Evaluation of some physical, chemical and sensorial properties of eggplant submitted to different drying treatments

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ABSTRACT:

Drying is the oldest method for food preservation, which people learned from nature, and has been using since ancient times. In Turkey, for example, eggplants are dried in the sun hung up with a string. Although it is a very economic method, it has many disadvantages and has been replaced by other drying methods, like hot air drying. This work intended to analyse the differences originated by drying in eggplant slices when submitted to different temperatures (50, 60, 70, 80 ºC). The characteristics evaluated were some chemical properties (moisture, water activity and vitamin C, total phenols and antioxidant activity), physical characteristics (colour coordinates and textural parameters) also at the sensorial level. All experiments followed standard established procedures and the values obtained resulted from the calculation of the mean and standard deviation considering the different replicates made.

The results showed that the moisture varied from 90% in the fresh sample to 16-26% on the dried samples, depending on the temperature. The water activity of the dried samples varied from 0.96 in the fresh sample, a high value that allows degradation of the product to a value in the range 0.63-0.76 for the dried samples, allowing a better preservation. The vitamin C, which is a thermosensitive vitamin, decreased with drying, with variations going from 41% at 50 ºC to 74% for the highest temperature (80 ºC). The contents of phenolic compounds and the antioxidant activity were also influenced by drying temperature. The total colour difference between the dried samples and the fresh sample was found to vary in the range 17.5 – 18.8. As expected, also texture was considerably altered with drying. Hardness decreased (by 16-20%), and so did adhesiveness or cohesiveness while elasticity increased from the fresh to the dried samples. The sensorial analysis made to the dried samples allowed concluding that the sample dried at 70 ºC was slightly more appreciated by the panellists.

Keywords: drying, eggplant properties, colour, texture, vitamin C.