

IMPROVING THE RIPENING AND FLAVOUR OF PRATO CHEESE BY THE USE OF ADJUNCT NON STARTER LACTIC ACID BACTERIA

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The use of adjunct non starter lactic acid bacteria in cheese has been considered an innovative technology. This is due to its properties in the acceleration of the flavor development and ripening, production of additional flavors and control of bitterness. Three independent batches of Prato-type cheese were manufactured: A, containing only LD culture (CHN-22); B, containing LD culture plus *Lactobacillus helveticus* (CHN-O2); and C, containing LD culture plus *Lactobacillus paracasei subsp. paracasei* PN16. Both these adjuncts were submitted to high pressure homogenization and dried by atomization in a Mini Spray Dryer (Büchi B-290) prior to use. The dried adjuncts were suspended in the whey and added to the curd/whey mixture prior to cooking during cheesemaking. This addition did not influence significantly ($P < 0,01$) the chemical composition and physical properties of Prato cheese. The water-soluble nitrogen and trichloroacetic acid-soluble nitrogen values of cheeses increased during ripening (36 days), and no significantly difference ($P < 0,01$) was observed among the three cheeses batches. On the other hand, the cheese B and C showed the highest glutamine activity and cheese C exhibited the highest lysine activity, comparatively to the cheese A. The hedonic scores of the attributes flavour and texture of the cheese B increased along the ripening and decreased to the other cheeses. The evaluation of the softness of the cheese body, salty taste, acidity and bitterness, using the just-right scale, showed an improvement of these attributes during the ripening. Therefore, the selection of adjunct cultures is becoming an important aspect of successful cheese production.