

(C3)

BLACKBERRY: *Rubus* hybrid, 'Arapaho'

CONTROL OF RASPBERRY CROWN BORER, 2003-2004

Jackie A. McKern

Agri Bldg 311, Department of Entomology
University of Arkansas
Fayetteville, AR 72701
Phone: (479) 575-2501
Fax: (479) 575-2452
E-mail: dtjohnso@uark.edu

Donn T. Johnson

Barb A. Lewis

Raspberry crown borer (RCB): *Pennisetia marginata* (Harris)

Only Guthion Solupak is registered against RCB on blackberry and this use may be cancelled in the future, so it is necessary to evaluate other formulations for efficacy against the RCB on blackberry. Each treatment plot had five blackberry crowns in a RCB design with five replicates in a blackberry planting in Conway, AR. On 23 Oct 2003, the treatments were: solution of *Steinernema feltiae* (IJ = infective juveniles); one *S. feltiae*-infested greater wax worm, *Galleria mellonella* (L.) cadaver per crown; Novaluron 10EC; Guthion Solupak 50%; Lorsban 4E; Brigade 10WSB; and an untreated check. On 6 May 2004 the treatments were: solution of *S. feltiae*; GF-968; Novaluron 10EC; Guthion Solupak 50%; Lorsban 4E; Brigade 10WSB; and untreated check. On these two dates, the soil around each crown was either drenched with a treatment solution (400 gpa) or one nematode-infested greater wax worm cadaver was inserted at 2.5-cm depth in soil next to each crown. All treated blackberry crowns were dug up on 24 Jun 2004, split open and counts made of the number of RCB larvae in each five crown plot. Data are presented as the number of RCB larvae per five crowns and analyzed using ANOVA and means were separated using WD t-test ($P \leq 0.05$).

On 23 Oct, the blackberry crowns receiving soil drench treatments of Brigade, Lorsban or Guthion had significantly fewer RCB larvae per crown (> 9-fold difference) than did the *S. feltiae* nematode solution and the untreated check (Table 1). Novaluron and the *S. feltiae*-infested cadaver provided intermediate control of the larvae. In contrast, none of the treatments applied on 6 May caused a significant reduction in the number of RCB larvae per crown (Table 2). The difference between treatments applied in Oct versus early May was attributed to the fact that all RCB larvae in the fall are newly hatched and have just bored under the stem bark, whereas during Apr the RCB bored into the crown minimizing the exposure to treatments applied in early May. In the future, a late Mar treatment before RCB bores into the crown will be expected to provide control similar to that of an Oct treatment.

Table 1.

Treatment/ formulation	Rate amt product/acre	No. of RCB larvae per 5 crowns 23 Oct 2003
Untreated check		27.8a
<i>S. feltiae</i>	60,000 IJ/crown ^a	19.2ab
<i>S. feltiae</i>	infested cadaver	15.0b
Novaluron 10EC	12.0 fl oz	11.4bc
Guthion Solupak 50%	1.0 lb	3.0cd
Lorsban 4E	32.0 fl oz	1.4d
Brigade 10WSB	1.0 lb	0.2d

Means for each date followed by the same letter are not significantly different (WD t-test; $P > 0.05$)

^aIJ = infective juveniles.

Table 2.

Treatment/ formulation	Rate amt product/acre	No. of RCB larvae per 5 crowns 6 May 2004
Untreated check		19.6a
<i>S. feltiae</i>	60,000 IJ/crown ^a	16.2a
Novaluron 10EC	14.0 fl oz	17.8a
Guthion Solupak 50%	1.0 lb	11.8a
Lorsban 4E	32.0 fl oz	16.8a
Brigade 10WSB	1.0 lb	13.2a

Means for each date followed by the same letter are not significantly different (WD t-test; $P > 0.05$)

^aIJ = infective juveniles.