

Effect of wax, chemical and biofungicide on post harvest storage quality of banana cv. Rasthali

A. NITHYA DEVI* AND T. ARUMUGAM¹

Department of Horticulture, Horticulture College and Research Institute, Tamil Nadu Agriculture University, COIMBATORE (T.N.) INDIA

ABSTRACT

In fruits like banana, post harvest metabolic changes are of particular importance because the fruits are harvested at unripe and inedible stage and the quality of fruits ultimately depends upon the post harvest handling and storage methods. The present study was taken up primarily with a view to evaluate the effects of coating the fruits with different wax concentrations and fungicides on the storage behaviour of banana cultivar *Rasthali* under ambient and cold storage. The green life and quality can be extended by treating the fruits with eco friendly bio fungicide (*Trichoderma harzianum*) along with 8 % wax. Fruits dipped in 8 per cent wax recorded the higher level of total soluble solids (24.21 °B) and ascorbic acid (19.13 mg/100g). Among the treatment combinations, the fruits treated with bio fungicide had maximum total soluble solids (24.76 °B) and ascorbic acid (17.92 mg/100g) on 16th day. Wax coating in combination with bio fungicide recorded the highest firmness (1.60 Kg cm⁻²) even in the ripening stage than the unwaxed fruits (0.92 Kg cm⁻²). The loss of firmness in wax coated fruits was very slow and minimum.

Key words : Banana, Wax, Benomyl, Bio fungicide, Storage quality.

INTRODUCTION

India is the largest producer of bananas in the world. Lack of proper post harvest handling techniques and infrastructural facilities poses a hurdle for export. A problem with tropical fruits like banana is that they have no built in mechanism to help them survive under cold temperatures.

Absence of these genetic 'design features' make them difficult to store for long periods under ambient condition (Tim Griggs, 1989). Until recently most research on post harvest handling in bananas had focused on Cavendish cultivars. With their ability to travel well, these cultivars have dominated the world's banana market. However with the adoption of different storage technology, other locally grown choice cultivars can now be exported to other countries more cheaply aiding the active participation of local companies in the banana export trade (Adlai, 1989). A study was therefore conducted with the objective to explore the effect of waxing and fungicides (*Trichoderma harzianum* and Benomyl) on shelf life, starch content, firmness and ethylene evolution in banana cv. *Rasthali*. The present study aims at increasing the green life and quality of banana cv. *Rasthali*

by standardizing the optimum wax concentration, post harvest treatment with antagonistic fungi, chemical fungicide and storage conditions.

MATERIALS AND METHODS

Investigations on post harvest treatments and storage of banana cv. *Rasthali* (syn. Silk – AAB) was undertaken at the Post harvest Laboratory, Horticultural College and Research Institute, TNAU, Coimbatore.

An experiment with 12 treatments having 3 replications was laid out in FCRD under ambient condition. The temperature and relative humidity inside the laboratory during the experimental period were monitored daily using a digital temperature and RH meter. Fruits used in the study were collected from the banana wholesale market, Coimbatore. In all the experiments, uniform sized mature fruits free from bruises or blemishes were used. Wax formulation was prepared using edible waxes like carnauba wax and bees wax using emulsifiers and stabilizers as per the CFTRI recommendation.

The fruits from the bunch were dehandled and the second, third and fourth hands were used in the experiments. The hands were first washed in cold water (15°C) to remove latex strains, soil particles, and floral remnants and also to remove field heat from the fruits. Chlorine in the form of sodium hypochlorite solution (150 ppm) was added during hydro cooling as a disinfectant.

* Author for correspondence.

¹ Horticultural Research Station KODAIKANAL(T.N.) INDIA