

US EPA ARCHIVE DOCUMENT

**DATA EVALUATION RECORD  
INVERTEBRATE TOXICITY TEST**

- 1. **CHEMICAL:** Azoxystrobin (128810)
- 2. **TEST MATERIAL:** Formulation; 25% w/v suspension concentrate
- 3. **CITATION:**

Authors: Coulson, J.M., T.M. Fleming, and L.C. Farrelly  
 Title: ICIA5504: Investigation into the toxicity of a 250 g l<sup>-1</sup> SC formulation to the larvae of the hoverfly *Episyrphus balteatus* (Diptera : Syrphidae).  
 Date: 1994  
 Laboratory: Zeneca Agrochemicals, Jealotts Hill Research Station, Bracknell, Berks, UK  
 Lab. Report #: 94JH179  
 Sponsor: Zeneca Agricultural Products, Wilmington, DE  
 MRID No.: 436781-70

4. **REVIEWED BY:**

William Erickson  
 Biologist  
 EEB/EFED

Signature: *W. Erickson*  
 Date: 4/04/96

5. **APPROVED BY:**

Harry Craven  
 Section Head 4  
 EEB/EFED

Signature: *H. T. Craven*  
 Date: 6/21/96

6. **STUDY PARAMETERS/RESULTS SYNOPSIS:**

Age/size of Test Organism: 2- to 3-day old larvae  
 Test Concentration: 0.22 lb ai/acre  
 Significant effects: mean no. larvae per female per fortnight

- 7. **CONCLUSIONS:** The study is scientifically sound.
- 8. **ADEQUACY OF THE STUDY:** Supplemental.
- 9. **MAJOR GUIDELINE DEVIATIONS:** Not a guideline study.
- 10. **SUBMISSION PURPOSE:** New chemical.

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11. **MATERIALS AND METHODS:**

**Test Organism:**

Guideline Criteria	Reported Information
Species	hoverfly ( <i>Episyrphus balteatus</i> )
Age	2-3 days old (larvae)
No. per vessel	1

**Test System:**

Guideline Criteria	Reported Information
Site	laboratory
Application equipment	calibrated hydraulic track-sprayer fitted with a single Teejet
Post-treatment holding cages and conditions	after spray application, each rep. was enclosed in a separate holding cage, transferred to a constant environment room and connected to an air pump to prevent an excess moisture build up
Post-emergence mating cages	on emergence, adults were transferred to adult mating cages (82 x 46 x 100 cm), 1 cage per treatment
Female cages	10 days after emergence of the last adult, females removed and individually housed in 20 x 40 cm cylindrical cages
Temperature	20-23°C
Relative humidity	38-95%
Photoperiod	16 h light/8 h dark

**Test Design:**

Guideline Criteria	Reported Information
Duration	days
Treatment Groups	control (deionized water), azoxystrobin (250 g ai/ha*), and a toxic standard (dimethoate, 400 g ai/ha)
Test units	each treatment was applied to the test larvae, their food (vetch aphids), and the test substrate (tic bean seedlings contained in a pot)
No. replicates	30

\*0.22 lb ai/acre

**12. REPORTED RESULTS:****General Results:**

Guideline Criteria	Reported Information
Quality assurance and GLP compliance statements were included in the report?	yes
Raw data included?	yes

**Effects Data:**Effect of treatments on *Episyrphus balteatus* larvae and adults:

	Control (deionized water)	Azoxystrobin (0.22 lb ai/acre)
No. larvae treated	30	30
% larvae pupating	97	93
% adults emerging of those that pupated	86	82
No. females that had fecundity assessed	11	9
Mean no. eggs produced per female per fortnight	1365	1355

Mean no. larvae per female per fortnight	541	279*
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\*statistically different from the control at the 5% level, based on t-test

**Conclusions:** "Young larvae represent the most susceptible life-stage for this species. Even under laboratory conditions no direct effects on mortality, adult emergence or egg production were observed. Therefore in the field, any limited reductions in fecundity are likely to be small since a range of life-stages will be present at the time of application. Under normal field use, ICIA5504 applied at 250 g ai ha<sup>-1</sup> is unlikely to adversely affect populations of *Episyrphus balteatus*."

13. **REVIEWER'S DISCUSSION/CONCLUSIONS:** The study is scientifically sound. At an application rate of 0.22 lb ai/acre, azoxystrobin had a statistically significant adverse impact on the number of larvae produced per female.