

**EFFECTIVENESS OF PRE-PLANTING HERBICIDES GLYPHOSATE
AND PARAQUAT ON WEED SUPPRESSURE, GROWTH AND YIELD OF
CORN (*Zea mays* L.) USING NO-TILLAGE SYSTEM**

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ABSTRACT

Corn (*Zea mays* L.) is an economical food commodity. One of the factors that affect corn production is the tillage system. A problem that arises in implementing no-tillage system is the presence of weeds before planting which can be solved by herbicide application. The study aimed to determine the effective doses of pre-planting herbicides in suppressing weeds and providing the best growth and yield on corn using no-tillage system. The study was conducted in Mulyodadi village, Bambanglipuro district, Bantul regency. The experimental design used one-factor randomized complete block design (RCBD) with 8 treatments, namely doses of glyphosate: 1 L.ha⁻¹ (P1), 1.5 L.ha⁻¹ (P2), 2 L.ha⁻¹ (P3), doses of paraquat: 1 L.ha⁻¹ (P4), 1.5 L.ha⁻¹ (P5), 2 L.ha⁻¹ (P6), weeding at 21 DAP + 42 DAP (P7), and control (P8). The observed parameters were weed population per species, weed dry weight per species, summed dominance ratio (SDR), weed control efficiency, herbicide phytotoxicity, plant height, number of leaves, cob weight, cob length without cornhusk, dry cob weight without cornhusk, dry grain weight per plot, and dry grain weight per hectare. Data were tested using analysis of variance at 5% level followed by least significant difference (LSD) test at 5% level. The results showed that the application of glyphosate herbicide dose of 2 L.ha⁻¹ was quite effective in controlling weeds with weed control efficiency of 73.44% at 14 DAP. Herbicide doses of glyphosate 1,5 L.ha⁻¹ and 2 L.ha⁻¹ gave higher yields on cob weight with husk, dry cob weight without cornhusk, dry grain weight per plot, and dry grain weight per hectare.

Keywords: corn, weed, glyphosate, paraquat, no-tillage