

## **Vegetable waste composting: A case study in Kundasang, Sabah**

### **ABSTRACT**

Composting is considered agronomically, ecologically, and practically beneficial, with the end product being an organic fertilizer or soil conditioner rich in nutrients for the soil. This study aims to investigate the effects of adding chicken manure (CM) to vegetable waste (VW) and rice husk (RH) composting. This is a pioneering study on Kundasang composting, as well as addressing the vegetable waste problem in the community. The composting process was studied for 20 days in a 37-L laboratory composter reactor box with passive aeration. Four mixtures were investigated, each with a VW: RH (1:2) ratio and a different additive of CM (0%, 1%, 2.5% and 5%). The composting process's performance shows that Mix-3 (2.5 % CM) is ideal compared to other mixtures, with the highest temperature achieved at 41°C as early as day 1, resulting in a 28.12% organic matter (OM) loss. The OM loss value results show that Mix-3 (28.12%) > Mix-2 (26.14%) > Mix-1 (16.55%) > Mix-4 (13.33%). The maximum temperature reached was 41°C, and the Mix3(41.3°C)>Mix-1(41.1°C)>Mix-2(41.0°C)>Mix-4(40.7°C) and decreasing near to ambient. The reduction percentage shows Mix-3 (13.92%) > Mix-2 (13.45%) > Mix-4 (9.24%) > Mix-1 (8.93%). Thus, with the optimum addition of chicken manure, the degradation is reflected in the high moisture content reduction rate. In conclusion, using CM as an additive has a significant impact on composting VW.