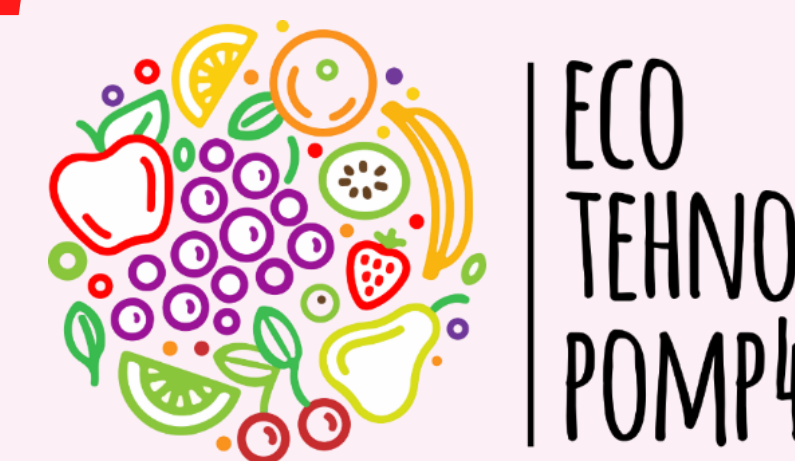


MONITORING THE QUALITY PARAMETERS FOR ORGANIC RASPBERRIES IN ORDER TO DETERMINE THE OPTIMAL STORAGE METHOD BY PACKAGING



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INTRODUCTION

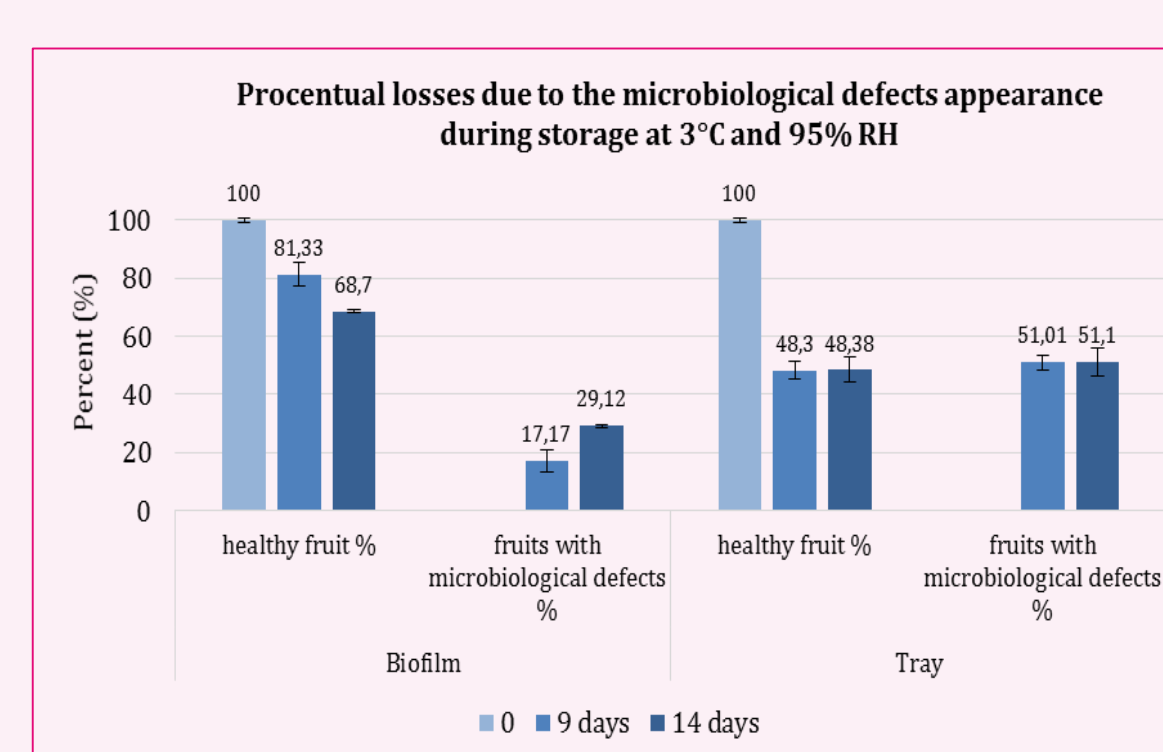
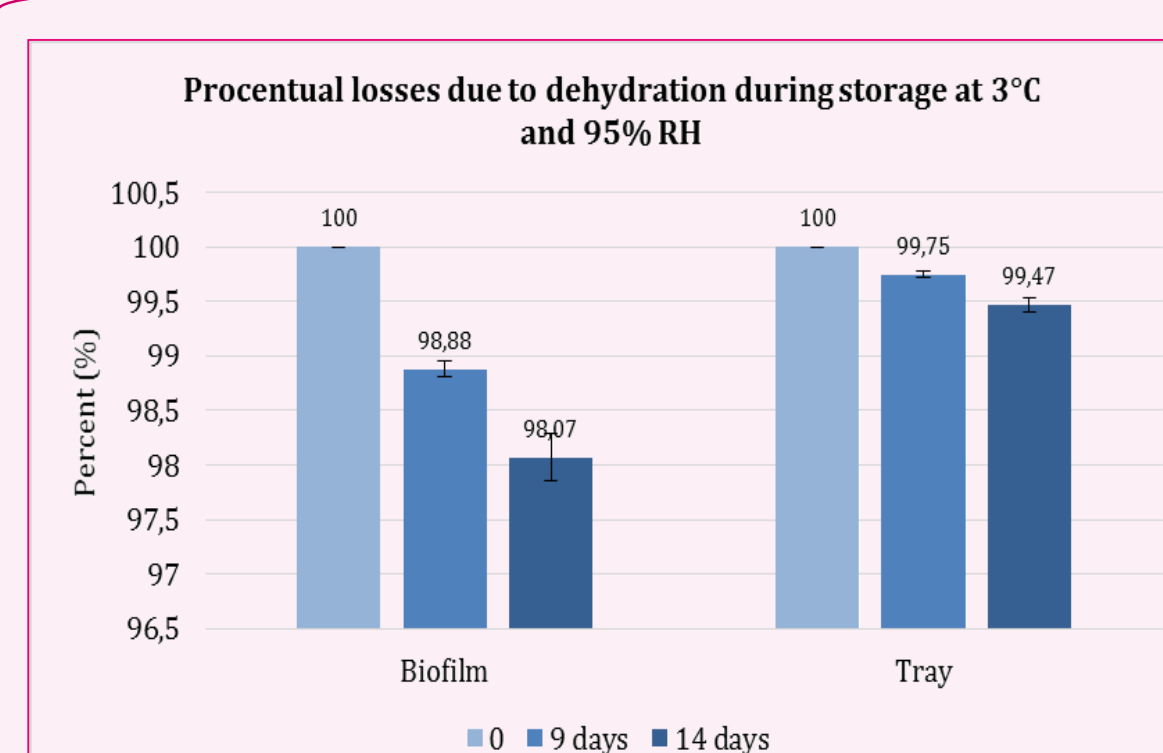
The postharvest storage of organic fresh raspberries is relatively short and the injuries, rapid spoilage, nutritional and moisture loss lead to dramatically reduces of their commercial value. As Prusky, 2011 also mentioned, postharvest decay during the supply chain has been identified as a major factor causing postharvest loss. Incidences of postharvest diseases may occur during the different stages of the postharvest chain; during harvesting, field handling, packing operations, transportation and storage (Sivakumar, 2014).

The aim of this work was to determine the quality indicators variation during cold storage of raspberries packed in two different type of materials, in order to observe which type of packaging is more suitable for organic raspberries.

