



THE EFFECT OF ETHION AND CYPERMETHRIN ON PROTEIN CONTENTS IN FRESH FRUIT OF *Solanum melongena* Lin. AND *Lycopersicon esculentum* Mil.,

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ABSTRACT

A Study was conducted during 2005-2008 in Muzaffarnagar, Uttar Pradesh, India to determine the protein contents of *Solanum melongena* and *Lycopersicon esculentum* fruits. We used ethion and cypermethrin pesticides in four concentration viz. 0.01%, 0.15%, 0.25% and 1.00% on *Solanum melongena* and *Lycopersicon esculentum* after maturity of crops and collected the fruits and studies the protein contents. We found lower concentration of 0.01% of ethion is more toxic than the cypermethrin. Cypermethrin increase the % of protein contents at lower concentration and decrease the protein contents at higher concentration than the ethion. We found the ethion is more toxic than the cypermethrin.

Key Words : Ethion, cypermethrin, *solanum melongena*, *Lycopersicon esculentum*, fruits, protein contents, residues.

Pesticides have become necessary evil for agriculture. Pesticides are chemical substances used to kill or control pests and insects and moisture, aquatic plants, that clog irrigation and drainage ditches disease of plants caused by fungi, virus, bacteria, snails, slugs, rodents and birds that eat their weight every day in young plants, seedlings and grain from field and feedlots as well as from storage. (Benerji et al., 2001).

Pesticides came in to extensive use in agriculture and public health in the early fruits of the century. These made great impact on the production and storage of food fibre and other cash crops. Enhanced farm productivity and inexpensive control of vector borne disease were the main benefits brought by pesticides.

Cypermethrin (RS)-alpha cyano-3-phenoxybenzyl(JRS) cis ;transe (2,2 dichlorovinyl) 2-2 dimethylcyclopropane carboxylate) is fourth generation synthestic compound primarily used as an insecticides. Its acts as a fast acting neurotoxin insects. It is easily degrade on soil and plants for farmer cypermethrin is the last weapen in the armoury to kill

“hands to kill”. Its insects and to industries. This is synthesized based on structure modification of natural pyrethrin.

Ethion (Phosphorodithioic acid, S,S-Methylene o,o,o,o,-Tetraethyl ester and other name Hylemox, Rodocid, Nialate and Ethyl methylene Phosphorodithioar) is as an organophosphate pesticides used to kill aphids, mites, scales, thrips, leafhoppers, maggots and foliar feeding larvae. It may be used on a wide variety of food, fibres and ornamental crops including green house crops, lawns and turf. It is mixed with oil and interfering with the activites of cholinesterase as an enzymes that is essential for the proper working of the nervous system of both human and insects.

Solanum melongena Lin. var, incanum is a medium sized, prickly, perennial shrub with blue flowers and yellow ovoid or globose berries var. melongena includes the common egg plant with large, pendent, ovoid, oblong or obovoid berries 5-30cm long shining, white, purple, yellowish or striped var. depressum. The fruits of var. serperitinum

are greatly elongated up to 30cm, long and 2-5cm in diam and are curled at the end. (Mansfield,1993 ,Bailey,1949,869).

Lycopersicon esculentum is more a cultigens than a natural species by cultivation selection and probably hybridization is characters have been changed so much that its wild form is difficult to recognize based on certain botanical features, four sub species are recognized viz., typicus, galena, humboldti and intermedium.

S.melongena and *L.esculentum* both are members of family solonaceae was selected for the study. Both crops are most popular vegetables crops widely grown.

MATERIALS AND METHODS

The seeds of tomato and brinjal were obtained from sabzi beiz bhundar shop sadar bazaar, Muzaffarnagar, the authorized dealer of Nunhems seeds Pvt. Ltd.. These varieties were selected because they showing to be highly productivity, commonly used by the farmers of this area and high economic value.

In the case of field studies the presoaked seeds in different concentration of ethion and cypermethrin and distilled water were sown in pots, 5 replicates were taken for each treatments everytime sampling of fruits was done maturity of the crops for protein estimation.

Table 1 :The effect of ethion on protein contents (mg/gm dry wt.) in Fresh Fruit of solanum melongena and Lycopersicon esculentum

Treatments	<i>S.melongena</i>		
	I	II	III
Control	8.375± 0.021	11.600±0.212	9.785±0.023
0.01%	9.486±0.023	11.758±0.024	10.825±0.017
0.15%	7.960±0.022	10.998±0.016	9.450±0.011
0.25%	7.073±0.028	7.898±0.020	7.225±0.014
1.00%	5.228±0.026	6.185±0.015	5.463±0.017

Table 2 :The effect of ethion on protein contents (mg/gm dry wt.) in Fresh Fruit of solanum melongena and Lycopersicon esculentum

Treatments	<i>L.esculentum</i>		
	I	II	III
Control	10.425± 0.015	17.650±0.014	13.600±0.205
0.01%	11.768±0.022	17.795±0.014	14.090±0.009
0.15%	9.995±0.011	14.840±0.012	12.518±0.030
0.25%	9.120±0.016	12.753±0.032	11.447±0.014
1.00%	8.128±0.016	9.637±0.012	8.777±0.020

RESULTS AND DISCUSSION

The effect of ethion and cypermethrin was studies on protein contents in fresh fruits of brinjal and tomato. Protein contents were estimated in brinjal fruits. In fruits protein was maximum at II stage. Lowest ethion was more toxic than the cypermethrin. Cypermethrin was stimulates protein in fruits but other concentration a long with every concentration of ethion were toxic. Ethion was more toxic than the cypermethrin.

