



## Research Paper

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# Influence of prepackaging treatments on shelf-life and quality of banana cv. ROBUSTA

■ M. VISALAKSHI, M. THANGARAJ<sup>1</sup> AND K. SOORIANATHASUNDARAM<sup>2</sup>

### Members of the Research Forum

#### Associate Author :

<sup>1</sup>Horticultural College and Research Institute, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA

Email : marjini@gmail.com

<sup>2</sup>Department of Fruits Crops, Horticultural College and Research Institute, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA

Email : fruits@tnau.ac.in

#### Author for correspondence :

#### M. VISALAKSHI

Horticultural College and Research Institute, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA

Email : visaarun@gmail.com

**Abstract :** An experiment was conducted to study the effect of prepackaging of banana cv. ROBUSTA using polythene bags of different gauge thickness and levels of ventilation. Hands of banana cv. Robusta each containing ten fingers were packed in polythene bags of different gauge thickness (100 G, 200 G, 300 G, 400 G and 500 G) and ventilation levels (0%, 0.5%, 1.0%, 1.5%, 2.0% and 2.5%) and stored at ambient temperature. Fruits without any prepackaging were maintained as subsidiary control. Packaging of fruits in polythene bags had significant effect on extending the shelf-life, reducing the PLW, increasing the marketable grade and decreasing the storage rot incidence as compared to control. The results further revealed that among the bagged ones, 500 gauge polythene bags without ventilation recorded the least PLW (4.54%) and an extended shelf life upto 18 days as against only 8 days in control. This treatment also retained the marketability of fruits for longer period than control (89.33 % on 12<sup>th</sup> day). But the fruits in this treatment recorded reduced total soluble solids and sugars. Fruits in the bags with 2.5 per cent ventilation recorded the highest total soluble solids and sugars with a shelf-life of 11.53 days.

**Key words :** Banana, ROBUSTA, Polythene bags, Ventilation, Gauge thickness, Shelf-life PLW

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**B**anana is an important fruit crop globally with the total annual production of 18.70 million tonnes from 565.1 thousand ha with a national average productivity of 33.1 t/ha (APEDA). Maharashtra ranks first in production with 60 t/ha. Banana contributes 37 per cent of total fruit production in India. Banana is a nutritious fruit and leads all other fruits in food value. The post harvest scenario is a matter of serious concern for a developing country like India. Banana being a tropical and highly perishable fruit, the post-harvest losses is always high often rising to an extent of about 20 - 30 per cent. Bananas are typical climacteric fruits, which ripen with increasing rate of respiration and ethylene production. The perishability of the fruit is attributed to the adverse physiological changes viz., loss of weight due to respiration and transpiration, softening of flesh and loss of resistance to microbial attack. Unlike many other fruits, banana is not a seasonal fruit in nature and is available in fairly large quantities

throughout the year. The benefits of increased production will not be realized unless it is duly accompanied by advanced storage, packaging, and transport techniques. The aim of successful storage of fruits is to delay the ripening process, reduce disease incidence and retard the biochemical deterioration in order to enhance their shelf-life.

## RESEARCH METHODS

In the present study, attempts were made for banana cv. Robusta at the Horticultural college and Research Institute, Tamil Nadu Agricultural University, Coimbatore with a view to improve the shelf life and quality for both distant domestic and export market. The experiment was conducted using polyethylene bags of different gauge thickness and levels of ventilation. Hands of banana cv. ROBUSTA each containing ten fingers were packed in polyethylene bags of different gauge thickness (G<sub>1</sub>-100G, G<sub>2</sub>-200G, G<sub>3</sub>-300G, G<sub>4</sub>-400G, G<sub>5</sub>-500G) and