

Research Note

THE ASIAN JOURNAL OF HORTICULTURE

Vol. 6 | Issue 2 | December, 2011 | 536-537



Article history:

Received : 09.05.2011

Accepted : 08.09.2011

Estimation of pectin content in Jackfruit (*Artocarpus heterophyllus*)

■ RASHMI PATIL, G.D. JOSHI¹, P.M. HALDANKAR¹ AND MRINAL MORE¹

Associated Authors:

¹Department of Horticulture, College of Agriculture, Dr. B.S. Konkan Krishi Vidyapeeth, Dapoli, RATNAGIRI (M.S.) INDIA

Author for correspondence :

RASHMI PATIL

Department of Horticulture, College of Agriculture, Dr. B.S. Konkan Krishi Vidyapeeth, Dapoli, RATNAGIRI (M.S.) INDIA

Email : mmore634@gmail.com

Abstract : A valuable byproduct that can be obtained from fruit wastes is pectin. Pectins are mixtures of polysaccharides that originate from plants and contain pectinic acids as major components and are water-soluble. Pectic substances are of interest to scientists of postharvest technology because of their important role in maintaining the texture of raw and processed fruits and vegetables. Pectins exist in varying amounts in fruit cell wall and have important nutritional and technological properties, mainly because of their ability to form gels (Westerlund *et al.*, 1991). The fact that majority of pectin produced in the world is extracted from waste (Peels) materials of lime processing industries. It is essential to estimate the pectin from all parts of jackfruit. New source of pectin identified will be helpful to the Indian processing industries in the present context, when we are still importing about 160 tonnes of pectins valued at about ten crores of rupees for use by fruit and vegetable processing industries. Under the circumstances, the present investigation was undertaken on estimation of pectin content in jackfruit.

Key words : Calcium pectate, At harvest, On ripening, Firm flesh, Soft flesh

How to cite this article : Patil, Rashmi, Joshi, G.D., Haldankar, P.M. and More, Mrinal (2011). Estimation of pectin content in Jackfruit (*Artocarpus heterophyllus*), *Asian J. Hort.*, 6 (2) : 536-537.

The pectin is used to manufacturing jams, jellies, marmalades, preserves, etc. It is also useful as a thickening agent for sauces, ketchups, flavoured syrups and as a texturising agent in fruit-flavoured milk desserts. Besides, it finds numerous applications in pharmaceutical preparations, pastes, cosmetics etc. It is also used as an emulsifying agent in the preparation of products like cod liver oil, ice-cream etc. and can be used to increase the foaming power of gases in water and also to glaze candied fruit (GITCO, 1999).

Pectins:

The 50 g of blended sample were extracted with 400 ml of 0.05 N hydrochloric acid (HCl) for 2 hrs at 80 to 90°C. Then volume was made upto 500 ml with distilled water and filtered through No. 4 whatman paper.

To the 100-200 ml aliquot 250 ml distilled water was added and the acid was neutralized with 1 N sodium hydroxide. Then 10 ml of 1 N sodium hydroxide was added in excess and allow to stand over night. Then 50 ml of 1N acetic acid was added and after 5 minutes 25 ml of 1 N calcium chloride solution was added. After allowing to

stand for 1 hr, boiled for 1–2 minutes. Then it was filtered through previously prepared, weighed filter paper and residue remained on filter paper was dried and weighed along with filter paper. From the difference, the pectin was calculated and expressed as per cent calcium pectate (Ranganna, 1986).

The results obtained from the present investigation are summarized below :

Estimation of pectins (as calcium pectate):

The pectin content in different parts of fruits *viz.*, carpel, perigone, rind core and seed were estimated.

The statistical analysis of pooled data presented in Table 1 revealed that the bulbs, perigones, rind, core and seed of firmflesh jackfruit at harvest contained 2.46, 3.38, 5.12, 5.62, 0.58 per cent pectin as Ca-pectate, respectively which on ripening declined to 2.00, 3.03, 4.65, 4.01 and 0.49 per cent, respectively. The bulbs, perigones, rind core and seed of softflesh jackfruit at harvest contained 2.71, 3.52, 5.24, 5.75, 0.70 per cent pectins as Ca-pectate, respectively which on ripening significantly declined to 2.06, 3.24, 4.59, 4.45 and 0.60 per cent, respectively. The