

PROPER ADJUVANT SELECTION FOR TANK MIXTURE OF  
TRICLOPYR TO BE EFFECTIVE ON CONTROL OF  
*BEDKOTIS VERTICILLATA* IN

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HAK MILIK  
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PROPER ADJUVANT SELECTION FOR TANK MIXTURE OF TRICLOPYR AND  
METSULFURON ON CONTROL OF *HEDYOTIS VERTICILLATA* LAM.

By

Anne Marie Kaben

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the requirements for the degree of  
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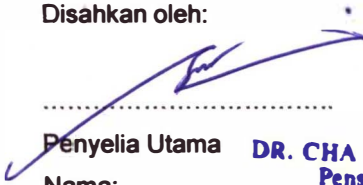


**JABATAN SAINS BIOLOGI  
FAKULTI SAINS DAN TEKNOLOGI  
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**PENGAKUAN DAN PENGESAHAN LAPORAN  
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: PROPER ADJUVANT SELECTION FOR TANK MIXTURE OF TRICLOPYR AND METSULFURON ON CONTROL OF *Hedyotis verticillata* (L.) oleh Anne Marie Kaben, no. matrik: UK 8177 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh ijazah Sarjana Muda Sains (Sains Biologi), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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## LIST OF ABBREVIATIONS

a.i.	active ingredient
ALS	Acetolactate synthase
ANOVA	Analysis Of Variance
ED <sub>70</sub>	70 % reduction in shoot fresh weight
g a.i./ha	gram active ingredient per hectare
HSD	Tukey's Honesty Significance Different
WAT	week after treatment

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## ABSTRACT

A study was conducted to determine the proper adjuvant selection among non-ionic surfactant (NIS), crop-oil concentrates (COC), and organosilicon (OS) for tank mixture of metsulfuron and triclopyr on control of *Hedyotis verticillata* Lam. under glasshouse and field conditions. The results of glasshouse study showed that tank mixture rate of 0.1 g a.i./ha metsulfuron plus 80 g a.i./ha triclopyr, 0.2 g a.i./ha metsulfuron plus 160 g a.i./ha triclopyr, 0.4 g a.i./ha metsulfuron plus 320 g a.i./ha triclopyr, and 0.8 g a.i./ha metsulfuron plus 640 g a.i./ha triclopyr with the addition of 0.25% NIS, 0.05% COC or 0.05% OS were effective on control of *H. verticillata* with organosilicon as the most effective adjuvant. In the fields, however, only treatment of 0.2 g a.i./ha metsulfuron plus 160 g a.i./ha triclopyr added with 0.25% NIS and 0.4 g a.i./ha metsulfuron plus 320 g a.i./ha triclopyr with the addition of 0.25% NIS, 0.05% COC, and 0.05% OS were good in controlling *H. verticillata*. However, it is suggested that the most cost-effective treatment on control *H. verticillata* is 0.2 g a.i./ha metsulfuron plus 160 g a.i./ha triclopyr with the addition of 0.25% NIS.



**PEMILIHAN ADJUVANT YANG SESUAI UNTUK KOMBINASI  
METSULFURON DAN TRIKLOPIR DALAM PENGAWALAN *Hedyotis  
verticillata* Lam**

**ABSTRAK**

Satu kajian telah dijalankan bagi menentukan pemilihan adjuvant yang sesuai di antara non ionic surfactant (NIS), crop-oil concentrates (COC), dan organosilikon (OS) untuk kombinasi racun herba metsulfuron dan triklopir dalam pengawalan *Hedyotis verticillata* Lam. di bawah keadaan rumah kaca dan lapangan. Keputusan kajian rumah kaca menunjukkan bahawa kombinasi metsulfuron dan triklopir pada kadar 0.1 g a.i/ha metsulfuron dengan triklopir 80 g a.i/ha, 0.2 g a.i/ha metsulfuron dengan 160 g a.i/ha triklopir, 0.4 g a.i/ha metsulfuron dengan 320 g a.i/ha triklopir, dan 0.8 g a.i/ha metsulfuron dengan 640 g a.i/ha triklopir dengan penambahan 0.25% NIS, 0.05% COC, dan 0.05% OS adalah berkesan dalam pengawalan *H. verticillata*, di mana organosilikon ialah adjuvant yang paling efektif. Walau bagaimanapun, bagi kajian di lapangan, hanya rawatan dengan 0.2 g a.i/ha metsulfuron dengan 160 g a.i/ha triklopir ditambah dengan 0.25% NIS, 0.4 g a.i/ha metsulfuron dengan 320 g a.i/ha triklopir ditambah dengan 0.25% NIS, 0.05% COC, dan 0.05% OS adalah baik untuk mengawal *H. verticillata*. Adalah dicadangkan bahawa rawatan yang paling kos-efektif untuk mengawal *H. verticillata* ialah 0.2 g a.i/ha metsulfuron tambah 160 g a.i/ha triklopir dengan tambahan 0.25% NIS.