

## **Comparative Study of Selected Cocoa Clones (PBC 154, PBC 123, MCB 2) From Kota Marudu for Antioxidant Capacity, Total Phenolic and Flavonoid Content**

### **ABSTRACT**

Cocoa beans (*Theobroma cacao* L.) have been a subject of interest among researchers for their bioactive properties. The bioactive properties of cocoa beans are mainly contributed by flavonol compounds that possess antioxidant properties. The antioxidant properties of cocoa beans help fight free radicals and prevent or delay oxidative stress-related illness. The total phenolic content, total flavonoid content, and antioxidant activity of selected cocoa bean clones in Kota Marudu, Sabah, namely PBC 154, PBC 123, and MCB 2, were evaluated in this study. The extraction of cocoa beans was carried out with water and 70% ethanol. In comparison to water extract, the ethanolic extract produced better results. The ethanolic extract of cocoa MCB 2 had the highest antioxidant capacity, while cocoa PBC 154 had the least. The total phenolic and flavonoid content of both aqueous and ethanolic extracts showed a similar trend, with MCB 2 having the highest concentration and PBC 154 having the lowest.