Discussion :

Each concentration of ethion and cypermethrin significantly inhibited protein contents at every stage of phenology. Cypermethrin at lower concentration significantly stimulates protein contents 9.16% and 14.11% and ethion at higher concentration significantly maximum inhibition 33.93% and 30.19% in both the crops. Coleman (1992) studies zinc protein transcription factor and replication protein a simplification of the protein assay method of Lowery et al (which is more generally applicable by Poterson (1979)). Zama and Hatzios (1986) found protein contents are stimulates by the lowest concentration of pesticides. Various workers have reported increase in protein contents study by Pathak and Mukherjee (1986).

Protein contents because ion uptake influence protein

Table 3 :The effect of cypermethrin on protein contents (mg/gm dry wt.) in Fresh Fruit of solanum melongena and Lycopersicon esculentum

Treatments	<i>S.melongena</i>		
	I	II	III
Control	8.375± 0.021	11.600±0.212	9.785±0.023
0.01%	9.4589±0.023	11.840±0.014	11.120±0.014
0.15%	8.553±0.019	11.715±0.015	10.150±0.019
0.25%	7.370±0.022	7.960±0.013	7.625±0.022
1.00%	5.400±0.210	6.500±0.308	5.970±0.024

Table 2 :The effect of cypermethrin on protein contents (mg/gm dry wt.) in Fresh Fruit of solanum melongena and Lycopersicon esculentum.

Treatments	<i>L.esculentum</i>		
	I	II	III
Control	10.425± 0.015	17.650±0.014	13.600±0.205
0.01%	12.550±0.016	17.900±0.466	14.480±0.009
0.15%	11.245±0.018	17.780±0.005	13.720±0.013
0.25%	10.490±0.011	13.537±0.016	12.464±0.013
1.00%	8.530±0.021	10.200±0.118	9.540±0.020

Value are represented as mean ± S.E (10 observation)
 Value are significant at P 0.05 (Fisher'S' test)
 Value non significant at P 0.05 level
 Value in parenthesis represent % inhibition (-) or promotion (+) in compa

synthesis (Steward and Miller, 1954) and Brenner and Maynard (1966). Protein contents were found highest at II stage of sampling which is agreement with Singh and Singh (1983) because mineral are associated with process of energy capture by primary producers (Wassink) Steward and Miller (1954).

Brenner and Maynard (1966) study protein synthesis (Barker(1979) and fresh weight (Bottrill et al., 1970) and chlorophyll contents.

REFERENCES

- Agnihotri N P, Jain M K and Gajbhiye U T (1986).** Persistence of some synthetic pyrethroid insecticides in soli, water and sediments part *J.J.Ent.Res.***10** : 147-150
- Banerjee Dixit B S (2001).** (Lipid chem.,Nalt Botl.Res Inst, Lucknow) Residues level of monocrotophos in water chestnut pollen. *Res* **20(2)** :205-206
- Botrill D E, Possingham J V and Kriedimann P E (1978).** The effects of nutrients coficiencies on respiration and photosynthesis in spinach. *Plant and Soil* **32**: 424-438
- Brenner M L and Maynard D N (1966).** A study of rubidium accumulation in Euglenagracillis .*Plant Physio.*, **41** : 1285-1288
- Coleman J E (1992).** Zinc protein,enzymes,storage protein transcription factors and replication protein. *Annu.,Rev.Biotech.*, **61**:897-946
- Pathak B K and Mukherjee S (1986).** Seven induced stimulation of growth and metabolism of mungbean (vigna mungo L. wilczeok) seedling *curr. Sci.*, **55**; 17-18
- Poterson G L (1976).** A simplification of the protein assay methods of Lowery et al, which is more generally applicable. *Ana.Biochem.*,**83** :346-356
- Steward F C and Miller F K (1954).**Salt accumulation in plants.A reconsideration of therole of growth and metabolism.A saltaccumulation asa cellular phenomenon Symp. *Society Exp.,Bio.*,**8**:367-393
- Zama P and Hotzois K H (1986).** Comparative effects of cyometrinil and flurozole on selected metabolic process of isolated soyabean leafy cells.*J.Plant Growth Regulator.*
