

4th International Conference and Exhibition on

Food Processing & Technology

August 10-12, 2015 London, UK

The effect of microwave-infrared combination drying on quality of osmotically dehydrated eggplants

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Drying, which is removing of moisture from foods is the most common preservation method used for fruits and vegetables. Due to the higher moisture content, eggplants have limited shelf life. In order to extend their shelf lives, it is common to dry eggplants. Although hot air drying method is mostly used in industry, food is exposed to heat for longer time during hot air drying which affects quality parameters adversely. Microwave-infrared combination drying can be an effective alternative drying method with the advantages of reducing drying time and improving product quality. Osmotic dehydration is used as pretreatment for drying to reduce initial moisture content. The aim of this study to examine the effect of microwave-infrared combination drying on quality parameters of osmotically dehydrated eggplants. By using 20% (w/w) salt solution, the initial moisture content of eggplants decreased from 14 ± 0.314 kg water/ kg dry solid to 3.2 ± 0.014 kg water/ kg dry solid. Osmotically dehydrated eggplants were dried to 0.13 ± 0.002 kg water/kg dry solid final moisture content by using the combination of different microwave powers (30%, 40% and 50%) and infrared powers (10%, 20% and 30%). As quality parameters, the rehydration ratio and shrinkage of dried eggplants were determined. As the microwave and infrared powers increased, shrinkage of dried eggplants was decreased. Higher microwave and infrared powers provided lower rehydration ratio. When the osmotically dehydrated eggplants compared with untreated ones, osmotically dehydrated eggplants had higher shrinkage and lower rehydration ratio than untreated ones.

Biography

Ayca Aydogdu has completed her both BS and MS Degree at Middle East Technical University Food Engineering Department. She has been studying PhD at Middle East Technical University and she has also been working as Research Assistant at the same department for 3 years.

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