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NUTRITIONAL QUALITY PARAMETERS OF THE FRESH RED TOMATO VARIETIES CULTIVATED IN ORGANIC SYSTEM

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INTRODUCTION

- Production of tomatoes in the organic system is very important because these are not only the most vegetables widely consume (the second after potato) but also are classified as a functional food. Due to the high content in bioactive compounds, especially lycopene, tomatoes provide nutritional properties and also contribute to maintaining health.
- The amount of lycopene and total carotenoids content can vary with the variety, degree of ripeness, climatic conditions and agricultural practices. According to European legislation regarding organic crops, the organic products, compared to the conventional ones, have a higher amount of antioxidant compounds, are free of heavy metals and pesticides (Araujo, 2014; Lahoz, 2016; Bosona, 2018; Ronga, 2019).

MATERIALS AND METHODS

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All the quality analyses were carried out in the laboratories of the Research Center for Studies of Food and Agricultural Products Quality, University of Agronomic Sciences and Veterinary Medicine of Bucharest

Dry matter (DM)

Total carotene and lycopene content- Specord 210 Plus UV/VIS spectrophotometer

Maturity index (MI)

Taste index (TI)

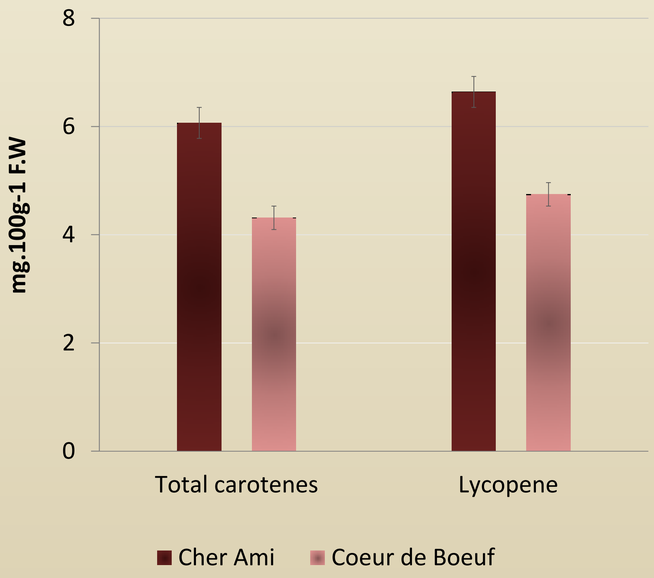
Firmness- fruit penetrometer 53200

Titratable acidity (TA)-TitroLine easy device

Soluble solids content (TSS) -Kruss Digital Handheld Refractometer

RESULTS AND DISCUSSIONS

Variation of lycopene and carotene contents for tomato varieties



- *Tomatoes of Cher Ami* had the higher TSS (5.35 %%) with 4.71% more than *Coeur de Boeuf* tomatoes.
- Both tomatoes variety, *Coeur de Boeuf* and *Cher Ami*, showed a similar level of TA of about 0.4%.
- *Cher Ami* tomatoes have the higher **maturity index .**
- *Cher Ami* and *Coeur de Boeuf* tomatoes have similar taste index of 1.06 and 1.02 respectively.
- The results for the **firmness** show that *Coeur de Boeuf* variety had the highest value of 1.46 Kgf/cm^2, with 50.21% more than *Cher Ami* variety (0.73 Kgf/cm^2).
- **Dry matter content** was 6.85% for *Cher Ami* variety and 4.87% for *Coeur de Boeuf* variety.
- Lycopene content for Cher Ami variety was of 6.64 mg.100 g−1,

while for Coeur de Boeuf variety it was 4.74 mg.100 g−1.

- Total carotenoids content follow the same trend as the lycopene content .
- Coeur de Boeuf variety had lower carotenoids content compared with the Cher Ami variety.

Nutritional parameters of Cher Ami and Coeur du Boeuf tomatoes varieties

Variety	TA (Citric acid %)	Firmness (kgf/cm^2)	DM (%)	TSS (%)	TI	MI
Cher Ami	0.41 ±0.00	0.73 ±0.03	6.85 ±0.02	5.35 ±0.11	1.06	13.03
Coeur de Boeuf	0.45 ±0.00	1.46 ±0.03	4.87 ±0.01	5.1 ±0.16	1.02	11.40

CONCLUSIONS

- **The results showed that physicochemical quality of organic tomatoes varieties assessed as dry matter, total soluble solids, firmness, titratable acidity are depending on variety.**
- **Both lycopene content and carotene content were in higher amount both in Cher Ami variety and in Coeur de Boeuf.**
- **Organic tomatoes produced successfully under controlled conditions are a good source of nutritional quality parameters, which can be used in food and pharmaceutical industries.**

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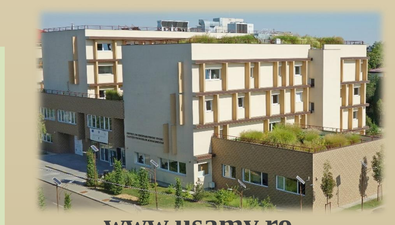

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