

Qualitative features of organic tomatoes

Liliana BĂDULESCU^{1*}, Aurora DOBRIN², Oana-Crina BUJOR², Andreea STAN², Andrei MOȚ²,
Manuela FINȚI¹, Viorica LAGUNOVSKI-LUCHIAN¹

Corresponding authors: lilib_20@yahoo.com

¹ University of Agronomic Sciences and Veterinary Medicine of Bucharest

² Research Center for Studies of Food and Agricultural Products Quality, University of Agronomic Sciences and Veterinary Medicine of Bucharest

Introduction

In recent years, the organic sector has put significant efforts in the development of clear definitions for gentle and quality oriented processing of plant based food stuffs to supplement existing regulations [1,2]. Concrete quality standards for different types of processing are under development in several Core Organic Plus projects. However, there is still a significant need for development of a Code of Practice. Quality of a product and sustainability of production depend on the cumulative impacts of each processing step in the food chain, as well as the quality of the raw material. With increasing demands by the consumers who expect high quality foods produced sustainably and preferably regionally (SusOrganic consumer survey), pressure on the producers is growing as this requires skilled and qualified agri-food practitioners, professionals and manufacturers to be able to deliver the best quality at affordable prices and the lowest environmental impact possible.

Materials and methods

Organic tomato samples

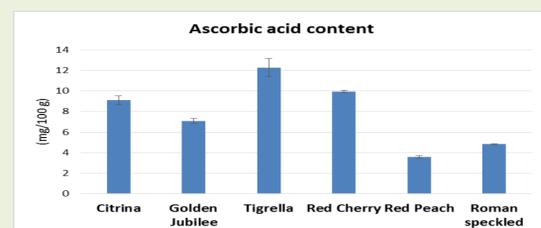
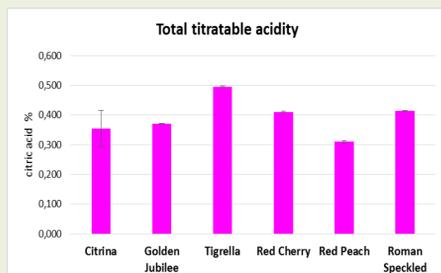
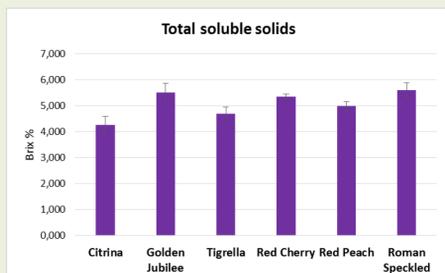
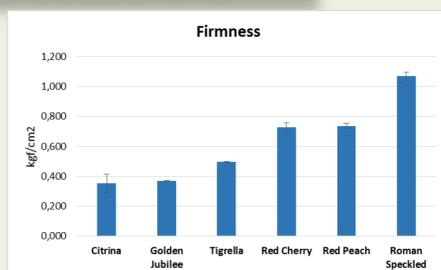
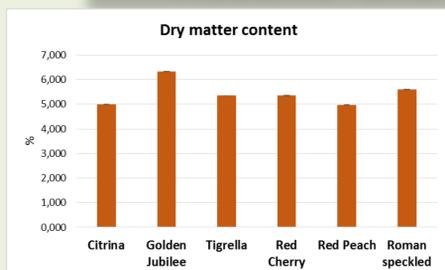
Six varieties of organic apples like *Citrina*, *Golden Jubilé*, *Tigrella*, *Red Cherry*, *Red Peach*, *Roman Speckled* were harvested at the optimal harvest time stage from the organic farm in conversion *Nasul Roșu* in July-August 2018. All analysis were performed in the laboratories of *Research Center for Studies of Food Quality and Agricultural Products from UASVM Bucharest*.

Samples were analysed for physico-chemical attributes immediately after harvest. Firmness, dry matter content, total soluble solids and titratable acidity were determined after Catuneanu-Bezdeadea et al. (2018). The bioactive compounds such as vitamin C was determined by HPLC analysis using an Agilent Technologies 1200 chromatograph equipped with DAD detector. The total carotene and lycopene were by spectrophotometry after extraction in petroleum ether.

All determinations were performed in triplicate; standard deviation was calculated using basic function of Microsoft Excel.



Results and discussions

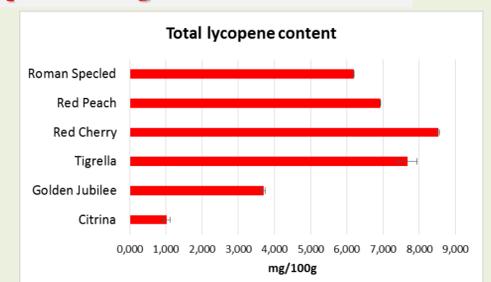
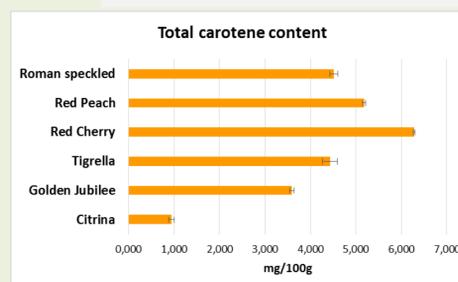


Variation of different physico-chemical attributes in organic tomatoes

Qualitative analysis revealed that all studied organic tomato have variety-dependent characteristics.

The major pigment lycopene is present in all varieties: red, stripped, orange or yellow. As well as the carotenes.

Variation of bioactive compounds in organic tomatoes



- ❖ **Red Cherry** and **Golden Jubilé** varieties are recommended for fresh consumption because of their high dry substance content and low acidity, which gives it a balanced taste
- ❖ **Tigrella** variety has a high content of specific bioactive compounds (vitamin C, lycopene), but high acidity may be a hindrance for a category of consumers
- ❖ **Red Cherry**, **Red Peach** and **Roman Speckled** varieties have high pigments content (carotenes, lycopene), while the variety of the yellow one **Citrina** registered a small amount of carotenes, probably because of its high flavonoids content
- ❖ **Red Cherry**, **Red Peach** and **Roman Speckled** varieties, even **Tigrella**, could be recommended for processing, due to their high content of pigments, dry matter and total soluble solids

Conclusions

Results from this study indicated that all studied organic tomatoes presents variety-dependent characteristics and could be recommended for fresh and processed consumption, also.

Acknowledgements:

The work on this research was carried out with the support of UEFISCDI grant ERANET 4/2018 SusOrgPlus, contract no. PN3-P3-446/2018.