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Authors: Kumari, Swati (/browse?type=author&value=Kumari%2C+Swati)

Advisor: Jha, K. K. (/browse?type=author&value=Jha%2C+K.+K.)

Title: STUDIES ON FLOWERING,, FRUITING BEHAVIOUR AND POST HARVEST QUALITY OF SOME NON--DESCRIPT GENOTYPES OF LITCHI (Liitchii chiinensiis Sonn..)

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Abstract: Litchi (*Litchi chinensis* Sonn) is a juicy fruit originated from southern China. It is the most popular member of family Sapindaceae and sub-family Nephelae which is native of sub-tropical China (Groff, 1921). India is second largest producer of litchi next to China. In India litchi is cultivated mainly in Bihar, Jharkhand, West Bengal, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Haryana and Punjab. Bihar ranks first in area and production of litchi. The edible portion of litchi fruit is a white to creamy coloured translucent pulp that surrounds a glossy and aromatic brown seed. At present many litchi varieties are available and they differ in yield, maturity, ripening period and physico-chemical properties. It is a general observation that better quality fruits fetch good price. Hence comparison of different litchi cultivars need to be explored with a view to find out the most suitable cultivar having quality fruits for fetching lucrative income to the orchard owners. The present study comprised various aspect of different non-descript genotypes of litchi grown at experimental farm of Ranchi Agriculture College, Kanke, Ranchi. As litchi fruits are highly perishable in nature, it suffers from high post harvest losses (upto 50%). Wherever it is grown, its shelf life under ambient conditions is never more than 24 to 72 hours (Kumar et al., 2004). Considering these things, the present study was undertaken to find out the best suitable genotype adapted to this region and to identify best suited cushioning material to enhance the shelf- life of litchi during the year 2015 and 2016. Different observations were taken and the results revealed that the minimum days for panicle emergence (27.12 days), initiation of flowering (53.87 days) and 50% flowering (63.37 days) was recorded in genotype 1. Maximum fruit set (38.47%) and retention (39.73%) of fruits was observed in genotype 1. Yield was found maximum in genotype 1 (109.49 kg/tree). Maximum fruit length (3.49 cm), breadth (3 cm), Weight (25.34 g) and volume (22.90 cc) was observed in genotype 1. Number of tubercles was found maximum in genotype 1 (163.25). Genotype 1 showed maximum aril (69.97%) and juice percentage (51.86%) of fruits. In the same treatment i.e. genotype 1, stone percentage (14.93%) and peel percentage (14.35%) was found minimum. Fruit cracking was found minimum in genotype 11 (13.73%). Results obtained in regard to physico-chemical properties of litchi fruits reveal that maximum TSS (20.300B) and minimum titratable acidity (0.48%) was observed in genotype 1. TSS:acid ratio (42.1) was also found maximum in genotype 1. Whereas, ascorbic acid was recorded maximum with genotype 11 (42.32 mg/100 g of pulp). Total sugar (14.12%) and reducing sugar (10.52%) was observed maximum in genotype 1. B:C ratio was also found maximum in genotype 1. Physiological loss in weight and volume of litchi fruits increased with increase in the duration of storage. However, cushioning of stalkless fruits with shisham leaves stored at freezing temp. resulted in significantly less loss as compared to control and other treatments. Significantly high TSS and ascorbic acid content was recorded under similar treatment. Decline in the acidity of litchi fruits with increase in storage time was observed. TSS: acid ratio was high when fruits were stored at freezing temp. and cushioned with shisham or litchi leaves. No significant effects of treatments tested on total sugar, reducing sugar and non-reducing sugar upto 7th day of storage. However, cushioning of stalkless fruits with shisham leaves stored at freezing temp. resulted in high total sugar content. Hence genotype 1 was most suitable regarding reproductive, physical and physicochemical parameters of fruits. Cushioning of fruits with shisham leaves and storage at freezing temp. enhances shelf life of fruits.

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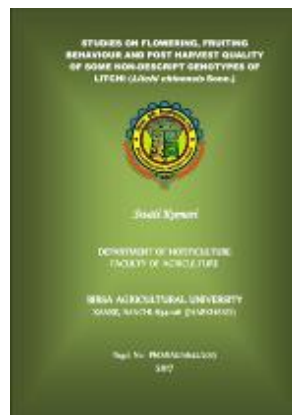
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