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Somatic cells: a potential tool to accelerate the low-fat goat cheese proteolysis

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The current demand of healthy products and the dairy products diversification have increased the interest in low-fat cheese and goat cheese. When these two characteristics are combined, the result is a flawed cheese, with similar shortcomings to other low-fat cheeses. As a result, it is necessary to seek alternatives. Somatic cells present lysosomal enzymes, such as cathepsin B, cathepsin D, cathepsin G and elastase; many of which pass to the milk where they cause more intense proteolysis and lypolysis. The aim of this study was to evaluate the effects of somatic cells taken from healthy goats by centrifugation on fresh low-fat cheese made with raw or pasteurized milk. Miniature cheeses were made at levels of somatic cells: 200,000 and 2,000,000 cells/mL. The cheeses were ripened for 1 and 7 days. Somatic cells addition increased the proteolysis of α S1-caseins, α S2-caseins, and para-k-casein in low-fat cheeses elaborated with raw goat milk after 7 d of ripening; however, all caseins were reduced when pasteurized goat milk was used in cheese-making. This study proposes the use of somatic cells as a tool to increase the softness of low-fat cheese texture, thereby improving it. Furthermore, its use could be extended to full-fat cheese to accelerate the maturing process.