

Effectiveness of Patikan Kebo (*Euphorbia hirta*) Extract as Bioherbicide on Germination and Growth of Bermudagrass (*Cynodon dactylon*)

By: Anjani Winda Khalita

Supervised by: Siwi Hardiastuti Endang Kawuryan

ABSTRACT

Bermudagrass (*C. dactylon*) is a perennial weed with rapidly growth and spread. Extracts of Patikan Kebo (*E. hirta*) contain allelochemical compounds that can inhibit enzyme activity and cell division during the germination and growth of *C. dactylon*. Methanol was chosen as the solvent in the extraction process due to its ability to extract phenolic and flavonoid compounds. This study aimed to determine the effectiveness of *E. hirta* extracts at various concentrations on the germination and growth of *C. dactylon*. The research was conducted from April to June 2025 at the Experimental Garden of the Faculty of Agriculture, UPN “Veteran” Yogyakarta, using a Completely Randomized Design (CRD) with a single factor consisting of 7 treatments and 3 replications: control (no treatment), *E. hirta* extract at 10%, 15%, 20%, 25%, 30%, and 35%. The obtained data were analyzed using ANOVA at a 5% significance level, followed by DMRT at 5%. The results showed that *E. hirta* extract effectively inhibited the germination and growth of *C. dactylon*. Concentrations of 25%, 30%, and 35% have the same effect on weed germination time about 9,00 – 10,67 days, weed germination percentage about 56,67 – 66,67%, weed fresh weight about 0,17 – 0,32 g, weed dry weight about 0,07 – 0,12 g, and weed mortality percentage ranged from 62 – 67%. A concentration of 35% resulted in a weed control efficiency value of 86%, which is classified as efficient.

Key words: *Cynodon dactylon*, *Euphorbia hirta* extract, weed germination, and weed growth