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The use of freeze-dried mushrooms in instant food preparations

Sándor RÓZSA^{1*}, Gheorghe POȘTA^{2*}, Lukács LEHEL³, Tincuța Marta GOCAN¹, Ileana ANDREICA¹

¹University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Faculty of Horticulture and Business in Rural Development, Department of Horticulture and Landscape, Mănăștur St. 3-5, Cluj, Cluj-Napoca, Romania

²University of Life Sciences "King Mihai I" from Timisoara, Faculty of Engineering and Applied Technologies, Department of Horticulture, Aradului St. 119, Timisoara, Timis, Romania

³Research Station, Faculty of Horticulture and Business in Rural Development, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Mănăștur St. 3-5, Cluj, Cluj-Napoca, Romania

Abstract: Lyophilization is a preservation process, consisting of the sublimation of water with the help of vacuum. The advantage of this method, is that, the mushrooms retain all their nutritional properties. Edible mushrooms have a multitude of benefits for human health. They contain a number of nutrients, some of which are a real therapeutic support. Due to the fact that the preparation of freeze-dried foods is extremely simple, recently, the assortment of instant foods has diversified a lot, including those based on dried mushrooms. In the study carried out, two edible species of mushrooms from the spontaneous flora (*Marasmius oreades* and *Boletus edulis*) were used, which were subjected to lyophilization, then their rehydration capacity was increased. The lyophilized *Boletus edulis* species presented a rehydration capacity of 98.50%, and the *Marasmius oreades* species 96.75%, both species presenting excellent taste characteristics in various culinary preparations.

