



BIOTECNOLOGIE BT
FINAL REPORT ET1511/12

Efficacy evaluation of five different products against the Black Bean Aphid
Aphis fabae Scopoli (Homoptera: Aphididae).

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According to EPPO guidelines
Biotechnologie BT Internal Methods

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1. STUDY OBJECTIVE

The efficacy of the five different formulaions on the colonisation of the Black Bean Aphid, *Aphis fabae* Scopoli (Homoptera: Aphididae) was evaluated by an extended laboratory test in the greenhouse. Broad bean plants, infested by aphids, were treated with the samples and the assessments (mortality of the treated aphids) were performed at 24 and 48 hours after treatment.

2. MATERIALS AND METHODS

2.1 Test items, reference item and control

The test was carried out at the following rates.

Table 1: Trials Layout

TREATMENT	Application rates
Untreated control	0.00
DUM CIDA 1 - DUM CIDA 2 - DUM CIDA 3 - DUM CIDA 4 - DUM CIDA 5	1x
DUM CIDA 1 - DUM CIDA 2 - DUM CIDA 3 - DUM CIDA 4 - DUM CIDA 5	3x
DUM CIDA 1 - DUM CIDA 2 - DUM CIDA 3 - DUM CIDA 4 - DUM CIDA 5	6x
DUM CIDA 1 - DUM CIDA 2 - DUM CIDA 3 - DUM CIDA 4 - DUM CIDA 5	10x
TREBON UP	15 mL

For each trial, 5 pots infested by 10 aphids each, were used.

2.2 Test system

10 adults of *Aphis fabae* per plant were used as test system. The organisms used in the study were healthy and came from the laboratory rearing of the testing facility.

2.3 Method

The broad bean plants used as test units were been grown under environmentally controlled conditions, in the test facility for 7 days. Before the applications the plants were infested by 10 adult aphids.

2.3.1 Application of the products

The products were applied (undiluted) with spraying equipment. The spray equipment was calibrated before the application by adjusting the spraying pressure, application speed and type of nozzle to provide an output of 400 L \pm 10% per ha. After the calibration the plants were sprayed.



2.3.2 Experimental test conditions

The test was carried out at the following conditions:

- temperature: 25.00 ± 3.00 °C
- humidity: 50 – 70%
- photoperiod: 16 h light and 8 h darkness

3. RESULTS

The results are reported in the following tables.

Tables 2: Aphids mortality at 24 hours after treatment

TREATMENT	Application rates	% Mortality at 24 hours	% Mortality at 48 hours
Untreated control	0.00	0.00	0.00
DUM CIDA 1	1x	0.00	0.00
DUM CIDA 1	3x	3.33	3.33
DUM CIDA 1	6x	6.67	6.67
DUM CIDA 1	10x	6.67	6.67
DUM CIDA 2	1x	3.33	3.33
DUM CIDA 2	3x	0.00	0.00
DUM CIDA 2	6x	0.00	0.00
DUM CIDA 2	10x	0.00	6.67
DUM CIDA 3	1x	0.00	0.00
DUM CIDA 3	3x	3.33	3.33
DUM CIDA 3	6x	6.67	6.67
DUM CIDA 3	10x	10.00	10.00
DUM CIDA 4	1x	0.00	0.00
DUM CIDA 4	3x	6.67	6.67
DUM CIDA 4	6x	0.00	3.33
DUM CIDA 4	10x	36.67	36.67*
DUM CIDA 5	1x	3.33	3.33
DUM CIDA 5	3x	10.00	10.00
DUM CIDA 5	6x	0.00	0.00
DUM CIDA 5	10x	10.00	20.00*
TREBON UP	15 mL	100.00	100.00*

*the mean difference is significant at the 0.05 level for Dunnett's test

4. CONCLUSIONS

Based on the results obtained during the test, it can possible to conclude that the product **DUM CIDA 4** showed a moderate efficacy when applied 10 times as such

Study Director

Date



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