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Effect of Cutting Interval on Dry Matter Yield and Botanical Composition of Cover Crops under the Oil Palm Plantation

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Abstract

The increasing area of oil palm plantation in the Jambi Province, especially at Batanghari Regency, Indonesia offers an opportunity for integrating oil palm with livestock production systems. Cover crops for erosion control and weed suppression can also be utilized as fodder sources, since leguminous species such as *Pueraria javanica* and *Centrosema pubescens* are generally sown under the palm trees. However, with increasing age of oil palms light penetration to the ground will be reduced. Therefore, appropriate cutting management should be evaluated in order to obtain the optimum forage yield. Cutting cover crops at different stages will influence the growth of above ground biomass and the botanical composition of cover crops species.

Sixteen single-tree-plots of oil palm that were about three years old, were arranged as 2 factorial randomized complete block design with four replicates. The first factor was stratum (shade and sun), the second was cutting interval: 30, 60, 90 and 180 days after the initial trimming. The latter was the control.

Dry matter production showed strong response to cutting interval as well as stratum, but no interaction was found. A cutting interval of 30 days was the best cutting interval in terms of dry matter production of cover crops. The yield was double as compared to the control. Dry matter production in the shade was lower than in the sun. It obtained only 42 % of total dry matter production. The botanical composition assessment revealed that cutting interval affected the botanical composition of cover crops. With increasing cutting frequency the abundance of grass species increased as compared to legume and weed species. The cover crop vegetation under 30-day cutting interval was dominated by grass species that are resistant to frequent cutting such as *Axonopus compressus*, *Digitaria ciliaris*, *Ottochloa nodosa* and *Paspalum dilatatum*.

Keywords: Botanical composition, cover crop, cutting interval, dry matter yield, integrated oil palm livestock system