• Introduction

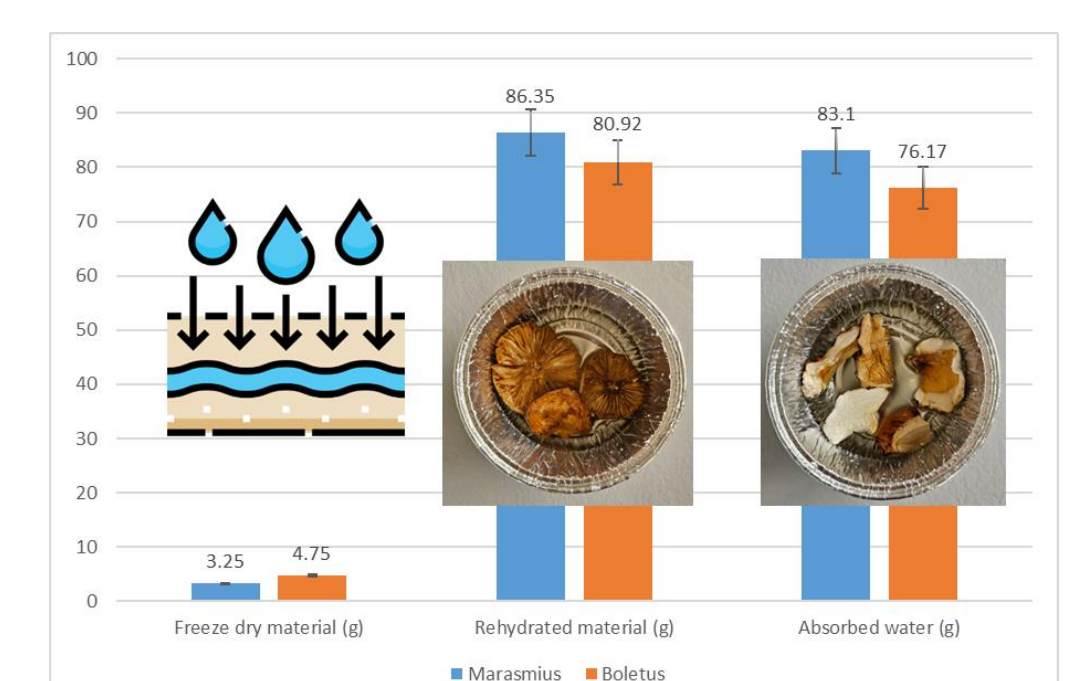
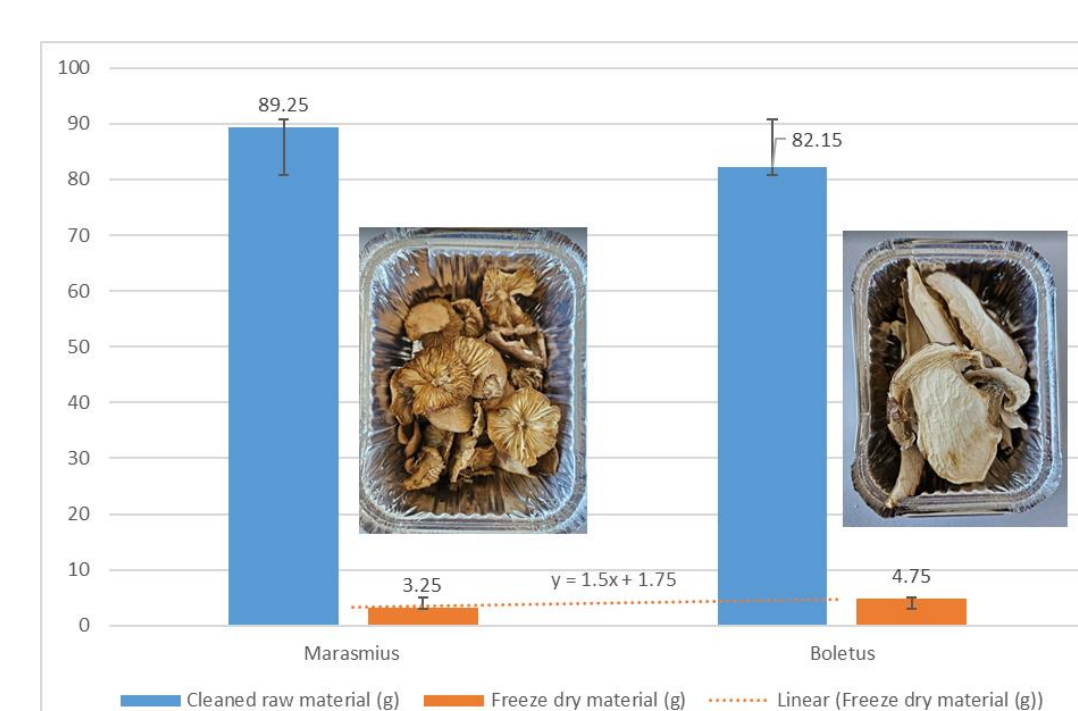
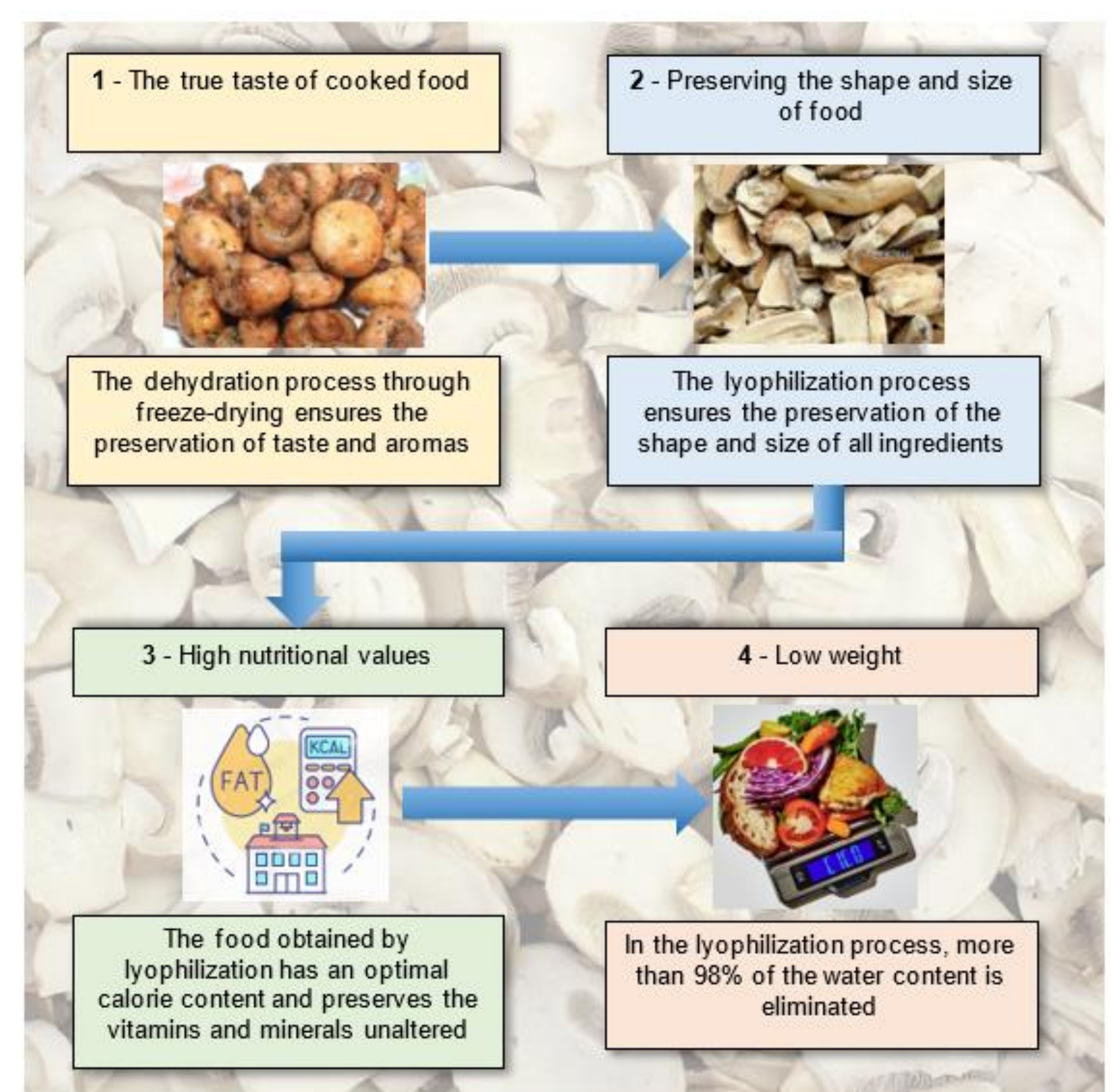
After, for more than five decades, the lyophilization process was used predominantly in the pharma field (for the preservation of vaccines, plasma etc.), the massive growth in recent years is due to the food industry [2]. More specifically, the use of this technology has evolved as more and more studies have appeared that confirm the superior quality of freeze-dried foods, compared to other food preservation techniques [6]. Other arguments in favor of freeze-dried foods are: the long warranty period, between 3 and 25 years, the very short preparation time (a few minutes), the lack of toxic and light food additives and the preservation of the original appearance of the food.

• Material and method

In the study, two species of mushrooms were used: *Marasmius oreades* and *Boletus edulis*, which were harvested from deciduous forests in Cluj County.

• Results and discussions

Following this technological process, a decrease in the mass of the raw material is recorded. In our case, a greater decrease was recorded in the species *Boletus edulis*, due to the fact that the sporiferous tubes were removed. The recorded losses were 17.85% for the *Boletus* species and 9.16% for the *Marasmius* species.



• Conclusions

→ both species of mushrooms studied have a very high rehydration capacity, and thanks to this fact they can be used in instant food preparations;
→ the higher rehydration capacity of the *Boletus* species is due to the constitution and texture of the mushroom.