

ABSTRAK

Zulfikar. Compatibility Analysis of Metolachlor and Pendimethalin for Weed Control in Arabica Coffee Plants (*Coffea arabica*) Supervised by JAMIDI and BAIDHAWI.

Losses caused by the presence of weeds in an agricultural business are often associated with the ability of weeds as strong competitors for plants to obtain water, nutrients, sunlight and growing space. Mixture of metolachlor and pendimethalin herbicides is expected to control important weeds of various classes in coffee plants. The purpose of the research was to determine the effect of two herbicide mixtures at different doses on weeds in coffee plantations. This research used a 4 X 4 factorial randomised block design with 2 repetitions, resulting in 32 experimental plots. The first factor was metolachlor herbicide and the second was pendimethalin herbicide, each factor consisting of 4 levels with 0.00, 0.75, 1.75 and 2.25 kg ha⁻¹ doses. The observed parameters consisted of (1) dominance count value, (2) percentage of controlled weeds, (3) weed coverage, (4) weed population and (5) weed dry weight. The results showed that there was a very significant effect on the combined interaction of metolachlor and pendimethalin herbicide mixtures on the percentage of controlled weeds, percentage of weed closure at 21 and 28 DAA and weed dry weight at 28 and 42 DAA with the best dose combination at b.a. 1.50 kg ha⁻¹ which could increase the efficiency of weed control. Meanwhile, the percentage of controlled weeds, percentage of weed cover at 14 DAA and weed population at 28 and 42 DAA showed very significant results independently with a dose of b.a. 2.25 kg ha⁻¹.

Keywords: dose, herbicide, weeds, arabica coffee, production.