MATERIALS AND METHODS

- **Sample:** Raspberries of 'Heritage' variety were harvested at the optimal ripening stage, in August 2018, from an orchard set up in 2015 from Arges County, Romania. At harvesting time the orchard was in second year of conversion from conventional to organic culture.
- **Packaging:** Raspberries were weighed 125 g per package and packed in two different materials: Polyethylene terephthalate (PET) without holes and provided by raspberry grower, the biofilm (Bioska 506) without holes from Plastiroll Oy Ltd and cardboards from Snick ecofriendly (SNK 2504) were provided by Marsal Production Group SRL, Romania.
- **Storage:** Packed raspberries were stored for 14 days at 3°C and 95% relative humidity (RH) in Cold Rooms of Postharvest Technologies Laboratory form Research Center for Studies of Food Quality and Agricultural Products from UASVM Bucharest.
- **Analyses:** total soluble solids (TSS), pH value, total titratable acid (TAA), dry matter (DM), percentage loss due to dehydration, percentage loss due to microbiological decay, ascorbic acid and total anthocyanin content.

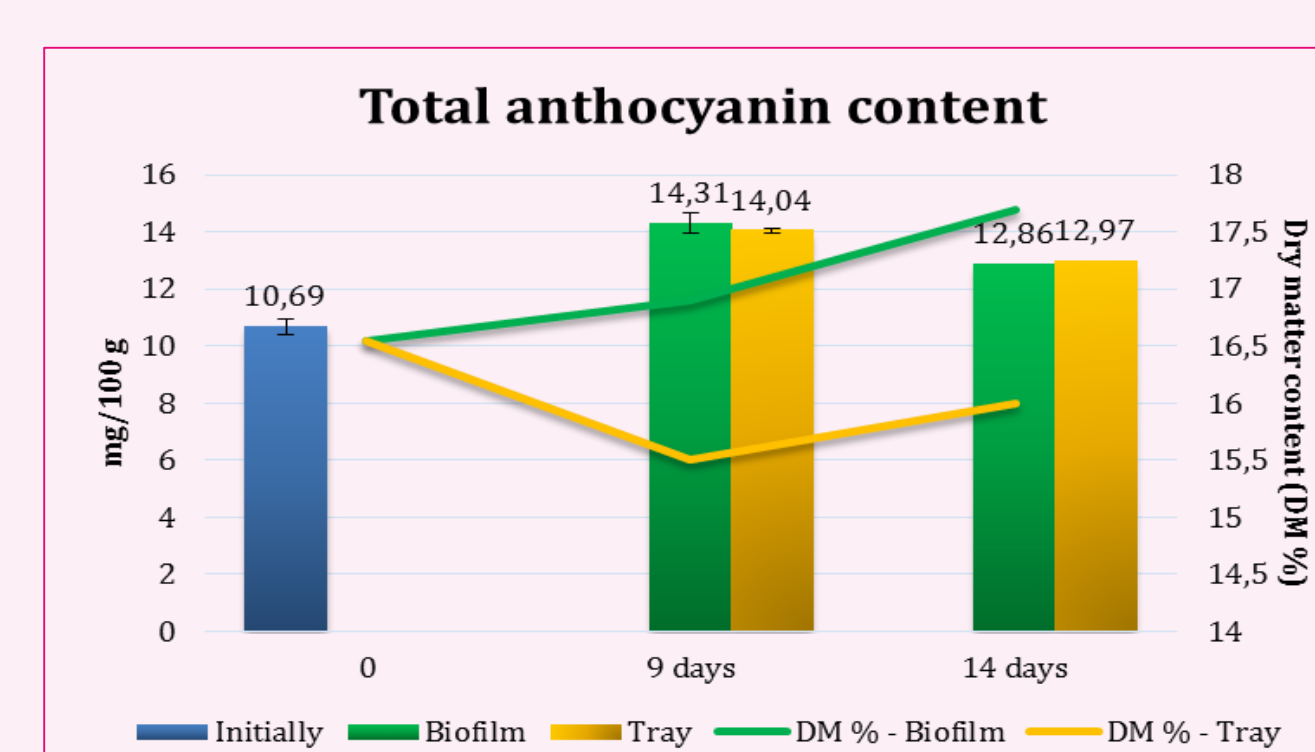
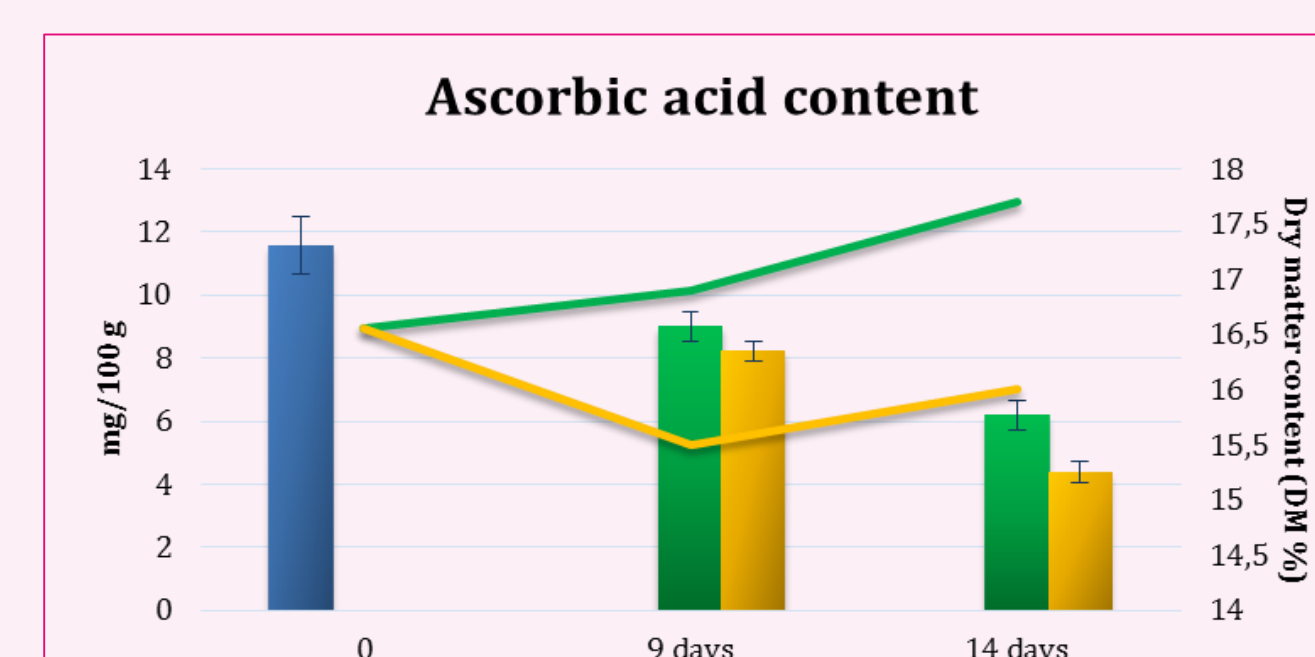
RESULTS AND DISCUSSIONS



