IJPPHT International Journal of Processing and Post Harvest Technology
Volume 3 | Issue 1 | June, 2012 | 32-35
RESEARCH PAPER

Effect of sugar concentration and duration of osmosis on water loss solid gain and yield in osmotically dehydrated banana var. 'ROBUSTA' and 'NEYPOOVAN'

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Banana is one of the most important fruit crops of India with an annual production of 264.7 lakh tonnes having great socio-economic significance. It is a highly perishable fruit suffers from high post harvest losses to an extent of about 20 to 40 per cent. Therefore, it is necessary to develop shelf stable value added products and the osmotically dehydrated slices have good potential. The inclusion of osmotic process in conventional dehydration has two major advantages of quality improvement and energy savings. An increase in duration of osmosis and syrup concentration increased weight loss, moisture loss and solid gain in the banana slices. In general there was an increase in yield by increasing the concentration of sugar syrup from 50 to 70^{O}Brix as well as duration of osmosis from 4 to 24 hours.

Key Words : Banana, Osmotic dehydration, Air-drying, Weight loss, Solid gain, Yield

How to cite this paper : Thippanna, K.S., Tiwari, R.B., Prashanth, S.J. and Patil, Ravishankar M. (2012). Effect of sugar concentration and duration of osmosis on water loss solid gain and yield in osmotically dehydrated banana var. 'ROBUSTA' and 'NEYPOOVAN', *Internat. J. Proc. & Post Harvest Technol.,* **3** (1) : 32-35.

Research chronicle : Received : *21.12.2011;* Sent for revision : *05.03.2012;* Accepted : *30.03.2012*

Banana (*Musa* spp.) a member of Musaceae family and fruit of tropics is one of the most important fruit crops of India with great socio-economic significance. India leads world in production of banana with an annual production of 264.7 lakh tonnes out of total world production of 950 lakh tonnes (NHB, 2010). It is largely grown in the states of Tamil Nadu, Maharashtra, Karnataka, Andhra Pradesh, Gujarat, Assam, Bihar, Kerala, Orissa, West Bengal and Madhya Pradesh. Most of the banana produced in our country is consumed as fresh fruit. Being highly perishable, this fruit suffers from high post harvest losses to the extent of about 20 to 40 per cent. Development of shelf stable value added products is essential to prevent the losses and also to properly utilize the expected increase in production.

Application of osmotic dehydration process in the production of safe, stable, nutritious, tasty and economical product is gaining more attention. This process involves placing solid food, whole or in pieces in sugar or salt aqueous solution of high osmotic pressure which removes 30-50 per cent of the water from fresh ripe fruits such as mango, pineapple, sapota, papaya, guava and jackfruit (Lewicki and Lenart, 1995). The quality of dried fruits is enhanced to a great extent due to increase in sugar content, reduction of sour taste and prevention of loss of natural flavour along with better retention of nutrients (Ponting *et al.,* 1966). The major advantage of inclusion of osmotic process in conventional dehydration are quality improvement (Pointing *et al.,* 1966; Raoult-wack, 1994) and

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