

Effect of forage brassicas in dairy cow diets on the fatty acid profile and sensory characteristics of Chanco and Ricotta cheeses.

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Abstract:

In humid temperate regions, forage turnip (*Brassica rapa* ssp. *rapa*) and forage rape (*Brassica napus* ssp. *biennis*) are common fodder crops used for dairy cattle during the summer season. However, there is little scientific information regarding the use of brassicas and their effect on the fatty acid (FA) profile in blood, milk, and milk products. The aim of this study was to evaluate the effect of forage brassica supplementation in dairy cows on the FA profile of blood plasma, milk, and cheese, and on the sensory characteristics of Chanco and Ricotta cheeses. Twelve multiparous dairy cows (Holstein Friesian) were housed and submitted to a 3 × 3 replicated (n = 3) Latin square design with 3 treatments (control, turnip, or rape) in 3 periods of 21 d each (14 d of diet adaptation and 7 d of measurements). The control diet consisted of 16.20 kg of grass silage (*Lolium perenne*), 2.25 kg of soybean bran, and 2.25 kg of commercial concentrate, all on a dry matter (DM) basis. In the treatments with forage brassicas, 24.15% of the total DM was replaced by turnip or rape; thus, they consisted of 12.25 kg of silage, 2.25 kg of soybean bran, 1.2 kg of concentrate, and 5 kg of turnip or rape (DM basis). A principal components analysis was performed on the results of the cheese sensory evaluation. Supplementation with turnip or rape modified the profile of FA in blood plasma and milk, increasing the saturated fraction, mainly short- and medium-chain FA, and decreasing the mono- and polyunsaturated FA. In the sensory evaluation, diet did not affect any of the 18 attributes evaluated. However, in the principal components analysis, cheeses made with milk from animals fed turnip and rape were differentiated by increased odor, flavor, spiciness, bitterness, and acidity. Overall, brassicas can be used as an alternative forage source with no negative effects on sensory characteristics of cheeses.