Evaluation of drying conditions on the quality properties of dried kiwi slices

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Abstract

Fruits and vegetables are products which can be consumed in its raw form without undergoing processing or transformation. Drying is one of the oldest methods of food preservation [1]. It is still used widely to preserve foods for home consumption and for sale. Dried fruits are one of the most popular products made by small-scale processors. The health benefits of consuming fruit are well documented [2]. Kiwifruit (*Actinidia deliciosa* cv Hayward) is a nutrient-dense fruit and extensive research over the last decade on its health benefits has linked its regular consumption to improvements not only in nutritional status, but also benefits to digestive, immune and metabolic health [2]. Dried kiwis are highly needed in food industries. The dehydration process removes much of the water content from kiwi slices, making richer in nutrients. This work aimed to evaluate the effect of the air-drying temperature on quality and nutritional compounds of dehydrated kiwi slices, during 120 days of storage. Hot air drying of kiwi slices was investigated at drying temperature ranged from 40°C to 55°C and slice thickness of 4 mm. Fresh and dried kiwi slices were analysed for their pH, activity water, total solid soluble (TSS), colour, titratable acidity, ascorbic acid content, total phenols and flavonoids content as well as radicals scavenging activities evaluated by ABTS test [3,4]. The analysis carried out on the dehydrated kiwifruit have shown a good disposition of the kiwi towards the drying process. Particularly, it has been observed that drying treatment at low temperature allowed to preserve the nutraceutical properties of the food matrix. Samples treated at 40°C showed the highest values of total phenols and flavonoids content with values of 2179 mg/100g dried weight (DW) and 281 mg/100 DW fruits, respectively. This high phytochemical content is responsible of the dried kiwifruit promising antioxidant activity (1657 mmol Trolox/100g DW fruits). Moreover, all dried samples exhibited, at the end of storage, averagely a high content of ascorbic acid (429–339 mg/100g DW fruits) and a slight variation of physicochemical parameters.

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