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RESEARCH PAPER

Modelling of sorption isotherms of blanched and unblanched spinach leaves

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SUMMARY :

A study was conducted to determine the effect of blanching on moisture adsorption and desorption characteristics of spinach by static gravimetric method. Different saturated salt solutions were prepared to provide constant relative humidity environments. Four spinach samples (Unblanched, Unblanched dried, Blanched and Blanched dried) were kept at 3 temperatures (30^0C, 40^0C and 60^oC) with corresponding five relative humidity levels (10.95 to 92.31%). It was observed that EMC of spinach increased with increase in relative humidity at constant temperature also at constant ERH, EMC decreased with increase in temperature. The adsorption EMC was lower than the desorption EMC for all the samples at all temperature and relative humidity ranges. The blanched dried spinach exhibited lowest EMC than other samples. Sorption data was modeled by using Henderson equation to develop guideline for moisture sorption process. Both constant of equation found to be dependent on temperature. The relation between constant was expressed by a polynomial equation.

KEY WORDS : Spinach, Sorption sothorms, ERH, EMC, Mathematical modeling

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