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Effect of pre-treatments and drying methods on storage life of bitter gourd slices

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Abstract **:** In this study the effect of pre-treatments and drying methods including storage life of dried bitter gourd slices were evaluated. The best dehydrated product from bitter gourd was prepared by using brining treatments i.e the sample treated blanched and socked in 0.2 per cent KMS + 2 per cent salt solution for 10 min. and dried in cabinet drier, recorded higher retention of ascorbic acid, chlorophyll, rehydration ratio while lower percentage of moisture, titrable acidity and non-enzymatic browning and also recorded higher organoleptic score.

Key words **:** Bitter gourds, Cabinet drying, Sun drying , KMS, Acetic acid

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Bitter gourd (*Momordica charantia* L.) is one of the most important vegetables in the cucurbitaceae family. It is popular due to its unique medicinal and bitter properties with high nutritive value**.** However, it is available during harvesting season due to its perishable nature. Therefore, the present study was undertaken to develop simple technology for preparation of dehydrated product by using various pre-treatments and drying methods (Kalra *et. al.*, 1988).

RESEARCH METHODS

Healthy, tender unripe bitter gourd fruits were washed in clean running tap water and cut into 0.5 cm thick slices manually with a stainless steel knife. The slices (500 g/ treatment / replications) were subjected to various treatments. (Hiremath *et al.*, 2009). An experiment was laid out in Factorial Completely Randomized Design with sixteen treatment combinations consisting of two levels of drying methods (cabinet drying and sun drying) and eight levels of pre-treatments *viz*., control (T_1), blanching in water for 3 min. (T_2), blanching for 3 min. in 2 per cent salt solution (T_3), blanching for 3 min. and soaking solution of 2 per cent salt + 0.2 per cent KMS for 10 min. (T_4), blanching for 3 min. and soaking solution of 2 per cent salt + 0.2 per cent KMS for 20 min. (T_5), blanching for 3 min. and soaking solution of 2 per cent salt + 0.2 per cent KMS for 30 min. (T_6), blanching for 3 min. and soaking solution of 2 per cent salt + 0.2 per cent KMS + 0.5 per cent acetic acid for 20 min. (T_7), blanching for 3 min. and soaking solution of 2 per cent salt + 0.2 per cent KMS + 1 per cent acetic acid for 20 min. (T_8) dried in cabinet drier (D_1) and directly under sunlight (D_2) (Manimegalai and Ramah, 1999).

Dried slices were cooled and packed in 250 guage polyethylene bags sealed and stored in dry and cool place for 80 days for storage study. (Kalra *et al*., 1983) The physical (Moisture and rehydration ratio) and chemical (ascorbic acid, chlorophyll non-enzymatic browning and titrable acidity) and organoleptic parameters (colour, texture, flavour and over all acceptability) observations were recorded at 20 days interval up to 80 days. The physico-chemical parameters were