THE INFLUENCE OF DIFFERENT HEAT TREATMENT ON THE VITAMIN C CONTENT IN PEPPER (*CAPSICUM ANNUUM* L.)

Dragana M. Paunović[1], Jovana M. Marković[1], Biljana B. Rabrenović[1], Jovanka G. Laličić-Petronijević[1], Jasmina R. Rajić[2], Tanja S. Petrović[1]

[1]Faculty of Agriculture, University of Belgrade, Belgrade, Serbia

[2]Academy of Technical Vocational Studies, Belgrade, Serbia

UNIFood Conference
September 24th-25th 2021
University of Belgrade

INTRODUCTION

- The pepper (*Capsicum annuum* L.) is vegetables commonly used in the human diet. Due to its exceptional sensory and nutritional properties, it is readily consumed both fresh and processed into various ready meals, pickling, salads, dried spices, etc.
- There are a large number of cultivars of peppers that differ in shape, size, color, aroma, degree of hotness, etc. (Karadžić Banjac *et al.*, 2020).
- The pepper is rich source of carotenoids, vitamins, mineral matter, carbohydrates, organic acids and aromatic components (Deepa *et al.*, 2006).
- Numerous bioactive compounds found in pepper, such as vitamin C (ascorbic acid), contribute to its high antioxidant activity (Martínez *et al.*, 2005; Palma *et al.*, 2020).

AIM

- The aim of this study was to determine the vitamin C content after different heat treatments commonly used in industrial processing of peppers, as well as in the household.

"Elephant's ear" pepper *(Capsicum annuum* L.)

MATERIAL AND METHODS

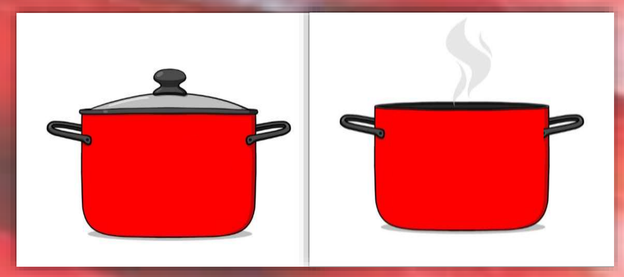
- The domestic cultivar "Elephant's ear" was subjected to three different thermal treatments:
  1. Cooking in closed and opened dish
  2. Roasting in microwave oven and on the hob } during 15 minutes
  3. Frying in sunflower oil.
- Dry matter was measured by standard gravimetric method after drying to constant weight in an oven set at 105 °C (AOAC, 2005).
- The content of vitamin C was determined using indirect iodimetry method, according to Rajković and Sredović (2009).
- The results were expressed in mg/100 g dry basis and compared with the fresh pepper used as a control.

CONCLUSIONS

- The highest loss of vitamin C was observed after frying treatment, while the lowest loss was recorded in the sample roasted on the hob.
- The results of vitamin C content indicate that its loss was higher when the thermal treatment was performed in an opened then in the closed dish probably due to the increased presence of oxygen that may intensify oxidation.
- However, the obtained quantity of vitamin C per mg/100 dry basis of the tested samples is more than enough to ensure daily intake of vitamin C and avoid its deficiency in human diet.

Fresh pepper *(Capsicum annuum* L.)

Different heat treatments of pepper samples



1. Cooking in closed and opened dish *(15 min)*

2. Roasting in microwave oven and on the hob *(15 min)*

3. Frying in sunflower oil *(15 min)*

RESULTS AND DISCUSSION

Table 1. Vitamin C content in pepper samples

Pepper samples	Dry matter content (%)	Vitamin C content (mg/100g dry basis)	The loss of vitamin C after different heat treatments (%)
Fresh pepper	**25.10**	**1295.38**	**/**
Cooked in closed dish	**29.30**	**1007.58**	**22.22**
Cooked in opened dish	**36.98**	**615.17**	**52.51**
Roasted in microwave oven	**64.99**	**494.51**	**61.83**
Roasted on the hob	**24.20**	**1201.40**	**7.26**
Fried in sunflower oil	**52.56**	**44365**	**65.75**

The highest loss of vitamin C was observed after frying treatment (65.75%), while the lowest loss was recorded in the sample roasted on the hob (7.26%), in relation to the initial amount in unprocessed pepper.

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Acknowledgements

This work was created as a result of research within the contract of the realisation and financing of scientific research work in 2021 between the Ministry of Education, Science and Technological Development of the Republic of Serbia and Faculty of Agriculture in Belgrade record number contract: 451-03-9/2021-14/ 200116.