

## EFFECT OF ULTRASOUND AMPLITUDE ON DRYING KINETICS OF OKRA

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Ultrasound energy is generated by sound waves having frequencies higher than human ear can detect. In recent years many researches have been conducted in food technology including applications of ultrasound technology in filtration, defoaming, degassing, depolymerization, cooking, cutting, freezing, drying, tenderization, brining and etc. In this study, the effect of ultrasound amplitude on drying kinetics, effective moisture diffusivity, and rehydration ratio of okra were investigated using ultrasound pretreatment prior to hot air drying. For this purpose, ultrasonic generator with 20 kHz frequency was used, pretreatment time was 20 minutes and amplitude values were chosen as 55% and 100%. The temperature of drying air was 60°C and the velocity was kept at 0.3 m/s. Five mathematical models available in the literature was fitted to experimental data. In this respect, Page and Modified Page models found to be the most suitable for describing drying characteristics of untreated and ultrasonically pretreated okra. For pretreated samples effective moisture diffusivity increased with increasing ultrasound amplitude and values were  $3.95 \times 10^{-8}$  for untreated sample,  $4.71 \times 10^{-8}$  m<sup>2</sup>/s for amplitude of 55% and  $5.85 \times 10^{-8}$  m<sup>2</sup>/s for amplitude of 100%. Rehydration ratio of untreated and pretreated samples with amplitudes of 55% and 100% were 7.35, 6.04 and 7.89, respectively. Results showed that drying rate and rehydration capacity were significantly affected by the ultrasound amplitude.

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