

## Effect of ethylene absorbent and different packaging materials on storage life of banana

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The experiment was conducted to assess the shelf life of unripe banana with ethylene absorbent stored in different packaging materials viz., HDPE, polyethylene and polypropylene (non-perforated) bags of different gauges. Significantly minimum weight loss, spoilage, TSS and Pulp/peel ratio recorded by fruits stored in 250 gauged non-perforated HDPE bags followed by 175 gauges non-perforated HDPE bags with ethylene absorbent at all the sampling dates. However, highest acidity was recorded at all the storage period due to the same packaging materials. The spoilage was recorded on 15 days of storage to the tune of 2.15% and 1.054%, respectively by fruits stored in 175-gauged HDPE bags and 250-gauged HDPE bags. The control fruits were spoiled on 9<sup>th</sup> day.

Key words : Ethylene absorbent, TSS, Cumulative weight loss, Pulp/peel ratio, Titratable acidity.

### INTRODUCTION

Banana (*Musa paradisiaca* L) is one of the most delicious, refreshing and nourishing fruit of the world. Banana is a commercially important global food commodity after rice, wheat and milk in terms of gross values of production and of great socio-economic significance. India contributing 26% of the total fruit production, with a growing appreciation for the role of banana in nutrition and medicinal properties added with high economic returns per unit area, sustainable income to marginal farmers. In India banana is the predominant and popular among the people. Though it is called as poor man's apple, it is liked and consumed by rich people also. The higher concentration of production is in tropical America and India is second largest among the banana growing country. The major banana growing areas in India lies in the state of Kerala, Maharashtra, Tamilnadu, Andhra Pradesh, Gujarat, Karnataka, Assam and West Bengal of which Kerala, Tamilnadu and Maharashtra occupying 49.33% of total area under this crop. Jalgaon district is the major Banana growing area having about 34600 ha of land under banana cultivation producing over 8,60,200 tonnes of banana every year.

To make banana growing as a profitable business it is necessary to produce, transport and market quality banana. When fruits approach maturity, they release ethylene. Ethylene promotes the ripening of fruits. Among the many changes that ethylene causes is the destruction of chlorophyll. With the breakdown of chlorophyll, the

red and / or yellow pigments in the cell of the fruits are unmasked and the fruit assumes its ripened color. It can also be very harmful to many fruits, vegetables, flowers, and plants by accelerating ageing process and decreasing the product quality and shelf life. Thus ethylene plays an essential role in the ripening of climacteric fruit. Banana being climacteric fruit, control of ethylene will solve many of the problems; there are different stages where ethylene absorbent can be used with the advantage.

In the field, if bunches are equipped with ethylene absorbent prior to 70% maturity, the inception of climacteric can be prolonged and for long distance transport a quality banana at 90% to 95% maturity levels can be harvested and transported safely. Use of ethylene absorbent at such temporary storage will postpone the untimely climacteric process. Use of ethylene absorbent during transport will retard the chances of untimely ripening during transport. With a view to make this technology available to regional farmers at a reasonable price, to enhance shelf life of banana by using ethylene absorbent and storing banana in different packaging materials.

### MATERIALS AND METHODS

The experiment on storage of unripe banana was conducted with ethylene absorbent and different packaging materials. Fruits were brought from the village Pandhari near Anjangaon (Surji) in the month of May, 06. The variety of the fruits was Grand-9. After cleaning with

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