STUDIES ON EXTENDING POSTHARVEST LIFE OF "EMBUL" BANANA IN LOW COST, EVAPORATIVE COOLING SYSTEM

A PROJECT REPORT PRESENTED

BY

M.D. LOKULIYANA

to the

POSTGRADUATE INSTITUTE OF SCIENCE

in partial fulfillment of the requirement

for the award of the degree of

MASTER OF SCIENCE

of the

UNIVERSITY OF PERADENIYA

SRI LANKA

January 2002

ABSTRACT

The use of a brick wall evaporative cooler for extending the storage life of bananas was compared with a conventional cold room and ambient storage. Bananas stored at 13.5 ^{0}C did not start ripening process until 16 days of storage. Internal temperature 24-27 ^{0}C and humidity >97% RH was achieved in the evaporative cooler. Although fruits stored in evaporative cooler ripened earlier than low temperature stored banana the storage life extended compared to that in ambient stored fruits. Stored fruits in evaporative cooler showed reduced weight loss, delay in fruit ripening, improved peel colour and higher over-all acceptability. In vitro studies showed activated charcoal absorb ethylene successfully. However when activated charcoal and $KMnO_4$ included in banana crates the efficiency of absorbing ethylene would have been reduced. Partially ventilated system used to store bananas and high humidity inside the chamber would have reduced the ethylene absorbance by scrubber. However, inserting ethylene scrubber in a closed system or by circulating the air over the scrubbers would increase the efficiency of ethylene absorbance. Better quality of ripened bananas stored in evaporative cooler compared to that of ambient showed the method can successfully be adopted to store bananas at low cost.