

Production of Dairy Cow Pellets from Pineapple Leaf Waste

N. Buliah¹, S. B. Jamek, A. Azilah¹ and R. Abu^{1}*

¹Faculty of Chemical & Natural Resources Engineering, Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300 Gambang, Kuantan Pahang, Malaysia.

rohanaa@ump.edu.my

Abstract

Pineapple leaf waste is a by-product generated after pruning activity at farm sites. Usually, the waste is thrown away and left at the farm sites until it decomposes naturally¹. One of the possible solutions in handling the pineapple leaf waste is by converting it into animal feeds. Interestingly, feeding dairy cows with pineapple waste significantly increase the production of milk due to its fiber content². Hence, the objective of this project was to convert the pineapple leaf waste into feed pellets for dairy cows. The pineapple leaf waste was collected from Pekan Pina Sdn. Bhd in Pekan, Pahang. The waste was analyzed for its nutritional values (protein, fiber, carbohydrate, fat and sugar) using standard AOAC methods before converting into pellets by densification process³. The physical properties of pellets such as friability, bulk density, true density, hardness and porosity were determined. From the analysis, the pineapple leaf waste has high fibre content which may help increasing the milk production in dairy cows. The ranges of pellet's friability, bulk density, true density, hardness and porosity were between 0.71–1.51 %, 300.56–343.33 kg/m³, 1474.33–1513.67 kg/m³, 1.05–3.9 kg/cm³ and 76.71–80.14%, respectively.

Keywords: biomass; pineapple leaf waste; animal pellets; densification process