IDENTIFICATION OF MINIMUM ETHRAL CONCENTRATION AND EXPOSURE TIME ON INDUCE RIPENING OF 'EMBUL' BANANA (*Musa* spp)

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirements for the award of
Bachelor of Science in Export Agriculture

by

GAYATHRI VEERASINGAM

Department of Export Agriculture
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka

2016

ABSTRACT

Climacteric fruits, including bananas are frequently harvested at 'commercial maturity' stage that is considered, typically in a hard green but mature stage just before ripening has initiated and are subsequently allowed to ripen artificially. For induce the ripening process the use of ethylene gas is the most suitable way as that results, high quality fruits. Besides, the less availability and high price of ethylene gas, in most developing countries they using the commercially available ethephon ($480gL^{-1}$).

Ethylene released from ethral could be used as a ripening agent in 'embul' banana. Bananas treated with ethephon, ripen faster with attractive colour and flavour but the shelf life and nutrient values decrease. Considering its hazardous aspects, the use of ethephon must be strictly monitored and controlled. Because of the high demand in the local market and export quality fruits, the reduction of exposure time on induce ripening of banana is also necessary.

To minimize the chemical exposure to the fruits, this study was carried out to examine the ripening index of 'embul' banana under low concentration and low exposure time than the recommended concentration ($1\ mLL^{-1}$) and exposure time (24 hours) of ethephon $480gL^{-1}$ on induce ripening of 'Embul' banana. According to the results of the present study indicated that the $0.5\ mLL^{-1}$ ethral concentration with 24 hours exposure time gives a favourable quality than the $1mLL^{-1}$ ethral concentration with 24 hours exposure time, recommended by Department of Agriculture. For the commercial optimisation of the storage life and for the minimization of chemical exposure to the fruits, the $0.5\ mLL^{-1}$ ethral concentration with 24 hours treatment should be favourable. It can be easily applied in large scale as a form of ethylene gas, with no possible occurrence of health hazards and as cost effective method.