Total soluble solids (TSS), pH value, total titratable acid (TAA) and dry matter (DM)

Raspberry variety	Packaging form	Analysis moment (days)	TSS %	pH	TAA (g citric acid/100 g product)	DM %
Heritage	Biofilm	0	11.13±1.14	3.4±0.1	1.83±0.04	16.56±0.72
		9	9.43±0.10	3.1±0.32	1.88±0.02	15.51±1.18
		14	8.8±0.22	3.08±0.1	1.85±0.03	17.7±1.02
	Tray	9	10.20±0.14	3.13±0.12	2.07±0.03	16.95±0.98
		14	7.57±0.15	3.1±0.12	1.77±0.04	22.82±0.52

Nutritional characteristics



CONCLUSIONS AND FUTURE PLAN

- Percentage loss due to dehydration were slightly higher in biofilm comparing with PET trays.
- Percentage loss due to the microbiological defects appearance were lower in the case of raspberries packed in biofilm comparing with those in PET trays.
- Ascorbic acid content was better maintained for raspberries packed in biofilm comparing with those in PET trays.
- Total anthocyanin content of raspberry registered similar behavior for both biofilm and PET tray.
- *Finally this work suggest that biofilm preserve better the quality indicators of organic raspberries, but further studies and trials are required to asses the effects of biofilm in preserving raspberries quality and microbial safety.*

REFERENCES

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2. Sivakumar, D., Bautista-Banos, S. (2014). A review on the use of essential oils for postharvest decay control and maintenance of fruit quality during storage. Crop Protection, 64, 27-37 <https://doi.org/10.1016/j.cropro.2014.05.012>.

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