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The influence of seasons and ripening time on yeast communities of a traditional Brazilian cheese

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Traditional Minas cheese is an artisanal cheese manufactured by farmers on a small scale, utilizing raw bovine milk. The occurrence and effects of the dry and rainy seasons on yeast populations in traditional Serro Minas cheese, one of the most popular cheeses produced in Brazil, were studied over the course of 60 days of ripening. A total of 19 yeast species were identified via sequence analysis of the D1/D2 domains of the large subunit of the rRNA gene. Fourteen yeast species were obtained from cheese produced during the dry season and fifteen species were obtained from cheese produced during the rainy season. High diversity indices for the yeast species were determined for cheese manufactured during both seasons (average H'D=1.7 and H'R=1.5, respectively). The predominant species in Serro Minas cheese included *Debaryomyces hansenii, Kodamaea ohmeri and Kluyveromyces marxianus. Debaryomyces hansenii* 28.12 showed low lipolytic and high proteolytic activity. *Kluyveromyces marxianus* 83F and 60P demonstrated lipolytic and β-galactosidase activity, respectively. *Kodamaea ohmeri* 88A displayed low lipolytic and β-galactosidase activity. Maximal lipase, β-galactosidase and protease activity were observed at 20°C and pH 6.0, 30°C and pH 7.0 and 50°C and pH 6.0, respectively. Considering that D. *hansenii* 28.12, K. *ohmeri* 88A and K *marxianus* 60P together showed protease, lipase and β-galactosidase activity in this study, further research on the possibility of including these yeasts as part of a starter culture and research on their effects on the sensory properties of Serro Minas cheese merit more study.

Biography

Valeria Macedo Cardoso is a Pharmaceutical, with Master in Pharmaceutical Science and PhD in Food Microbiology (2011) from the Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil. She is a permanent Professor in the Pharmacy Department, Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), Diamantina, Minas Gerais, Brazil. Her research focuses on the area of food microbiology and food quality issues.

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