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Comparison and consumer's preference on jam and jelly from "Mastrantonio" sweet cherry fruits

Valeria Rizzo[1,*], Francesca Celano[1], Pietro Sorci[2], Barbagallo Salvatore[1] and Giuseppe Muratore[1]

Introduction

- Fruits and vegetables are often seasonal, and their shelf life, as well as their presence on the market are often limited, moreover also their economic value is very different and related with their abundance. For these reasons to overcome both aspects, they can be processed to improve their quality and their economic value.

- The Sicilian territory is characterized by many peculiarities both of environmental and biological nature that results in unique features in the agronomical production along the slopes of volcano Etna.

Introduction

- Particular attention is paid to the typical varieties of sweet cherry 'Donnantonio' or 'Mastrantonio' which since 2011 is specifically included among those recognized in the disciplinary for the use of the “Ciliegia dell'Etna” DOP trademark.
- Fresh sweet cherry 'Mastrantonio' are on the market for a short period, usually from June to August. The fruit of this cultivar is well known and appreciated by consumers for its specific characteristics: medium-large size, dark red skin, bright, sweet and crunchy, and very pleasant pulp. Moreover, they are an excellent source of many nutrients and phytochemicals, which contribute to a healthy diet.

Introduction

- Cooking jams, jellies and marmalades using fruits, sugar, pectin and edible acids is one of the oldest foods preserving processes known to mankind allowing fruit consumption in the off-season[1].

- Fruit jams and jellies are very popular among consumers, they are appreciated for their sweetness, flavor, taste, texture, color and aromatic profile.

Materials & Methods

- Locally grown sweet cherry “Mastrantonio” (Prunus avium L.) were collected directly from producers. Prior to processing, fruits were stored at ambient temperature. The ingredient used for jam and jelly production were: sweet cherry pulp, sweet cherry juice, agave syrup, lemon juice, pectin, locust bean gum (LBG) in variable proportions.

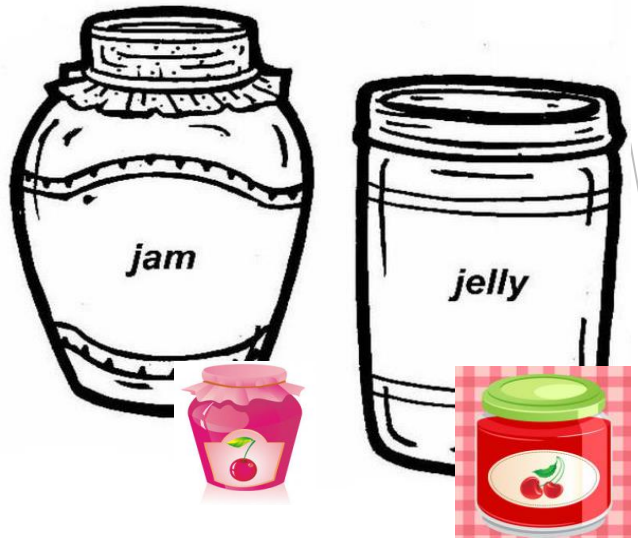
- **Fig. 1** shows general processing steps for jam and jelly production.

Fig. 1

Materials & Methods

- Fig. 2 shows processing for sweet cherry jelly production;

Fig. 2



- Fig. 3 shows experimental design of jam and jelly variables;

Fig. 3

Materials & Methods

Consumer Evaluation

Panelists were chosen from producers, staff, students and visitors who attended the seminar titled “Sustainable innovation to improve the DOP *Ciliegia dell’Etna*” organized by University of Catania and partners.

They were selected based on their knowledge of sweet cherry fruits, as well as their regular consumption of jams and jellies.

- We decided to apply a discriminating sensory test, a paired-comparison preference test, an analytical method commonly used to identify if there are any perceptible differences between products[2].

