

OSMOTIC DEHYDRATION OF WILD GARLIC IN SUCROSE-SALT SOLUTION

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ABSTRACT

Due to its nutritional and nutraceutical qualities, wild garlic (*Allium ursinum* L.) has great potential for use in the food and pharmaceutical industries. The limitation is availability of this plant only during the early spring season and tendency to perishable immediately after harvest. Some method of drying or pretreatment is necessary to improve sustainability of wild garlic for further use in aforementioned industries. Osmotic dehydration (OD) is verified as an effective pretreatment to reduce the water content in raw material with minimal negative effect on nutritive and sensorial quality of the obtained osmodehydrated product.

In this study, osmotic dehydration of wild garlic leaves in aqueous solution of sucrose and salt, at three temperatures (20, 35 and 50 °C) and diverse immersion times (1, 2.5 and 4h) was analyzed. The effect of temperature and immersion time on the dry matter content, water loss and solid gain was evaluated using response surface methodology (RSM) and analysis of variance (ANOVA). Also, fundamental chemical composition was determined by *SRPS ISO* methods, and mineral content was determined using AAS method, in samples before and after OD. The results show that during the process of OD dry matter content of wild garlic increases from 7.91±1,08% to 51.51±1,34%. Maximum achieved values for water loss (0.6189±0.0146 g/g i.s.) and solid gain (0.2417±0.0146 g/g i.s.) indicate a good dehydration level. The amount of analyzed chemical and mineral components in osmodehydrated samples, except Na, was slightly reduced compare to the fresh wild garlic leaves.

Keywords: osmotic dehydration, wild garlic, osmotic solution, water loss, chemical composition