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Effect of pretreatment on the nutritional values and functional properties of tomato powder

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The effects of pre-treatment methods on the nutritional values and functional properties of tomato were examined. The quality of dehydrated tomato is often poor as a result of collapse of structure, discoloration and tough texture. Results revealed that sodium chloride (NaCl) increases water removal in tomato powder during drying and these pre-treatment influences the drying kinetics of tomato, while pretreatment with potassium metabisulphite (KMS) showed slightly more acidity and had the least vitamin C retention. The proximate composition showed that fresh tomato treated with sodium chloride (NaCl) contained 87.14% of moisture, fat 4.76%, fibre 0.05%, ash 5.16%, protein 1.48% and 1.41% carbohydrate. Fresh tomato treated with sodium metabisulphite (KMS) contained 88.02% moisture, fat 5.01%, fibre 0.046%, ash 5.00%, protein 1.38% and 0.54% carbohydrate. The proximate composition showed that dried tomato powder treated with sodium chloride (NaCl) contained 6.41% moisture, fat 1.06%, fibre 0.18% ash 45.78%, protein 12.5% and 34.00% carbohydrate; while dried tomato powder treated with sodium metabisulphite (KMS) contained 6.92% moisture, fat 1.04%, fibre 0.16%, ash 45.74% 12.08% protein and 34.06% carbohydrate. The functional properties of tomato powder revealed that bulk density 0.59% water absorption 126.40%, water solubility 8.40%, foaming capacity 66.75% and dispersability of 8.00%.

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