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The Effect Treated of Oil Palm Trunk by Ligninase Thermostable to Improvement Fiber Quality as Energy Sources by Ruminant

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Abstract : The research purposed to find out interaction between oil palm trunk concentrations and ligninase doses to increase the fiber quality of oil palm trunk before using as animal feeding. The oil palm trunk treated by ligninase aimed to hidrolyzed of lignin as cell wall through separation of fiber fraction such as: cellulose, and hemicellulose. The design used in this study was a completely randomized design (CRD) factorial using 2 factors: factor A consists of three levels of ligninase enzyme concenrations A1: 250 units/kg, A2: 500 units/kg,and A3: 750 units/kg. Factor B is the concentration of oil palm trunks B1: 40%; B2: 60% were repeated 3 times. The results showed that there was highly significantly effect of interactions ($P<0.01$) between levels of ligninase enzyme (factor A) with the concentration of oil palm trunks (factor B) to ADF, NDF, cellulose, hemicellulose and lignin contents.The research can be concluded that the optimum concentration of oil palm trukns was 60% (v/w) and 750 U/kg of ligninase that were improved of the fiber fractions quality. The best fiber fraction quality with 60.75; 76.68; 13.02; 52.43 and 5.6% DM for ADF, NDF, cellulosa, hemicellulosa and lgnin respectively.

Keywords : Oil palm trunk, ligninase, NDF,ADF, cellulosa,hemicellulosa, fiber and lignin, enzyamtic hydrolysis, ligninase, ruminant, energy.

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