

Application of Catappa Leaf Extract (*Terminalia catappa*) and Fermented Coconut Water With Various Concentrations for Controlling Nut Grass (*Cyperus rotundus*)

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ABSTRACT

Catappa leaves contain saponins, alkaloids, tannins, and flavonoids with allelopathic properties, along with fermented coconut water that includes ethanol, which can oxidize into acetic acid, making it useful as a bioherbicide. This study aims to find the optimal combination of catappa leaf extract and fermented coconut water for controlling nut grass. Conducted in a greenhouse at the Experimental Garden of UPN “Veteran” Yogyakarta, the research utilized a Completely Randomized Design (CRD) with two factors: catappa leaf extract concentrations of 25%, 50%, and 75%, and fermented coconut water concentrations of 10%, 20%, and 30%. Data were analyzed using ANOVA with significance level of $\alpha = 5\%$, followed by DMRT testing at 5%. Parameters measured included plant height (cm), fresh weight (g), dry weight (g), growth rate (cm), and phytotoxicity. Results showed no interaction between catappa leaf extract and fermented coconut water. However, the combinations induced phytotoxicity, suppressed growth rates, and effectively controlled fresh and dry weights. The best results were achieved with 50% and 75% concentrations of catappa leaf extract and 20% and 30% concentrations of fermented coconut water.

Keywords: Catappa leaves, fermented coconut water, nut grass