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Effect of intermittent drying technique on quality of anardana

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ABSTRACT

Pomegranate arils with 2,3 and 4 per cent citric acid treatment were dried by using intermittent drying cycles *viz.*, 1: 0.5, 1 : 1, 1.5: 0.5 and 1.5:1 at temperature 50^0 C and 60^0 C. Cabinet tray drier is used for drying purpose. The pomegranate arils were dried from intial 400% (D.B) m.c. to final 6.75 to 7.50 % (D.B) m.c. The arils without pretreatment were taken as control. The T.S.S., acidity, reducing sugar,non reducing sugar, total sugar were found in the range of 32-1.6 to 36.98, 1.18 to 5.28% 12.72 to 16.21%, 1.86 to 2.27%, 14.87 to 18.14%, respectively. The maximum acceptability of anardana was found in case of 3% citric acid treatment dried at 60^0 C for intermittent drying cycle 1.5 to 0.5h.

Key words : Anardana, Intermittent drying, Pretreatments, Drying cycle, Tempering drying.

Pomegranate (*Punica grantum* L.) has healthy dietic and medicinal properties. It is commericially grown for its acid sweet taste and medicines that can cure dyspepsia (Indigestion) (Darade, 1995). The rind is also used to prepare tooth powder, cosmeties and has potential use in medicines (Chavan *et al.*, 1995). The fresh juice is best for leprosy, heart kidney and tuberculosis patients. Extracts of fruit has antiviral activity (pollo-virus) (konowalchuk and spears, 1976). The production of sweet pomegranate varities is maximum in Maharashtra. But processing of this fruit such as juice, wine, anar-rub, jelly, squash, sharbat, concentrate, anardana is not up to the mark. The present study was undertaken to prepare anardana from sweet variety (Ganesh) grown in Maharastra. The sweet varieties are treated with citric acid to increae acidity of anardana. The anardana has good keeping qualities along with certain advantages such as flavour and stability at room temperature over a long storage period, protection from enzymatic and oxidative spoilage, light weight for transport beside elimination of costly refrigeration. The anardana is used as an acidulant in curries and chutneys in place of tamarind and Amchur in North India.

Anardana is sold at various places through out the country and is also exported, for using in various industries like tannin, coloring etc. (Anonymous, 1969).To prepare anardana, the excess moisture must be removed by a drying process. Various methods have been used by many workers. However, suitable drying method has not yet been developed. An attempt is therefore made by using intermittent drying to obtain good quality anardana.

METHODOLOGY

Fresh fruits of pomegranate (Ganesh) which were disease free, uniform size, fully mature and with good appearance were procured from local market. The fruits were washed with water and the arils were manually separated. The sample was pretreated with citric acid of different concentration *i.e.*2, 3 and 4% .The sample was weighed by using simple balance. To determine the moisture loss a separate sample of 25g was taken in mesh wire and the weight was taken at regular interval by using electric balance.

Four intermittent drying cycles *viz.*, 1:0.5,1:1, 1.5:0.5 and 1.5:1 h (drying : tempering) were used for drying. Drying is carried out at 50^0 C and 60^0 C by using tray dryer. The dryer was 'on' during drying period while it is kept 'off' during tempering period. The treatment of citric acid was given by spraying the measured quantity of cirtic acid on arils and hand mixed thoroughly. The drying was carried out until the desired level m.c. in the arils was reached.

Physico-chemical analysis:

The sample were analysed for contents of moisture, T.S.S., reducing sugar, non reducing sugar, total sugar, titrable acidity. Moisture contents was detemined by using standard oven method. (Chakravarty, 2000). The T.S.S. were determined by hand refracto meter and was expressed in percentage. The titrable acidity of sample was detemined by titration method (Ranganna, 1979). Reducing sugar, non reducing sugar, total sugar were determined by the method of Ranganna (1986).

RESULTS AND DISCUSSION

The chemical properties were determined to asses the quality of anardana. Properties of pomegranate arils are tabulated in Table 1. Chemical properties of Anaradana are tabulated in Table 2 to 6.