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CHERRY TOMATO JAM – THE SURPRISING BALANCE OF SWEET AND AROMATIC FLAVORS

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Abstract *Tomatoes (Solanum lycopersicum) are vegetables of high nutritional and functional importance due to their rich content of bioactive compounds such as lycopene, polyphenols, and vitamin C. These compounds contribute to antioxidant activity and potential health benefits, particularly through the reduction of oxidative stress. The content of these substances may vary depending on the degree of ripeness and processing conditions, influencing the nutritional value of derived products.*

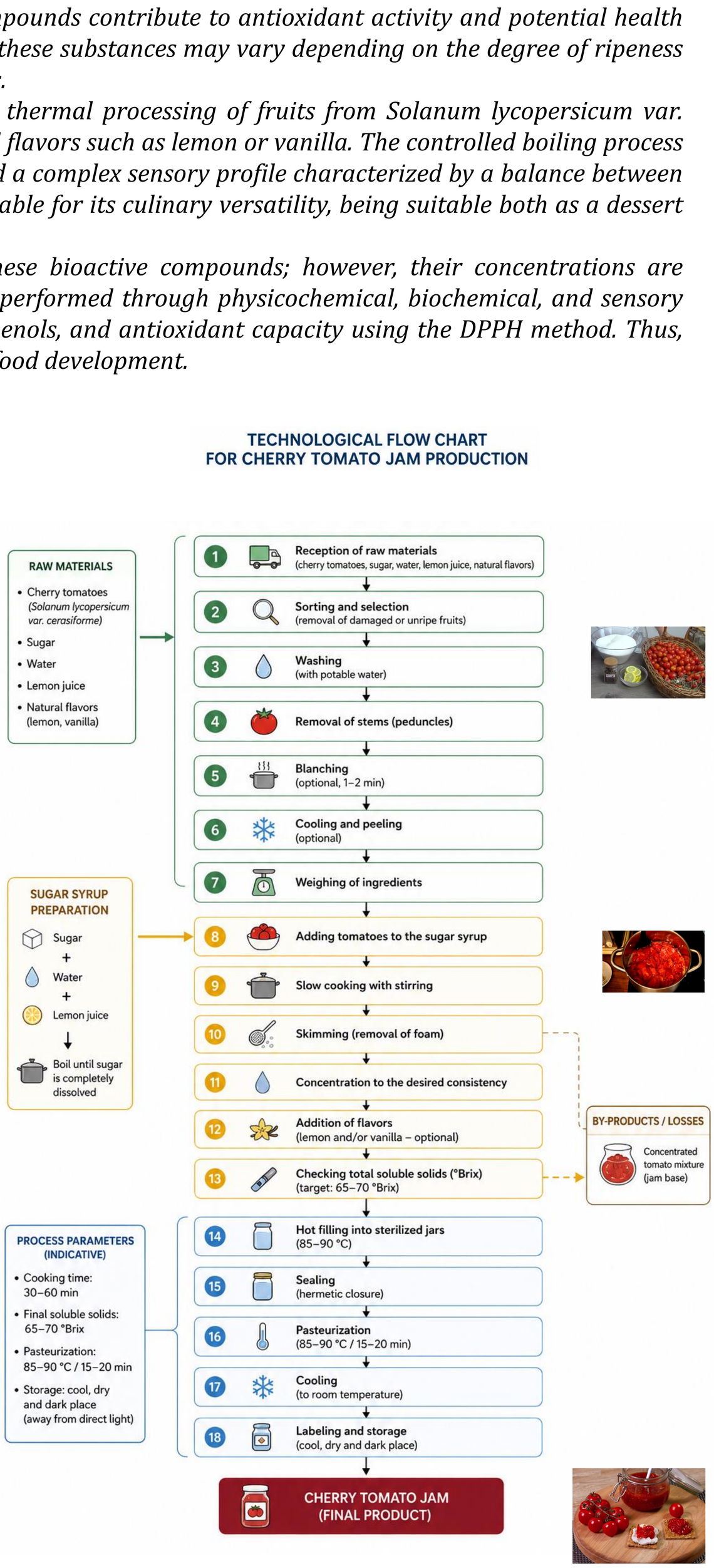
Cherry tomato jam is an unconventional food product obtained by the slow thermal processing of fruits from Solanum lycopersicum var. cerasiforme in a concentrated sugar solution, sometimes enriched with natural flavors such as lemon or vanilla. The controlled boiling process allows partial preservation of the fruit structure, resulting in a fine texture and a complex sensory profile characterized by a balance between intense sweetness and the mild acidity typical of tomatoes. This product is notable for its culinary versatility, being suitable both as a dessert and as an accompaniment to fine cheeses or gourmet dishes.

From a biochemical perspective, cherry tomato jam may retain part of these bioactive compounds; however, their concentrations are influenced by the applied heat treatment. Product quality evaluation can be performed through physicochemical, biochemical, and sensory analyses, including determination of pH, moisture content, dry matter, polyphenols, and antioxidant capacity using the DPPH method. Thus, the product represents an innovative way of valorizing tomatoes in functional food development.

Sample	Total titratable acidity (% citric acid)	Dry matter (%)	Total ash (%)
Fresh cherry tomatoes	0.48 ± 0.02	5.63 ± 0.11	0.56 ± 0.03
Cherry tomato jam	0.72 ± 0.03	67.84 ± 0.42	0.61 ± 0.02

Sample	pH	Total soluble solids (°Brix)
Fresh cherry tomatoes	4.32 ± 0.04	5.20 ± 0.15
Cherry tomato jam	3.54 ± 0.02	68.20 ± 0.35

Sample	Total polyphenols (mg GAE/100 g)	Antioxidant capacity (DPPH, IC_{50} mg/mL)
Fresh cherry tomatoes	42.75 ± 1.84	4.21 ± 0.18
Cherry tomato jam	28.46 ± 1.27	8.47 ± 0.26



Conclusions: The thermal processing of cherry tomatoes for jam production led to an increase in dry matter, soluble solids, and acidity, as well as a decrease in pH value. As a result of heat treatment, a reduction in polyphenol content and antioxidant capacity was observed compared to fresh tomatoes; however, the final product retained an important amount of bioactive compounds. The obtained results demonstrate that cherry tomato jam represents a food product with functional value and potential use in modern nutrition.