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BOOK OF ABSTRACTS

CHEMICAL PROPERTIES OF PUMPKIN DRIED BY DIFFERENT METHODS

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INTRODUCTION

Pumpkin is originated from America and belongs to Cucurbitaceae family. This fruit/vegetable has a huge nutritional and health protective value. Fresh pumpkins are very sensitive to microbial spoilage, even when refrigerated, being sometimes convenient to freeze or dry them. Drying is a method that allows the maintenance of nutritive properties of pumpkins and also has the capability to extend their life. Presumably, drying process is the oldest and the most important method of food preservation. The main objective of drying consists in removing water in the solids up to a certain level, at which microbial spoilage and deterioration chemical reactions are much minimized. Freeze drying is considered a high technique of excellence and guarantees a higher quality of the product.

METHODOLOGY

In the present work the drying treatments used were convective air drying in a tunnel and a chamber at different temperatures, and freeze-drying. The chemical properties of the fresh and dried samples were evaluated in terms of ash, sugars (reducing, non-reducing and total), fiber and vitamin C, using established methodologies (AOAC). The phenolic compounds and antioxidant activity were assessed using a spectrophotometer to read the absorbencies of the methanol and acetone extracts.

RESULTS AND DISCUSSION

The results show that drying influences the sugars contents, and vitamin C in a high extent. The values for phenolic compounds and antioxidant activity are very identical for all samples, thus indicating that drying has a minor effect on the antioxidant capacity and in the phenolic compounds contents. However, some slight differences were observed. Furthermore, the acetone and methanol extracts also show some little differences.

CONCLUSIONS

The results obtained enable us to conclude that drying does not induce important changes, either in the phenolic contents or in the antioxidant activity.

KEYWORDS: pumpkin; drying; freeze-drying; vitamin C; phenolic compounds; antioxidant activity.