

## EFFECT OF *SATUREJA HORTENSIS* L. EXTRACT ON THE SHELF LIFE OF SOFT-FRESH CHEESE

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Extending the cheese shelf-life is an important factor in the dairy industry because it can decrease the economic impact, by reducing losses attributed to spoilage and expanding by distribution of cheese in new markets. Addition of preservatives is one of the simplest and oldest ways to prolong the cheese shelf life. Alternative preservation techniques using naturally derived ingredients are being investigated in cheese making, with the use of spices and herbs, attracting even more interest. *Satureja hortensis* L. extract was used in five concentrations (0.1, 0.2, 0.3, 0.4 and 0.5 g/100mL milk), the soft-fresh cheese samples were vacuum packed. Treatment of cheese with 0.1 and 0.2% extract (T1 and T2) is recommended for antioxidant and sensorial quality. The cheese samples showed significant DPPH scavenging activity (IC<sub>50</sub> 0.18 g/100mL milk) compared with the values obtained for ascorbic acid. Total solids, fat, protein, and pH were measured and no significant differences were observed in compositional parameters of the cheese samples. *Satureja hortensis* L. extract showed significant antibacterial activity against strains of Gram-positive bacteria (*Staphylococcus aureus* ATCC 25923), while the inhibitory effect on Gram-negative bacteria (*Escherichia coli* ATCC 25922, *Salmonella abony* ATCC 6017) is less pronounced. As a result, the shelf life of the selected samples (T1 and T2) at sensorially, physicochemical and microbiologically level is 21 days, while the shelf life of the control samples is 14 days. Therefore, the use of *Satureja hortensis* L. extracts as a natural ingredient has great potential as a substitute for natural preservatives and antioxidants with significant antimicrobial activity against foodborne pathogenic and spoilage microorganisms, thus contributing to extending the food product shelf life.

**Keywords:** antibacterial activity, DPPH scavenging activity, *Satureja hortensis* L. extract, shelf life.

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