## Postharvest and minimal processing technologies applicable to organic fruits

## Andreea Stan<sup>1</sup>, Oana-Crina Bujor<sup>1</sup>, Aurora Dobrin<sup>1</sup>, Liliana Bădulescu<sup>2</sup>

<sup>1</sup>Research Center for Studies of Food Quality and Agricultural Products, Bucharest <sup>2</sup>University of Agronomic Sciences and Veterinary Medicine Bucharest

In last years the demand of fruits obtained in organic conditions has rapidly increased among consumers due to their acceptance that are nutritional, high quality, sustainably produced and friendly with the environment. Compared to conventional system, in the organic agriculture occur additional challenges in processing and preserving of fruits, because many preservatives and additives are not allowed (EC, 2008). Different postharvest technologies are designed to extend shelf life of fruit, fresh or processed, as a component that adds value to organic production and reduces losses in its peak periods. Furthermore, information on the impact of storage and processing technologies on the main quality parameters that specifically characterize organic food is limited (Crichton, 2017; Kahl, 2014). In this way the present paper have as main objective to debate the actual knowledge on some postharvest technologies such as modified atmosphere packaging (MAP), storage under controlled atmosphere conditions (CA) and some minimal processing technologies like drying and freezing, technologies that can be applicable to organic fruits. Because these technologies are simple to be approached and managed, have became increasingly applied in fruits storage, providing increased shelf life for low costs. Otherwise, drying prevents both food spoilage and decay, allowing foods to be stored at room temperature for long periods with minimal deterioration and simplify the handling of the products through their reduction of weight and packaging volume (Moscetti et al., 2018). Considering all these advantages, they might prove to be one of the most dominant preservation techniques in the twenty-first century (Kirtil and Oztop, 2016).

Keywords: postharvest, shelf life, organic, fruits, technology

## Acknowledgement

This work was supported by a grant of the Romanian Ministery of Research and Inovation, CCCDI – UEFISCDI, project number PN-III-P1-1.2-PCCDI-2017-0662, contract number 12PCCDI/2018, within PNCDI III.

## References

- Commission regulation (EC) No 889/2008 of 5 September 2008 http://cerescert.com/portal/fileadmin/externdocs/889\_2008\_compressed.pdf - Accesed at: 05.07.2018
- Crichton, S. Shrestha, L., Hurlbert, A., Sturm, B, 2017, Use of Hyperspectral Imaging for the Prediction of Moisture Content and Chromaticity of Raw and Pre-Treated Apple Slices during Convection Drying, Drying Technology http://dx.doi.org/10.1080/07373937.2017.1356847
- Kahl, J., Bodroza-Solarov, M., Busscher, N., Hajslova, J., Kneifel, W., Kokornaczyk, M. O., van Ruth, S., Schulzova, V. and Stolz, P., 2014, Status quo and future research challenges on organic food quality determination with focus on laboratory methods, J. Sci. Food Agric., 94: 2595–2599. doi:10.1002/jsfa.6553

- Kirtil E. and Oztop M. H, 2016, Controlled and Modified Atmosphere Packaging, Reference Module in Food Science, Elsevier, https://doi.org/10.1016/B978-0-08-100596-5.03376-X
- 5. Moscetti R., Raponi F., Ferri S., Colantoni A., Monarca D., Massantini R., 2018, Realtime monitoring of organic apple (var. Gala) during hot-air drying using near-infrared spectroscopy, Journal of Food Engineering, 222: 139-150, https://doi.org/10.1016/j.jfoodeng.2017.11.023.