

# Increasing the Level of CLA in Milk Fat Has No Effect on the Sensory Characteristics of Milk

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Conjugated linoleic acid (CLA) refers to a mixture of conjugated octadecadienoic acids of predominantly ruminant origin. The main isomer in bovine milk fat is the cis-9, trans-11 18:2. Interest in CLA increased after the discovery of its health promoting properties, including potent anticarcinogenic activity. Previous research at the DRTC has shown that the level of CLA in bovine milk can be increased as much as ten fold through manipulation of the dairy diet. This raises the question of whether the changes in fatty acid composition have an effect on the organoleptic characteristics of the milk, and whether CLA-enriched milk will be an acceptable product to consumers.

A study was carried out to evaluate the sensory characteristics of CLA-enriched milk. This work formed part of a dairy production trial that evaluated the ability of dairy nutrition to increase the concentration of CLA in bovine milk. Sixty-two cows were fed either a control diet (typical of diets fed in Alberta) or diets designed to increase the concentration of CLA in milk fat. Milk was collected after cows had been on the test diets for 2, 4, and 8 weeks. The milk was standardized to 3% fat, pasteurized, homogenized, and stored at 4°C until evaluation. Trained panelists evaluated milk for odor (overall intensity and off-odor intensity), flavor (overall intensity, off-flavor intensity, sweetness, aftertaste) and mouthfeel. If an off-flavor was detected, panelists could also record the type of off-flavor (flat, oxidized, acid/sour, rancid/bitter, malty, feed, fruity, salty, astringent, cooked, cowy/acetone, foreign). The trained sensory panel found that the milk samples with higher CLA were not different to the control for any of the wide range of sensory parameters evaluated. During week 8, milk from the control group and two treatment groups was collected and used for untrained consumer acceptability testing. Seventy-five untrained panelists evaluated the milk for overall acceptability, flavour, and mouthfeel. The milk samples were rated on a 9-point hedonic scale from "dislike extremely" to "like extremely". The control and CLA-enriched milks all scored between "like slightly" to "like moderately" for each sensory parameter.

**Implications:** CLA-enriched milk would be an acceptable product for fluid milk consumption.