Title Rehydration of dried chestnuts: influence of variety and process conditions

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Abstract

The rehydration step of dried chestnut was characterized for practical application. Chestnuts (Marrone di Zocca) dried by different methods were soaked for 24 hours at different temperatures (10°C, 25°C and 40°C) and agitation rate (0 and 12500 Re). In order to study the effect of chestnut biotype on rehydration kinetics further rehydration processes were performed on three chestnut biotypes (Marrone di Zocca, Marrone di Alfero and Marrone di Castel del Rio) at 25°C. The rehydration kinetics were studied using an empirical model which permitted to estimate the initial rehydration rate and the rehydration capacity. Results have shown that rehydration temperature and drying conditions were the most important parameters influencing rehydration rate while the agitation rate influenced the hydration rate only at higher temperature (40°C). The three considered chestnut biotypes did not differ amongst them for rehydration rate. Rehydration capacity after 24 hours was not affected by the processing variables considered in this study but the biotype could influence this parameter.