Biodegradasi jerami pado oleh penicillium spp. dengan variasi ukuran partikel jerami=Biodegradation of rice straw using penicillium spp. wth particle size variation in biopulping process

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Abstrak

Biodegradation of rice straw was performed by solid state fermentation using two isolates penicillium to assess degradation time and effect of particle size on the growth and enzyme production. Biodegradation of the straw was conducted over 12 days using three straw particle size of 4, 8, and 12 mesh. The result showed that particle size effects the degradation process of rice straw. Delignification influence by activity of ligninase optimum size of 12 mesh with the degradation time in 2-4 days. Penicillium sp1 produced ligninase with the highest activity 1140 U/mL (lignin content 55.2%) and cellulase 140 U/m (content of cellulose 27.6%)., while highest ligninase and cellulase activity of penicillium sp2. 882 U/mL (lignin content 49.4%) and 102 U / mL (content of cellulose 15.9%).