Note brève

LABORATORY PRODUCTION OF *NEOAPLECTANA CARPOCAPSAE* WEISER AFFECTED BY NIPAGIN AND STREPTOMYCIN

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Biological control of insect pests by the rhabditid nematode *Neoaplectana carpocapsae* has shown a real potential for agriculture (Gaugler, 1981). As far as tropical agriculture is concerned, Laumond, Mauléon & Kermarrec (1979) underlined a large host range for this parasite in Guadeloupe. Various studies also showed a possible control of the banana weevil *(Cosmopolites sordidus)* by this worm, at least under experimentally controlled conditions (Kermarrec & Mauléon, 1974).

Mass production of *Neoaplectana spp.* should no longer present any major technical difficulty to industry. Nevertheless, laboratory rearings of small quantities for experiments still necessitate artificial host productions. We show here that some ingredients used in artificial diets for the rearing of lepidopterous larvae may have tremendous effects on the production of the nematodes, as already underlined by Guennelon (1968) for entomophagous insects. This seems particularly the case of antibiotics, like Nipagin (methylparaben or methyl parahydroxybenzoate) and Streptomycin, commonly

Table 1

Variation of LD 50 of *D. saccharalis* larvae, according to diet, three days after infestation by *N. carpocapsae*

Diet	*Sugarcane*	*Synthetic*	*LD 50 ratio*
LD 50 for all instars	300	63 000	200
LD 50 according to instar ..... L 3	700	37 000	50
..... L 5	50	12 000	240

Table 2

[redacted]

c) *G. mellonella* caterpillars are also submitted to Streptomycin : ingested with wax or injected (5 µl in a false leg) at different concentrations (0, 12, 50, 100 ppm) and placed against 30 000 L 3 of *N. carpocapsae.*

The percentages of parasitized caterpillars are evaluated after eight days by dissection and the production of *N. carpocapsae* (sexuates and new generation) is estimated by a discrete notation (0 : none to 3 : very high density). The final notation will be the sum of the notes given to each replication of the treatment.

Results

Table 1 shows that Nipagin clearly lowers susceptibility to *N. carpocapsae* by 200 times (all instars) and from 50 to 250 times with larval aging from third to fifth instar.

Table 2 (A, C) underlines a dose linked effect for Nipagin (ingested) and Streptomycin (injected) on the percentage of parasitized *Galleria* as well as on the production of new *N. carpocapse.* Higher concentrations of Nipagin occured to be antiphagant to *Galleria.*

Ingested Streptomycin answered in the same direction (Tab. 2, B) than Nipagin by lowering the production of *N. carpocapsae* by the insect host.

Conclusion

The use of artificially reared caterpillars to produce infestive *N. carpocapsae* in the laboratory must obviously take in account the fact that antimicrobial chemicals may strongly depress hosts suitability. This observation is close to the conclusions of Grenier (1977) on entomophagous insects.

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