

Session Title: Biorefinery

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Abstract title: Oil Palm Trunk Utilization as Potential Feedstock for Biorefinery Development in Indonesia

In Indonesia, the most potential bioresources for biorefinery is oil palm. Oil palm (*Elaeisguineensis*) is widely planted for its edible oil that reach 11.91 million hectares (2016). The palm starts bearing oil-contained fruits 2.5 years after planting, its productivity becomes lower after 20-25 years, making it necessary to fell down the old palms and replant new seedlings. When replanting, most of the old palms are discarded or burnt at the plantation site. Efficient ways of utilizing oil palm trunks (OPT) are developing the unconventional way to process the old trunks. The prominent achievement of this assessment is to set up the design of dry processing system for separating of the starch-rich flour and fiber rich powder. The potency of the starch-rich flour is about 22-33 percent of total dried biomass containing total sugar not less than 72%, while the other part is containing 4300 to 4800 kcal of energy per kg biomass powder. The starch-rich flour could be easily converted to bioethanol, organic acids, as well as polyol.

Keywords: oil palm trunk, dry processing, starch-rich flour, biomass powder