

ABSTRACT

Nephrolepis biserrata is one of the dominant weed species found under oil palm canopies, which interferes with plant growth by competing for nutrients, water, and light. This study aimed to evaluate the effectiveness of glyphosate and paraquat herbicides in controlling this weed. The research was conducted using a completely randomized design (CRD) with a non-factorial pattern, testing four dosage levels for each herbicide: glyphosate (0, 720, 1.104, and 2.160 g/ha) and paraquat (0, 552, 1.104, and 1.656 g/ha). Observed parameters included weed injury percentage, regrowth ability, plant height, number of leaves, number of branches, and dry weight, recorded at 15, 20, 25, 30, and 35 days after application (DAA). The results showed that glyphosate, as a systemic herbicide, was highly effective in completely killing the weeds from a dose of 720 g/ha onward and preventing regrowth. In contrast, paraquat, a contact herbicide, acted faster but was less effective in suppressing regrowth. Higher doses of both herbicides increased their effectiveness, but glyphosate proved biologically more efficient at intermediate doses. Both herbicides were effective, but glyphosate was more suitable for long-term weed control.

Keywords: Glyphosate, herbicide, *Nephrolepis biserrata*, paraquat, weed control.