

ABSTRACT

Bael (*Aegle marmelos* L.) is a tropical fruit native to Southeast Asia and is grown throughout India, Sri Lanka, Pakistan, Bangladesh, Burma, Thailand, and most of the Southeast Asian countries. It is recognized for its high level of medicinal and nutritive properties. Optimization of drying was done by ANN modelling and genetic algorithm for 27 samples. The optimized conditions of drying were found to 400W power, 530 mmHg vacuum and 22g maltodextrin/50g pulp. A third-order polynomial relationship was found to correlate the effective moisture diffusivity (D) with corresponding average moisture content (M_{avg}) of the pulp sample. Highest R^2 (Regression coefficient), 9.98E-01, was achieved in the 800 W and 530 mmHg combination indicating the good fitness of empirical relationship to represent the variation in effective moisture diffusivity (D_{eff}) with average moisture content (M_{avg}) of bael pulp during drying under different power and vacuum levels. During the sorption isotherm peleg model fitted best to the experimental data since its R^2 value is highest.

Keywords: Optimization, ANN, Regression coefficient, Peleg model