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Effects of Pretreatments on Drying Properties and Product Quality of Different *Capsicum* Varieties

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Abstract

Dried *Capsicum* spp. are widely used as ingredients in foods and medicines. However, market restrictions exist for low quality products, mainly based on moisture content and colour. Pretreatment of raw materials before drying is known to enhance drying properties and final qualities of a variety of products. Many studies have shown pretreatments can positively affect drying behaviour and product quality of vegetables ranging from carrots to mushrooms. However, only limited studies have been made for applications to drying of capsicum so far. Therefore, an investigation was made to determine which pretreatments are most recommendable for commercial production of dried *Capsicum*. Fresh *Capsicum* samples of different varieties and quality (shape, colour, sweetness, hotness) were obtained from local markets. Various pretreatments were applied including blanching and soaking in solutions of potassium carbonate, calcium chloride, sodium hydroxide, potassium metabisulfite, citric acid, ascorbic acid, glycerol, trehalose and sucrose. Fruits were dried whole in a through-flow laboratory dryer at 50, 60 and 70°C until constant moisture content. Mass reduction was monitored during the experiments to obtain drying curves of the various treatments. Typical quality parameters such as moisture content, water activity, colour and texture were evaluated for fresh and dried products using standard methods. Based on the results, the affects of the various pretreatments on drying behaviour and product quality are presented. Comparisons are made to other results found in the literature. Recommendations are given as to which pretreatments might best apply for commercial drying of capsicum species and which would be most favourable to combine for future research.

Keywords: *Capsicum*, colour, drying, moisture, pretreatment, product quality, texture