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Chemical Analysis and Sensory Evaluation of 'Domiati Cheese' Using Strains Isolated from Algerian Goat's Milk

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Abstract : A total of 120 wild lactic acid bacteria were isolated from goat's milk collected from different areas in Western Algeria. The strains were screened for production and technological properties such as acid production, aminopeptidase activity, autolytic properties, antimicrobial activity, and exopolysaccharide production. In general most tested isolates showed a good biomass separation when collected by centrifugation; as for the production of the lactic acid, results revealed that our strains are weakly acidifying; nevertheless, lactococci showed a best acidifying activity compared to lactobacilli. Aminopeptidase activity was also weak in most strains; but, it was generally higher for lactobacilli compared to lactococci. Autolytic activity was generally higher for most strains, more particularly lactobacilli. Antimicrobial activity was detected in 50% of the isolates, particularly in lactobacilli where 80% of strains tested were able to inhibit the growth of other strains. The survey of the profile of the texture, the proteolysis as well as the development of the flavor in the Domiati cheese made on the basis of our isolated strains have been led during the ripening. The sensory assessment shows that the cheese salted in milk received the best scores in relation to cheese salted after drainage. Textural characteristics, such as hardness, cohesiveness, gumminess, and chewiness decreased in the two treatments during the 60 days of ripening. Otherwise, it has been noted that adhesiveness and adhesive force increased in the cheese salted in milk.

Keywords : lactic acid bacteria, technological properties, acidification, exopolysaccharide, bacteriocin, textural properties
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