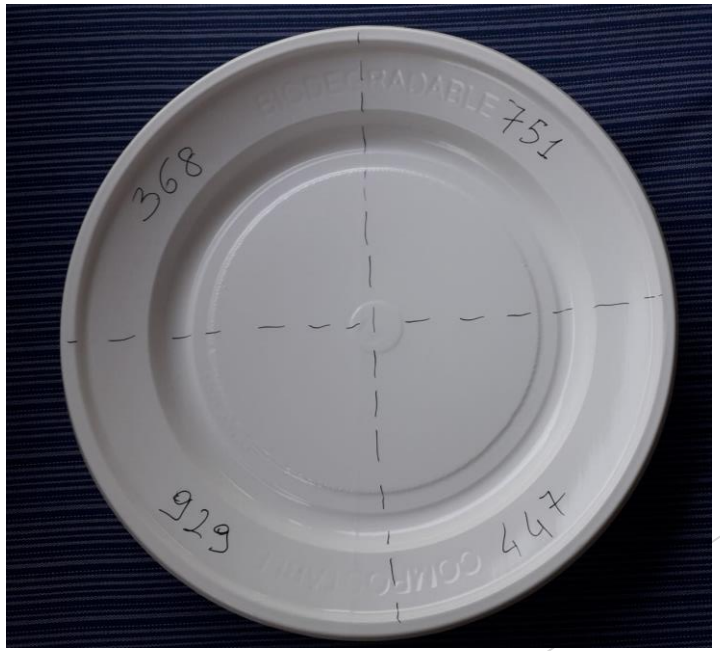


Fig. 4

Materials & Methods

- Randomized samples were prepared organizing samples X and Y (jam) and A and B (jelly) in the corrected way in order that combination XY and YX (jam) as well as AB and BA appeared the same number of time (Fig.4) and simultaneously they were assigned casually among judges[3].
- 30 judges indicated the best thickness between jams and the highest sweetness between jellies (Fig.5).

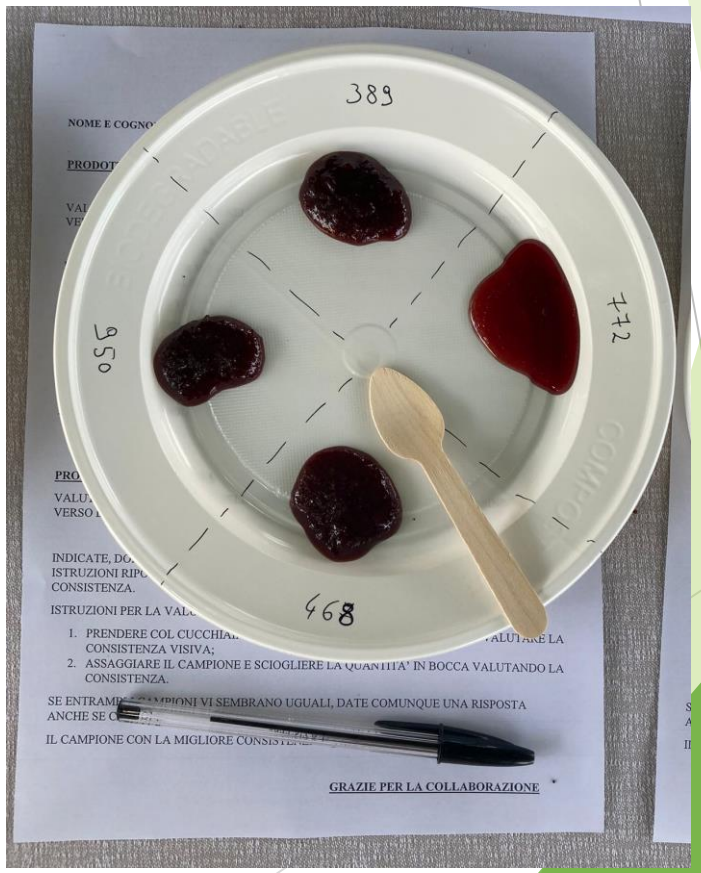


Fig. 5

- Results were elaborated calculating the amount of each preference expressed and were considered significant for the following one-way values[3] :

- Jam: α = 0.05; β = 0.3 pd = 40%
- Jellies: α = 0.2; β = 0.1 pd = 40%

(α = I species statistic error; β = II species statistic error; pd = judges' proportion who distinguished between products)

- Jam with the addition of LBG was statistically recognized as different and selected as the best choice for texture achieved (23 correct answers); LBG confirm is high technological value.

RESULTS

RESULTS

- Between tested jellies any statistical difference was found (19 correct answers); probably the aliquot of lemon juices added was not enough to induce a difference in consumers taste.

- Results underlined how the LBG, although still not very common in traditional jam' recipes, can be considered as good thickener, as perceived by consumers.

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For questions: vrizzo@unict.it

[1] Di3A University of Catania, via Santa Sofia 100, 95123 Catania, Italy

[2] I peccatucci di Mamma Andrea S.r.l., Via caduti dell'8 luglio 1960 n. 4, 90124 Palermo, Italy

[*] corresponding author: vrizzo@unict.it