

Collard: *Brassica oleracea* 'VATES'

Field Efficacy of IKI 3106 50SL for the Control of Harlequin Bugs in Collards in Virginia, 2014*

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Kale / Collard greens | *Brassica oleracea* var. *acephala*

harlequin bug | *Murgantia histrionica*

2',3-dibromo-4'-chloro-1-(3-chloro-2-pyridyl)-6'-[[1(RS)-1-cyclopropylethyl]carbonyl]pyrazole-5-carboxanilide; 3-Bromo-N-[4-chloro-2-methyl-6-[(methylamino)carbonyl]phenyl]-1-(3-chloro-2-pyridinyl)-1H-pyrazole-5-carboxamide

Our experiment investigated the field efficacy of a new diamide insecticide, IKI 3106 50SL (cyclaniliprole), for the management of HB, an important pest of collards in the southeastern United States. To our knowledge, the activity of this insecticide on HB is not known. The experiment consisted of five treatments arranged in an RCB design with four replicates. On 20 May, collards were direct seeded at a rate of 2 lbs. of seed per acre in rows 16 in. apart at the Virginia Tech Kentland Research Farm in Blacksburg, VA. Plots were 3.28 ft (1.0 m) wide and 20 ft (6.1 m) long with no guard rows. Foliar insecticide treatments were applied without spreader sticker on 17 October and with Induce NIS at 0.5% v/v on 22 October using a CO₂ backpack sprayer and a three-nozzle boom that delivered 38 gpa at 40 psi. On 20, 27, and 30 October, the number of live HB nymphs and adults were recorded per 10 plants per plot. All data were analyzed using ANOVA; means were separated using Tukey's HSD at the 0.05 level of significance.

HB densities were relatively high with an average of 33 adults and 9.8 nymphs per 10 plants on 20 October in the untreated check plots. There was a significant effect of treatment on numbers of adult HB counted on all three sample dates. All insecticide treatments had fewer HB adults than the untreated check, but a significantly greater reduction in HB counts occurred with IKI-3106 50SL at 16.4 fl oz. and 22 fl oz. per acre than with the lower dose of this insecticide (11.0 fl oz. per acre) or with Coragen 1.67SC. HB nymph densities were relatively low compared with adults, and there was no significant effect of treatment on their counts. Although not tested in a side by side comparison, the addition of the NIS adjuvant to the second spray application appeared to enhance the overall efficacy of all insecticides, improving the percent control of the medium and high rates of IKI-3106 from 76% to ≥90%. Collard plants within plots displayed no signs of phytotoxicity following insecticide treatments.

Table 1

Treatment/formulation ^a	Rate Fl oz/acre	Mean no. HB/10 plants					
		20 Oct (3 DAT)		27 Oct (5 DAT)		30 Oct (8 DAT)	
		Adults	Nymphs	Adults	Nymphs	Adults	Nymphs
Untreated check	–	33.0 a	9.8	10.0 a	2.5	8.8 a	2.5
IKI 3106 50SL	11.0	12.0 b	6.5	4.5 ab	1.5	2.5 b	0.3
IKI 3106 50SL	16.4	7.8 b	2.0	1.0 b	0.0	2.8 b	0.5
IKI 3106 50SL	22.0	7.5 b	2.5	0.3 b	0.5	2.0 b	1.3
Coragen 1.67SC	5.0	16.8 b	4.5	5.3 ab	0.3	4.0 ab	0.5

^a Induce NIS at 0.05% vol/vol was added to all treatments on the second application.

All data were analyzed using ANOVA. Means were separated using Tukey's HSD at the 0.05 level of significance. Means followed by the same letter within a column are not significantly different ($P > 0.05$).

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