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The influence of minimal processing on the nutritional and microbiological quality of leafy vegetables

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Abstract The market for dehydrated vegetables it is important for most countries worldwide. Many conventional thermal methods, including airflow, vacuum, and freeze-drying, result in the falling rate period of drying. Minimal processing of vegetables includes methods for preserving of products while minimizing changes of freshness characteristics. A digital microwave oven (Samsung M9G45) and IR digital moisture balance model AD-4714 at 185 W were used for drying of parsley, pig weed and garden sorrel at 2, 4 and 6 minutes. The vitamin C content in the fresh and dried samples was determined by 2.6-dichlorophenol-indophenol method. Microbiological investigations were carried out by plate counting method. In infrared drying, for the garden sorrel leaves, the moisture content (in db) was highest with 71.63% after 2 minutes and with 54.81% after 6 minutes comparative with microwave drying. Ascorbic acid values gave the lowest results (7.98 $mg \cdot 100^{-1} \cdot g^{-1}$ db, respectively 3.01 $mg \cdot 100^{-1} \cdot g^{-1}$ db for infrared and microwave dried garden sorrel) after 6 minutes. For MW, the contamination reduction (4 log) was obtained in the case of pig weed after 6 minutes of drying. The results showed that in a short period of time the leaf's can be dried in rapidly conditions.

Keywords: leafy vegetables, microwave processing, infrared drying, nutritional and microbiological quality.

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