

ABSTRACT

Weeds are undesirable plants that pose challenges to crop productivity, especially in oil palm plantations. One of the dominant weed species commonly found in these areas is *Ageratum conyzoides* L, known locally as bandotan. Effective control of bandotan weeds can be achieved using glyphosate (a systemic herbicide) and paraquat (a contact herbicide). This research aimed to evaluate the response of *Ageratum conyzoides* L to varying doses of both herbicides. The study was conducted at the Cot Girek Unit of PT Perkebunan Nusantara IV Regional VI and the Laboratory of the Faculty of Agriculture, Universitas Malikussaleh from January to March 2025. A non-factorial Randomized Block Design (RBD) was employed with five replications. Glyphosate was applied at 0, 980, 1,452, and 2,176 g/ha, while paraquat was applied at 0, 560, 1,120, and 1,680 g/ha. Observations included weed height, leaf count, stem diameter, fresh and dry biomass, and weed mortality rate. Findings revealed that both glyphosate and paraquat significantly affected weed growth and morphology. Higher doses led to reduced plant height, fewer leaves, smaller stem diameter, and lower dry weight. A complete absence of regrowth was noted at the final observation stage. The optimal dose for effective weed control was identified as 980 g/ha for glyphosate and 560 g/ha for paraquat.

Keywords: *Ageratum conyzoides*, dose, glyphosate, oil palm trees, paraquat.