

**TITLE:** EVALUATION OF VOLATILE COMPOUNDS IN CHEESES PRODUCED WITH YEASTS STARTER CULTURES

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**ABSTRACT:**

Yeasts are frequently found in cheese production throughout the process, but their use as a starter culture is still little explored industrially. However, the utilization of this group of microorganisms as starter cultures in cheese has gained attention due to its high proteolytic and lipolytic activity, and potential production of volatile compounds responsible for the formation of aroma and flavor in the final product. This study aimed to evaluate the production of volatile compounds in cheeses produced with two yeasts, *Kluyveromyces lactis* and *Torulaspora delbrueckii*. Milk was pasteurized at 65 °C/ 30 min, then cooled to 38 °C. For the cheese production, yeasts were inoculated at populations of 10<sup>5</sup> cell/mL in the milk. Cheese maturation was conducted in a cold room at 10 °C and 85% humidity for 21 days. Volatile compounds were analyzed in a GC-MS QP2010 (Shimadzu) chromatograph equipped with a Supelcowax column (30 m × 0,20 mm id × 0,25 µm). Compounds were identified by the NIST library 2011 and expressed as equivalents of 4-nonanol. Twenty-five compounds were detected in both cheeses. In general, the cheese inoculated with *T. delbrueckii* B14 showed a higher concentration of esters while the cheese inoculated with *K. lactis* B10 presented higher concentrations of volatile acids and alcohols. Three volatile acids were detected in both cheeses, being isocaproic acid the most abundant in cheese produced with *K. lactis* B10, and decanoic acid in the cheese inoculated with *T. delbrueckii*. Among the esters, phenylethyl acetate and isoamyl acetate were the most abundant in both cheeses. The profiles of volatile compounds demonstrate that the use of *T. delbrueckii* and *K. lactis* as starter cultures of cheese provides a final product with better aromatic characteristics.

**Keywords:** volatile compounds; yeast inoculum; *Torulaspora*; *Kluyveromyces*

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