

elaborated with high fat milk.

Correlation between protein profile and chemical composition, pH and texture parameters in cheese elaborated with three fat contents milk ripened at 28 days.

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Abstract / Resumen:

72 goat's raw milk cheeses were elaborated according to the traditional hand-made cheese practices in Canary Islands (Spain), cheese were made with three different fat content milk: full-fat milk cheese (FFC, 5% fat in milk), reduced-fat milk cheese (RFC, 1.5% fat in milk) and low-fat milk cheese (LFC, 0.4% fat in milk). At 28 days of ripening, the gross composition, pH and texture profile analyze were analyzed and water-soluble proteins were extracted. Protein extract was separated on SDS-PAGE gel by duplicated. Person's correlation analysis was performed between the electrophoretic bands values (intensity x area) and chemical composition (moisture, protein, fat and fat in dry matter), pH and texture profile analysis. alphas2-casein, peptides 2 and 3 showed significant correlations with all chemical parameters (moisture, protein, fat and fat in dry matter content), and the &alphas1-casein was correlated with pH and total protein percentage. Intensity x area value of alphas2-casein was positive correlated with moisture and total protein (0.60 and 0.64, respectively), and however showed negative correlation with cheese fat and fat on dry matter (-0.63 and -0.64), and it is according to the less rate of degradation of this casein. Also high correlations were found between peptides 2 and 3 and chemical parameters, those correlations were much higher with peptide 3. Positive correlation was observed between internal and external pH and alphas1-casein (0.58 and 0.53) and alphas2-casein (0.65 and 0.57) and negative with peptides 2 and 3. It's known that as cheese fat content decrease, pH is higher and the casein rate of degradation is less. Fracturability, hardness, cohesiveness and gumminess correlated positively (0.65, 0.67, 0.62 and 0.62, respectively) as well adhesiveness and elasticity showed a negative correlation (-0.53 and -0.68, respectively) with alphas1-casein and alphas2-casein. Similar correlations were found between peptides 2 and 3 and the texture parameters studied, although the correlations were higher with peptide 3. In conclusion, the main correlation observed was that when pH increased, the percentage of casein increased too, and concomitantly, the proportion of peptides 2 and 3 decreased. At day 28 of ripening is possible to establish a stronger relationship between the electrophoretic bands profile on SDS-PAGE and texture parameters in goat cheese elaborated with raw milk.

Gross chemical composition and texture profile analysis of full-fat, reduced-fat and low-fat goat cheese elaborated with raw milk using traditional procedures in Canary Islands (Spain).

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Abstract / Resumo:

Three different milk fat contents were used to elaborate 72 goat's raw milk cheeses according to traditional hand-made cheese practices in Canary Islands: full-fat cheese (FFC), reduced-fat cheese (RFC) and low-fat cheese (LFC) with 5, 1.5 and 0.4% fat in milk, respectively. At 1, 7, 14 and 28 days of ripening, cheese samples were taken to analyze chemical composition, pH and texture profile. The cheese fat content, as expected, was higher in FFC (18.5%) than in RFC and LFC (9.4 and 1.2%, respectively), at day 1. At the end of this study, fat in dry matter values were 48%, 26% and 18%, FFC, RFC and LFC, respectively. At day 1, protein content was higher in LFC (22.8%) than in RFC (21%) and FFC (19%). Throughout maturation, protein percentages were increasing over time, showing values of 33%, 25% and 20%, LFC, RFC and FFC, respectively at day 28. Moisture was 47% in FFC, 52% in RFC and 56% in LFC at 1 d of maturation, dropping until 40%, 50% and 51%, respectively at 28 days. The average of external and internal pH value at 1 day was similar in all groups (6.6). During the first two weeks of ripening, external and internal pH values decreased, but at day 28, the external and internal pH increased slightly. pH values were significantly higher in LFC than in RFC and FFC in all ripening times. Values of fracturability and hardness of LFC and RFC were significantly higher than FFC throughout the 28 days of ripening. At day 28 both parameters increased significantly for all cheeses, 190, 83 and 38 N for fracturability, and 193, 106 and 51 N for hardness, in LFC, RFC and FFC, respectively. The cohesiveness was higher in LFC than in the other groups. Adhesiveness increased in all cheeses until day 14, dropping significantly at 28 days of maturation in RFC and LFC. Elasticity dropped slightly over the 28 days on the FFC, but in the RFC and LFC decreased significantly, and presented differences between the 3 types of cheese in all times of the ripening. Gumminess was constant over the 28 days of ripening in FFC. But for the RFC and LFC, gumminess increased during the experiment, and also remained significant differences among the 3 types of cheese in the four times when the measures were made, with higher values in the LFC. In conclusion: fat reduction resulted in lower fat and fat/dry matter content, and higher protein and moisture content. Fracturability, cohesiveness, masticability and hardness increased as fat decreased in cheese, while elasticity and adhesiveness decreased.

Adaptation of traditional kid's rennet pastes to handmade goat's cheese making.

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Abstract / Resumo:

The use of natural kid rennet has been progressively reduced due to difficulties in cheese making standardization and health regulation. As result, cheeses are losing many of the traditional sensory characteristics. In this experiment 23 abomasums of lactating kids of 35 ± 5 days were obtained from licensed abattoir, 13 were with suckling milk (PSM) and 10 were washed and refilled with goat's raw milk (PRM). They were dried and the paste was prepared by grinding with 23 % of NaCl. Microbiological analysis showed that all stomachs were available for rennet paste preparation. Pastes were prepared and preserved at 4°C during 1 year without statistics variations in coagulating time. Experimental cheeses were made with PSM paste, PRM paste and commercial Chymax® rennet (CC) as control; type of rennet was the only variation factor. Cheeses were analyzed at 7, 30 and 60 days of