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Composition and Flavor of Milk and Cheddar Cheese Higher in Unsaturated Fatty Acids

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A control diet and two experimental diets were fed to Holstein cows to determine how increasing dietary unsaturated fatty acids changed milk and Cheddar cheese. The control diet consisted mainly of rolled corn and soybean meal in the concentrate mixture. Experimental diets contained added dietary fat from rolled sunflower seeds or extruded soybeans substituted for part of the corn and soybean meal. Milk protein and fat concentrations were similar in milks from cows fed the three diets. Milk and cheese from the extruded soybean and sunflower diets contained lower concentrations of short-and medium-chain fatty acids and increased concentrations of long-chain fatty acids, especially unsaturated fatty acids. Milk from the extruded soybean diet was more susceptible to oxidation. Sensory evaluation of the cheese indicated that extruded soybean and sunflower diets yielded a product of quality similar to that of the control diet. Cheese made from milk obtained with extruded soybean and sunflower diets contained higher concentrations of unsaturated fatty acids while maintaining acceptable flavor, manufacturing, and storage characteristics.

Key Words: Cheddar cheese • unsaturated fatty acids • milk

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