

Influence of drying temperature on preparation of kokum rind powder

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ABSTRACT

Garcinia indica is popularly known as kokum in Maharashtra or Indian butter tree belongs to family Guttiferae. It is slow growing slender tree of moderate size having a beautiful conical shape. It bears spherical fruit with arillate seeds. It is cardio tonic and useful for treatment of piles, dysentery, tumors, pains and heart complaints. Fruit has very short shelf life of 2-3 days after ripening and can not be consumed as fresh fruit hence processing is vital. Rind also has much commercial application such as color pigment, wine, concentrate and powder etc. Investigations were made to make powder from kokum rind. The kokum rind after extraction of juice by osmosis was used for preparation of powder. Rind was dried in tray dryer at three temperature levels (45, 55, and 65 °C) and in solar dryer to 5 % moisture. Powder obtained of rind dried at 45 °C in tray dryer found to be having a good acceptable color, texture and taste.

Key words : Kokum, Syrup, Agal, Amsol, Rind powder.

G*Garcinia indica* is popularly known as kokum in Maharashtra or Indian butter tree belongs to family Guttiferae. It is slow growing slender tree of moderate size having a beautiful conical shape. It bears spherical fruit with arillate seeds. The area under Kokum in India is about 1200 ha and production is about 10,200 tonnes. It is found in tropical forests particularly in Maharashtra, Goa, Karnataka, Kerala, West Bengal, and Assam. Kokum fruit has many commercial and medicinal applications. It is used mainly as acidulant in food preparations commonly used as souring agent in food and the rind of fruit is used as daily food item in West coast of maharashtra, Goa and Karnataka. It is cardio tonic and useful for treatment of piles, dysentery, tumors, pains and heart complaints.

Kokum fruit is green in colour at the time of maturity and green colour gets turned in to bright purple red as it is fully ripened. Harvesting period of fruit is of 60 to 80 days commences from mid April to mid June. Fruit has very short shelf life of 2-3 days after ripening and seldom used and its utility starts only after the processing of rind. Rind of fruit is used for preparing of Syrup, Agal (salted juice), Amsol (Wet rind), sol curry etc. Seed contains oil which is solid at room temperature and hence known as kokum butter. Rind also has much commercial application such as color pigment, wine, concentrate and powder etc. Investigations were made to process kokum rind for making powder for round year use of kokum in to different value added products.

Nair (1986) reported that the average weight of kokum fruit at maturity was about 34.01 g. He reported that the specific gravity of kokum fruit decreased from

1.05 at fruit set to 1.04 at mature stage and further decreased to 1.02 at ripen stage. Jadhav *et al.* (2001) observed that the average weight of ripe kokum fruit was 42.51g. The average volume of unripe and ripe kokum fruit were 41.30 and 40.29 ml, respectively and specific gravity observed was 1.033 and 1.019, respectively.

Joshi (1994) reported that the moisture content of mature green and ripe fruit was 82% and 86.5%, respectively. The titrable acidity of mature green kokum fruit was 3.6% and that of ripe kokum fruit was 3.36 %. The TSS of mature green kokum fruit and that of ripe kokum fruit was 12.5 °Brix and 16.5 °Brix, respectively. The pH of kokum fruit was increased from 3.9 at mature green stage to 2.95 at ripe stage. It is also reported that that reducing sugar, non-reducing and total sugars of unripe kokum fruit observed was 5.44, 6.20 and 11.64 %, respectively and that for ripen fruit observed was 2.82, 3.60 and 6.42 %, respectively.

METHODOLOGY

Fresh harvest of kokum fruit were obtained from the Horticulture farm of the Dr. B.S. Konkan Krishi Vidyapeeth, Dapoli in April 2006. Fruits were washed, cut into two halves and seed was removed. Rind was dried using tray dryer and solar dryer. Four drying treatments were used for the drying of rind. These were three drying temperatures 45, 55, and 65°C for Tray dryer and Solar dryer was used as the fourth treatment. Each treatment was replicated thrice. Dried rind was ground into powder by using mixer grinder. The moisture content of kokum powder was measured using hot air oven