

## **Cell ultrastructure and peel nutrient content of neck zone in six cultivars of *Musa* sp. fruit during ripening.**

### **ABSTRACT**

A study was carried out to determine the cause of weak neck in *Musa* sp. by observing the cell structure and peel nutrient content. Two cultivars with weak neck problem were compared to four cultivars without weak neck problem. For this study, cultivars Rastali and Awak were identified as cultivars which have weak neck problem whereas cultivars Lemak Manis, Abu, Berangan and Tanduk were without weak neck problem. Fruits with the same level of maturation were obtained from the local market. Scanning Electron Microscope (SEM) was used to observe the cellular structures. Ten elements N, P, K, S, Ca, Mg, Fe, Mn, Zn and B were analyzed from the peel. Cell Width (CW), cell Wall Thickness (WT) and CW/WT ratio were determined. Cells of Rastali were found to collapse completely after ripening while cells of Awak became thinner, making these two cultivars prone to weak neck. The cells of the other four cultivars became elongated and cell wall became thicker after ripening, thus not showing weak neck symptom. Concentrations of all the 10 elements in the six *Musa* sp. cultivars were found to be above the critical levels. It was concluded that weak neck in cultivars Rastali and Awak was caused by disintegration, collapse and thinning out of cells along the neck region and not due to nutritional deprivation. Calcium deficiency was not the cause of weak neck in these *Musa* sp. cultivars.

**Keyword:** *Musa* sp.; Ultrastructure; Weak neck; SEM.