

Optimization of Colour Parameters and Drying Efficiency in Osmotically Pretreated Microwave Assisted Drying of Yellow Sweet Pepper (*Capsicum Annuum* L.) Using Response-Surface Methodology

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Abstract Demand for sweet peppers are continued to increase in the market day-by-day due to consumers' willingness to eat raw, minimally processed vegetable products, as part of healthier food habits. Colour is an important attribute because it is usually the first property the consumer observes. At the point of sale, the first impact made by a consumer on a food is its visual appearance. Maintenance of naturally colored pigments in thermally processed and stored foods has been a major challenge in food processing. However, during processing such as drying, vegetables undergo physical, structural, chemical, organoleptic and nutritional changes that cause quality degradation. In this regard, Yellow sweet pepper (*Capsicum annum*. L) were dried in a microwave-assisted drying system with four levels of microwave power (0.35, 0.70, 1.05, 1.4 W/g) and three levels of air temperature (30, 45 and 60°C) at constant air velocity of 1.5 m/s. Color parameters viz. Total Colour Difference (TCD), Browning Index (BI), and Total Carotenoid (Tc), along with drying efficiency and sensory score of dehydrated capsicum were analyzed by means of response surface methodology. Analysis of variance showed that a second-order polynomial model predicted well to the experimental data. The system microwave power level strongly affected quality attributes of dehydrated capsicum. The optimum values of all the responses corresponding to optimum drying conditions were found to be within the range of experimental values. The result showed that a power level of 180 (0.90 W/g) at a process temperature of 60°C were sufficient to draw optimum product as far as quality of processed in food industry is concerned.