

EFFECT OF SOME CHEMICALS ON THE MORTALITY OF *XIPHINEMA* SPECIES

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Effect of the solutions of different insecticides, fungicides and pesticides were tested on the mortality period of the genus *Xiphinema* species (Cobb; 1913) in vitro. One percent solution of insecticides Dimecron, Metacid, Nuvan, Rogor, Melathion, endosulphan, Aldrin and a fungicide Diathan M45 possessed marked nematocidal properties and killed the nematodes within 5 to 36 minutes. However, BHC powder could kill the nematode after 4 hours.

Keywords : Fungicide; Insecticide; *Xiphinema*

Introduction

Xiphinema species are widely distributed in the world. During a survey of nematodes in the years 1987-89, high population of this nematode was found associated with plant roots of chillis in the Guna district of Madhya Pradesh causing severe damage. Specific nematocides are not available to the farmers in this area. Hence it was considered desirable to study the effectiveness of different commonly available-insecticides, fungicides and pesticides for controlling the *xiphinema* species.

One percent solution of Insecticides like Dimecron, Metacid, Nuvan, Melathion, aldrin, Rogor and Endosulphan, a fungicide Diathan M 45 and a pesticide BHC powder was

prepared in distilled water. Few specimens of *Xiphinema* from freshly isolated soil were transferred in the cavity slides and continuously examined for one hour with an interval of 5 minutes. And then with an interval of 30 minutes upto 5 hours. Each treatment was replicated five times. Total time of death recorded and average mortality period was calculated in each case.

Dimecron, Metacid, Nuvan, Rogor, Melathion, Endosulphan, and aldrin all were found effective for the mortality of the nematode, as one percent solution of these Insecticides killed the nematodes within 5, 11, 13, 27, 29, 34 and 36 minutes respectively. A fungicide Diathan M 45 was also found effective for the

mortality period, killing the nematode in 23 minutes. A pesticide, BHC powder appeared to have slow nematocidal property and could kill the nematode after 4 hours. During the treatments nematode activity was also recorded (Table 1).

Technology, Bhopal for the financial assistance and Dr. B. P. Saxena Principal, Govt. P.G. College Guna, for providing laboratory facilities and encouragement during the course of investigation.

The authors are grateful to the Director M.P. Council of Science and

Accepted, July 1990

Table 1 Effect of some Insecticides, Fungicides and Pesticides on the mortality period of *Xiphineam* species.

Treatment one percent Solution.	Mortality period in minutes for five replicate.					Average mortality period and behaviour of the nematode body.
DIMECRON (Phosphamiden 85% SI)	5	4	5	6	4	5 minutes—No special observation was noted.
METACID—50 (50% Methyl Parathion)	15	10	10	9	7	11 minutes—Movement stopped and a little portion of the style came out from the mouth at the time of death.
NUVAN (Dichlororous, DDVP).	10	11	12	15	17	13 Minutes—Indicated quick lashing movement in the beginning and then gradually slow down till death.
ROGOR (Dimetho-ate 30%)	30	25	30	24	28	27 Minutes—Nematode started coiling and relaxing alternately till death.
MELATHION Board spectrum (Organo-phosphorus Compound)	25	25	32	35	30	29 Minutes—No special observation was noted.
ELDOSULPHAN 35% (Sulphurus acid ester)	30	38	40	35	31	34 Minutes—Movement Immediately stopped, stylet came out upto guiding ring at the time of death.
ALDRIN (Endo-Exo HHDN 30%)	35	40	30	45	32	36 Minutes—No special observation was noted.
DIATHAN M 45 (Mengese ethylene Bisdithiocarbamate)	21	22	25	24	25	23 Minutes—No special observation was noted.
B.H.C. Powder (Benzene Hexachloride)						4 hours—Movement negligible but died after 4 hours.