ABSTRACT

PHYTOTOXICITY ADVANCED TEST AND HERBICIDE EFFICACY OF AMINOCYCLOPYRACHLOR IN IMMATURE OIL PALM (*Elaeis guineensis* Jacq.)

By

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This research was tested to determine aminocyclopyrachlor herbicide poisoning symptoms, the severity of toxicity of aminocyclopyrachlor herbicide in immature oil palm as affected by different doses of herbicide, the effect of aminocyclopyrachlor herbicides on the plant growth, and the effectiveness of aminocyclopyrachlor herbicide in controlling weeds in immature oil palm.

The research was conducted from October 2013 – January 2014 in Rajabasa Village, Bandar Lampung and Plant Science Laboratory, Faculty of Agriculture, University of Lampung. The research was arranged in Randomized Completely Block Design with 9 treatments and 4 replications. The treatments: 7,5; 15; 30; 60 g ha^{-1} aminocyclopyrachlor, 729 g ha^{-1} glyphosate, 115,2 + 64,8 g ha^{-1} aminopyralid + trichlopyr, 1297 g ha^{-1} 2,4-D, mechanical control, and control. The homogeneity of variance was tested by Bartlett's test, additive was tested by

Tukey's test, and differences in the value being tested with Least Significant Difference test at 5% level.

The results: (1) aminocyclopyrachlor 15 – 60 g ha^{-1} cause poisoning symptom on immature oil palm from 2 – 10 Weeks After Application; (2) aminocyclopyrachlor 60 g ha^{-1} cause the highest level of toxicity compared to aminocyclopyrachlor 7,5 – 30 g ha^{-1}, but is equivalent with three others comparator herbicides;
(3) aminocyclopyrachlor and three others comparator herbicides cause poisoning symptom in leaf midrib, decrease the levels of green leaf midrib but not suppress the addition of plant height; (4) aminocyclopyrachlor 15 – 60 g ha^{-1} suppress the leaf midrib length equivalent to aminopiralid + trichlopyr 115,2 + 64,8 g ha^{-1}, and 2,4-D 1297 g ha^{-1}. Aminocyclopyrachlor 60 g ha^{-1} inhibit root growth of plant;
(5) aminocyclopyrachlor herbicide cannot suppress the total dry weight of weeds, but aminocyclopyrachlor 30 and 60 g ha^{-1} suppress the percentage of the total weeds cover at 4, 8, and 10 WAA. Aminocyclopyrachlor 60 g ha^{-1} controls the *Asystasia gangetica* at 2, 4, and 8 WAA.

Keywords: aminocyclopyrachlor, efficacy, phytotoxicity, immature oil palm