

Studies on drying and dehydration of bitter gourd slices

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SUMMARY : An experiment was carried out to evaluate the drying and dehydration behaviour of bitter gourd slices. The bitter gourd slices were dried by cabinet and sun drying using different pre-treatments. Out of these different pre-treatments and drying methods blanched bitter gourd slices treated with KMS 0.2 per cent and Salt 2 per cent soaking for 10 min. in solution and dried by cabinet drying showed better retention of chlorophyll content, ascorbic acid, higher rehydration ratio with less moisture, less titrable acidity and less non-enzymatic browning as compared to sun drying.

Key Words : Bitter gourd, Cabinet drying, Sun drying, Pre-treatments

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An increasing trend of improving the dietary standards among the people has been observed in recent years. Vegetables are having importance, mainly because of vitamins, minerals and dietary fibre. Preservation of these vegetables can prevent wastage as well as make them available in lean season. Different methods and equipments are available for drying and dehydration of various vegetables. Pre-treatments are the necessary pre-requisites for successful dehydration process. Pre-treatments check the undesirable physico-chemical and other qualitative changes that may occur during drying process and subsequent storage and there by help to extend keeping quality of dried products. Various pre-treatments employed are sulphuring blanching in hot water, brining, steeping in solutions of certain chemicals like salt, potassium metabisulphite and acetic acid for specific period. The post-harvest losses of bitter gourd are about 25 per cent. Main reason for this much of loss is due to ripening and mechanical damage during transport. Bitter gourd fruits are used as

vegetables in many ways and are quite commonly used in cooked, stuffed, fried forms and the fruits are also pickled, canned and dehydrated (Anonymous, 2010). The preservation methods such as dehydration, steeping (salt solution) and pickling can be successfully adapted to preserve bitter gourd for off-season. The suitability of a particular drying methods and pre-treatment needs to be worked out for specific vegetables and their varieties in order to get product of high quality with consumer acceptability.

EXPERIMENTAL METHODS

The study was conducted in Post Harvest technology Laboratory at University Department of Horticulture, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola during 2010-2011. After the cutting the tips and stem portions, the bitter gourds fruits were cut into 0.5 cm thick slices by knife and then slices were allowed for further pre-treatments of control, blanching for 3 min, blanching for 3 min in soaking in 2 per cent salt and blanching for 3 min. and soaking in solution of 0.2 per cent KMS and 2 per cent salt for 10, 20, 30 min, respectively and 1 per cent and 0.5 per cent solution of acetic acid for 20 min and allowed to dry in cabinet dryer (D₁) for 3 hrs at 60°C and in open sun drying (D₂) (Siva Kumar *et al.* 1991 and Singh *et al.*, 2008). After drying, the dried slices were allowed for

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