

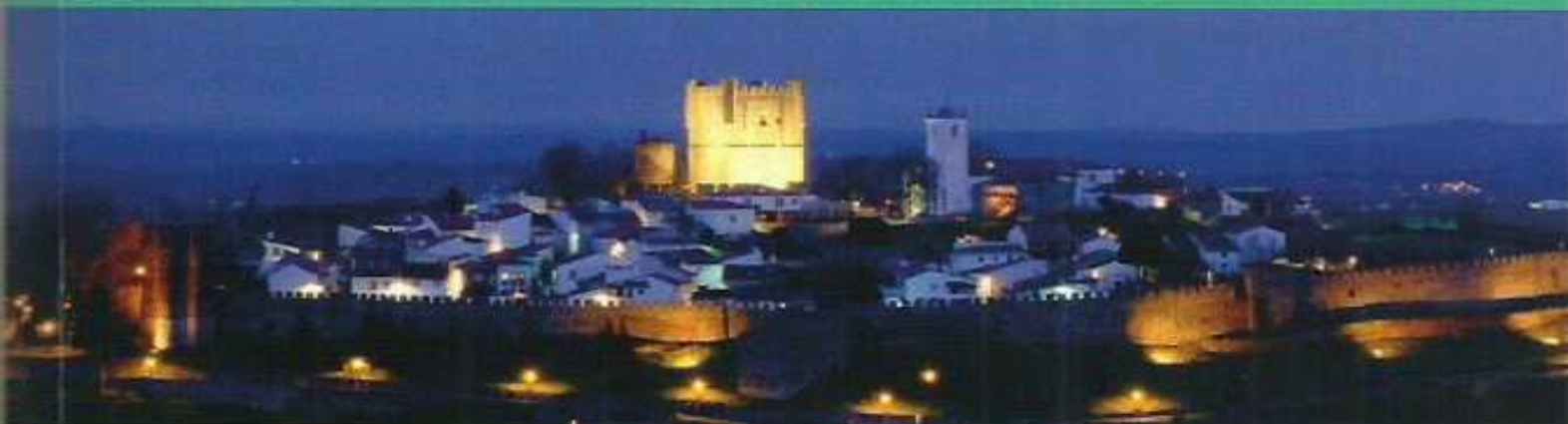


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Effect of drying on the physical, chemical and sensorial properties of kiwi

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Kiwi fruit is a highly nutritional fruit due to the high level of vitamin C and its strong antioxidant capacity due to a wide number of phytonutrients including carotenoids, lutein, phenolics, flavonoids and chlorophyll [1]. Drying consists of a complex process in which simultaneous heat and mass transfer occur. Several alterations occur during the drying of foods at many levels (physical, chemical, nutritional or sensorial) which are influenced by a number of factors, including processing conditions [2]. Temperature is particularly important because of the effects it produces at the chemical and also at the physical level, particularly colour and texture [3]. In the present work were evaluated the changes in sliced kiwi when exposed to air drying at different temperatures (50, 60, 70, 80 °C), namely in terms of some chemical properties like ascorbic acid or phenolic compounds, physical characteristics like colour and texture and also at the sensorial level. All experiments followed standard established procedures and several replicates were done to assess each property.

The results obtained indicated that moisture was reduced with drying by 74 to 87%, depending on the temperature. Also ascorbic acid decreased with drying, being 7% for 50 °C and increasing up to 28% for the highest temperature (80 °C). The phenolic compounds and antioxidant activity were also very much affected by the drying temperature. The water activity of the dried samples varied from 0.658 to 0.753, being compatible with a good preservation. Regarding colour, the total colour difference between the dried samples and the fresh sample was found to vary in the range 9.45 – 17.17. The textural parameters were also much affected by drying, namely hardness which decreased by 45 to 72 %, and all other parameters increased: cohesiveness (approximately doubled), springiness (increased 2 to 3 times) and chewiness which increased up to 2.5 times that off the fresh sample. Adhesiveness, which was observed for the fresh samples (-4.02 N.s) disappeared in all the dried samples. The sensorial analysis made to the dried samples allowed establishing the sensorial profiles as shown in Figure 1.



Fig.1. Sensorial profile of the dried samples of kiwi

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