

pronunciados de fitotoxicidad en plantas derivadas de semilla tratada con concentraciones más altas que 1.8 g/L del nematocida. Las semillas tratadas con las dos concentraciones más altas no dieron plantas. El grado de control obtenido con la concentración más atenuada varió entre 67 y 100% dependiendo de la especie de nemátodo.

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EFFECT OF OXAMYL ON HATCHING AND LARVAL DEVELOPMENT OF *ROTYLENCHULUS RENIFORMIS* [EFECTO DEL OXAMYL EN LA ECLOSION Y DESARROLLO LARVAL DE *ROTYLENCHULUS RENIFORMIS*]. C. V. Sivakumar, M. Balasubramanian and S. Palanisamy, Tamil Nadu Agricultural University, Coimbatore - 641003 India.

#### ABSTRACT

*In vitro* studies proved that oxamyl suppressed the hatching of *Rotylenchulus reniformis* eggs at concentrations varying from 5 to 500 ppm. Limited hatching took place at concentrations of 5, 10, 25 and 50 ppm while complete inhibition occurred at 500 ppm. The action was reversible but hatching potential was significantly reduced at concentrations of 10 ppm and above. Larval development was delayed in oxamyl. The development period in 0, 5, 10, 25, 50 and 500 ppm was 11, 14, 14, 17, 20 and 27 days for males and 13, 17, 17, 19, 22 and 29 days for juvenile females respectively, at 25 C.

Foliar application of oxamyl (methyl N' - N' - dimethyl - N - ((methylcarbamoyl) oxy) - 1-thioxamimidate) has been reported to be effective in preventing invasion of cotton and tomato roots by *Rotylenchulus reniformis* (4). Results of studies conducted *in vitro* on the hatching and larval development of the nematode are presented in this paper.

#### MATERIALS AND METHODS

Ten egg masses of the nematode from a culture maintained on castor bean were transferred to 5 ml solutions containing 0, 5, 10, 25, 50 and 500 ppm oxamyl in glass vials and incubated at 25 C. Each treatment was replicated 4 times. The hatched larvae were counted every 48 hr and fresh chemical solution was added. When hatching ceased after a week, the eggs were transferred to water to again induce hatching and further observations made until hatching again ceased.

The eggs were incubated in water at 25 C and the larvae which hatched on the first day were discarded. Larvae hatching the second day were transferred to

Table 1. Effect of oxamyl on hatching and larval development of *R. reniformis*

Treatment in ppm	Hatch in oxamyl after 1 - wk	Hatch following transfer to water after 2 - wks	Total hatch	Larval development period (days)	
				Males	Juvenile females
5	375 cd	79 a	454 d	14	17
10	320 c	40 a	360 c	14	17
25	166 b	79 a	245 b	17	19
50	63 a	133ab	196 ab	20	22
500	0 a	166 b	166 a	27	29
0 (Water)	455 d	—	455 d	11	13

Column figures followed by different letters are significantly different from each other at 5% level by Duncan's new multiple range test.

5 ml solutions at different concentrations and incubated at 25 C. The time taken for the second-stage larvae to become adult males or juvenile females was recorded.

## RESULTS AND DISCUSSION

Hatching was completed in 7 days in water. Complete inhibition of hatching occurred in oxamyl 500 ppm and limited hatching in 25 and 50 ppm during the first week. Hatchability was little affected below the 5 and 10 ppm concentrations. Hatching completely ceased in water, as well as the chemical solutions, after 1 week but the oxamyl treatments contained unhatched embryonated eggs (Table 1).

Hatching resumed in all oxamyl-treated eggs upon transfer to water, including those treated with 500 ppm in which complete inhibition resulted. However, full hatching potential was not restored in eggs treated at concentrations of 10 ppm and above, even after transfer to water.

The period taken by the second-stage larvae to become juvenile females or adult males was shortest in water and longest in 500 ppm oxamyl (Table 1), with the other treatments being intermediate.

Aldicarb, another carbamate systemic nematicide, is also known to affect the hatchability of eggs of *Heterodera rostochiensis* (3), *H. schachtii*, *Meloidogyne javanica* (1), and *M. incognita* (2).

## RESUMEN

Estudios *in vitro* demostraron que concentraciones de 5-500 ppm de Oxamyl inhiben la eclosión de las larvas de *Rotylenchulus reniformis*. Se obtuvo eclosión limitada a concentraciones de 5, 10, 25 y 50 ppm, mientras la inhibición fue total a 500 ppm. La acción fue irreversible, pero el potencial de eclosión se redujo significativamente desde 10 ppm en adelante. El Oxamyl retardó el desarrollo larval. A 25 C, el desarrollo en 0, 5, 10, 25, 50 y 500 ppm fue de 11, 14, 14, 17, 20 y 27 días para los machos y 13, 17, 17, 19, 22 y 29 días para hembras juveniles, respectivamente.

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## BOOK REVIEWS - - - RESUMENES DEL LIBROS

### EDITOR'S NOTE:

It has become the policy of this periodical to request reviews of books, and other voluminous material, from knowledgeable nematologists. A recent review of *ENTOMOGENOUS NEMATODES* (G. O. Poinar, Jr., 1975. E. J. Brill, Leiden, Netherlands, 317 pp.) received an unfavorable review. In the interests of impartiality, another review of the book has been solicited and follows.