

Dehydration of okra [*Abelmoschus esculantus* (L.) Moench]

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ABSTRACT

Good quality dehydrated okra which can retain higher colour and texture after rehydration were obtained by blanching in water containing NaHCO_3 (0.5%) for two minutes under electric and shade drying. The recovery of slices dried in this treatment was 8.233 per cent with dehydration ratio of 12.149, rehydration ratio of 6.133 and reconstitutability ratio of 0.505 and OD value of 0.243 for non-enzymatic browning. The organoleptic evaluation of rehydrated okra slices scored 4.25 for colour and appearance, 4.0 for texture and 4.25 for overall acceptability

Key words : Okra, Blanching, Sun drying, Solar drying, Electric drying, Dehydration, Rehydration

Okra (*Abelmoschus esculantus* (L.) Moench), commonly known as okra in India, is grown for its tender fruits in tropics, subtropics and warmer parts of world. It is rich source of Vitamin C (30 mg/100 g), calcium (90 mg/100 g) and iron (1.5 mg/100 g). The high iodine content of fruits is useful in curing goitre disease. Okra fruits are sliced and sun dried or canned and pickled for off-season use. These fruits have very short life and become fibrous in very short time. But fruits retain desirable properties like texture, firmness and reduced sliminess after drying. Because of its restricted availability only in tropics its dehydrated forms are having high importance. In view of this, following study was conducted with the aim to develop suitable pre-treatments and drying method for drying okra.

MATERIALS AND METHODS

Fruits of uniform size were selected; over matured, insect infested fruits were discarded. Fruits were cut into pieces of one cm length and blanched in plain water for 2, 4 and 6 minutes, in water containing 0.25 per cent and 0.5 per cent NaHCO_3 for 2 and 4 minutes, 1.0 per cent calcium chloride and 0.5 per cent KMS for 2 minutes. All the blanched and untreated control were spread on trays in a single layer and placed in an electric drier. The drying temperature was maintained at $65 \pm 2^\circ\text{C}$ and towards the end of drying the temperature was reduced to $55 \pm 2^\circ\text{C}$. Other two sets of treated slices were dried under the sun and shade. Drying was continued till a constant weight of the dried slices was obtained.

Recovery percentage, rehydration ratio,

reconstitutability ratio, time taken for drying and non-enzymatic browning were determined as given below.

Dehydration ratio:

Dehydration ratio was determined by using the formula :

$$\text{Dehydration ratio} = \frac{\text{Weight of raw material}}{\text{Weight of dehydrated material}}$$

Rehydration ratio:

Rehydration ratio of dehydrated samples was calculated from following formula Ranganna (1986).

$$\text{Dehydration ratio} = \frac{\text{Weight of rehydrated sample}}{\text{Weight of dehydrated sample}}$$

Non-enzymatic browning: Non-enzymatic browning was determined by colorimetric method of 440 nm and expressed in terms of OD values (Srivastav and Sanjeevkumar, 1998).

Sensory evaluation of rehydrated okra obtained from dehydrated slices was carried out by a semi-trained panel of judges.

RESULTS AND DISCUSSION

In the present investigation, the recovery percentage of dehydrated okra slices was found significantly high in slices blanched in water containing 0.5 per cent KMS for 2 minutes and slices blanched in plain water for 2 minutes (10.216% and 10.213%) (Table 1). Similar increase in