1.28 kg/d). Milk fat content was lower for safflower oil (2.66%), sunflower oil (2.57%), soy oil (2.90%), and linola oil (2.52%), than for control (3.62%), canola seed (3.73%), flaxseed (3.60%), and linola seed diets (3.80%). CLA in milk was higher for cows fed sunflower oil (3.05%), linola oil (3.20%), and safflower oil (2.92%), inter mediate for soy oil (1.39), linola seed (1.45%), flaxseed (0.92%), and canola seed (0.73%), and lower for cows fed the control diet (0.69%).

Results indicate that extracted oil is more efficient than oilseeds in increasing CLA content of milk and sunflower oil produces the highest CLA in milk.

Implications: Production of enriched CLA milk has an impact on the marketing of milk, which may have favorable health implications for consumers. Therefore, farmers can take advantage of receiving a higher price for their milk production.