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DEVELOPMENT AND PHYSICOCHEMICAL AND SENSORY CHARACTERIZATION OF STRAWBERRY AND ARONIA JAM SWEETENED WITH AGAVE SYRUP

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Abstract: This study aimed to develop and characterize a strawberry and aronia jam sweetened with agave syrup, as an alternative to conventional sugar, evaluating its physicochemical and sensory properties. The jam was obtained by thermal concentration and analyzed for moisture content, soluble solids, pH, titratable acidity, and vitamin C content. A sensory evaluation was conducted using a five-point hedonic scale with 16 panelists. The product showed high sensory acceptability, with a mean score of 4.62 for taste and 4.58 for overall acceptability. The jam contained 28.4 mg/100 g of vitamin C and presented suitable physicochemical characteristics. The results highlight the potential of combining strawberry and aronia with agave syrup to obtain a nutritious jam with enhanced functional and sensory properties.

• Introduction

Strawberries (*Fragaria × ananassa*) and aronia berries (*Aronia melanocarpa*) are fruits with high nutritional value, rich in vitamin C, polyphenols and anthocyanins, known for their antioxidant properties. Agave syrup, a natural sweetener with a low glycemic index, represents a healthier alternative to conventional sugar. Combining strawberries and aronia with agave syrup can result in an innovative jam with enhanced nutritional and functional properties.



Strawberry
(*Fragaria × ananassa*)



Aronia
(*Aronia melanocarpa*)



Agave syrup
(*Agave tequilana*)

• Material and method

1. Technological process



Fruit preparation (washing, sorting, cutting) → Jam production (with agave syrup) → Product assembly

2. Analytical methods

- Moisture content (drying method)
- Soluble solids content (refractometry, °Brix)
- Titratable acidity (direct titration)
- Vitamin C content (2,6-dichlorophenol-indophenol method)

3. Sensory evaluation

16 panelists
Five-point hedonic scale

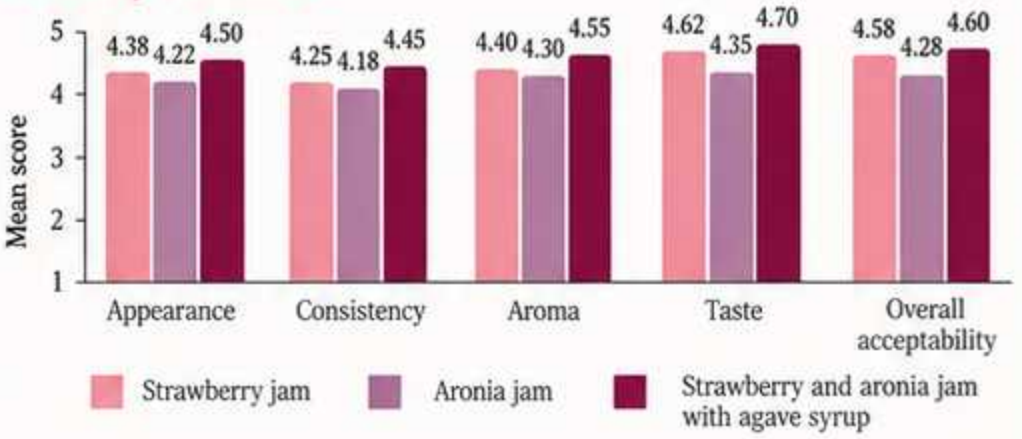
- Appearance
- Consistency
- Aroma
- Taste
- Overall acceptability

pH (pH-meter)

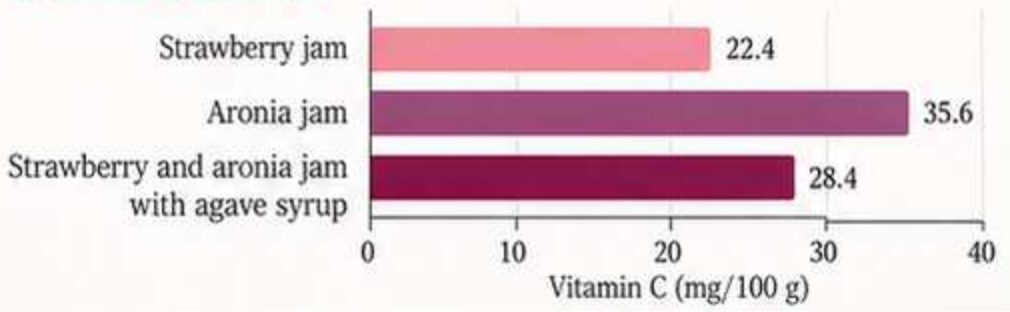


• Results and discussions

Sensory evaluation



Vitamin C content



Physicochemical characteristics

Parameter	Value (strawberry and aronia jam)
Moisture content (%)	28.5 ± 0.6
Soluble solids content (°Brix)	62.3 ± 0.4
pH	3.21 ± 0.05
Titratable acidity (%)	0.86 ± 0.03
Vitamin C (mg/100 g)	28.4 ± 1.2

Estimated nutritional value (strawberry and aronia jam)

Parameter	Value (per 100 g)
Energy	≈ 156 kcal
Proteins	0.6 g
Lipids	0.3 g
Carbohydrates	37.8 g
Fibre	3.1 g

• Conclusions

- The strawberry and aronia jam sweetened with agave syrup showed high sensory acceptability, with a mean score of 4.62 for taste and 4.58 for overall acceptability.
- The product contained 28.4 mg/100 g of vitamin C and presented suitable physicochemical characteristics.
- Using agave syrup as a natural sweetener represents a promising approach for the development of healthy and functional fruit jams.