

ABSTRACT

Weeds are a major problem in coffee plantations because they compete for nutrients, water, and sunlight, reducing coffee plant productivity. One of the weeds that is difficult to control is *Crassocephalum crepidioides* (Sintrong). This study aims to determine the effectiveness of different doses of glyphosate and paraquat herbicides in controlling Sintrong weeds. Sintrong weed seeds were randomly collected from a coffee plantation in Bener Meriah. The weeds were planted in 15 cm × 25 cm polybags using top soil. The research used an experimental method with a Non-factorial randomized block design (RBD), testing four different doses of each herbicide. The observed parameters included weed toxicity percentage, weed control percentage, regrowth ability, and dry weight of resistant weeds. The results showed that glyphosate at a dose of 1,281 g/ha was the most effective, leading to high weed control and minimal regrowth, although resistance was observed at 854 g/ha. Paraquat at 900 g/ha was highly effective, achieving 100% weed mortality within 15 days after application. However, a dose of 600 g/ha was already effective, suggesting that higher concentrations may not be necessary and should be reconsidered to minimize environmental impact. This study concludes that rotating herbicide use is essential to prevent weed resistance, particularly for glyphosate.

Keywords: *Crassocephalum crepidioides*, Glyphosate, Paraquat, Weed control