

**ASCORBIC ACID AND ANTIOXIDANT LEVEL OF  
CEYLON OLIVE (*Elaeocarpus serratus*) AS  
AFFECTED BY VARIETY, STAGE OF MATURITY  
AT HARVEST AND DIFFERENT METHODS OF  
PRESERVATION**

A dissertation submitted to the  
Faculty of Animal Science and Export Agriculture  
Uva Wellassa University

In partial fulfillment of the requirement for the award of the  
Degree of Export Agriculture

By

**RASNAYAKA MUDIYANSELAGE DINESHA  
DUSHYANTHI MENIKE RASNAYAKA**

**Export Agriculture Degree Programme  
Faculty of Animal Science and Export Agriculture  
Uva Wellassa University of Sri Lanka**

**2010**

## ABSTRACT

There has been growing interest in the beneficial health effects of edible fruits as well as certain beverages. Their protective mechanisms against chronic-degenerative diseases are thought to be attributed to the presence of natural antioxidants, minerals and vitamins. This study attempts to investigate the dynamics of changes in ascorbic acid, antioxidant activity, pH, titratable acidity and Total Soluble Solids (TSS) in two varieties of Ceylon Olive (*Elaeocarpus serratus*); Pol weralu and Heen weralu and to evaluate the quality of Ready to Serve (RTS) drinks prepared from both varieties. The research was conducted at Food Research Unit, Gannoruwa from February to June, 2010 using Complete Randomized Design (CRD). RTS drinks were evaluated for sensory attributes using Friedman test. The level of ascorbic acid was measured using 2, 6-Dichlorophenol-Indopenol (DCPIP) method. Methanolic extracts of fruits and RTS drinks were analyzed by DPPH (1, 1-diphenyl-2-picrylhydrazyl) antioxidant assay. The highest content of ascorbic acid was detected in mature fruits of Heen weralu (66.15 mg per 100 g), while it was lowest (27.30 mg per 100 g) in "Pol weralu" at ripe stage. Ascorbic acid content of RTS drink (Pol weralu) and RTS drink (Heen weralu) were 13.3 mg per 100 ml and 27.65 mg per 100 ml respectively as compared to 27.30 mg per 100 g and 43.40 mg per 100 g in ripe fruits. The highest value of TSS (17.05) and pH (4) was observed in full ripe Heen weralu. The IC<sub>50</sub> (inhibition concentration 50) which represent the antioxidant activity of the methanolic extracts of Pol weralu and Heen weralu were 6.68 and 5.54 mg ml<sup>-1</sup> respectively. Result confirmed that among two varieties, Heen weralu was best in terms of antioxidant activity for both fruit and RTS drink. RTS drink (Heen weralu) was the best sample which showed the highest rank sum value for sensory attributes.