

**INHIBITORY EFFECTS OF TOPRAMEZONE AND ATRAZINE
APPLIED SINGLY AND IN COMBINATION ON-SELECTED
HERBICIDE-RESISTANT BIOTYPES OF GOOSEGRASS (*Eleusine
indica*)**

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DECLARATION

This Final Year Project is a partial fulfilment of the requirements for a Degree of Bachelor of Science in Agrotechnology (Hons.) Horticulture Technology in the Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

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ABSTRACT

INHBITORY EFFECT OF TOPRAMEZONE AND ATRAZINE APPLIED SINGLY AND IN COMBINATION ON SELECTED HERBICIDE-RESISTANT BIOTYPES OF GOOSEGRASS (*Eleusine indica*).

Eleusine indica, commonly known as goosegrass, has evolved resistance to different groups of herbicides like glyphosate, glufosinate and fluzifop due to over reliance on the herbicides. Thus, the research was conducted to determine the post emergence application of topramezone and atrazine applied singly or in combination on inhibition of three selected herbicide-resistant goosegrass biotypes under field conditions. Goosegrass plants were sprayed with herbicides at the flowering stage (three week after transplanting) by using a knapsack sprayer to achieve a spraying volume of 450 to 600 L per hectare. The assessment was done based on reduction of leaf greenness, shoot dry weight, scorching symptom of goosegrass plants one month after treatment. The results showed that glyphosate-resistant (GY-R) and glufosinate-resistant (GF-R) biotypes of goosegrass could be controlled by 97% with more than 90% reduction of leaf greenness when atrazine at 2500 g ai/ha (full rate) and topramezone at 25 g ai/ha (full rate) were applied singly or in combination at 1250 + 12.5 g ai/ha (half rate). However, topramezone alone or in combination with atrazine provided greater shoot dry weight reduction ($p < 0.05$) of both GF-R and GY-R biotypes than that of the fluzifop-resistant (FL-R) biotype, implying that the FL-R biotype was more tolerant than other biotypes when applied with topramezone alone or in combination with atrazine. Comparison of cost herbicide further revealed that atrazine applied at 2500 g ai/ha is the most cost effective treatment, followed by a combination of atrazine and topramezone at 1250 + 12.5 g ai/ha and topramezone at 25 g ai/ha.

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