RADIATION BIOLOGY LABORATORY

Principal Investigator : Dr. Ranjana Seth,
Associate Professor
Department of Zoology
seth.ranjana.27@gmail.com

Research Area: Entomology

No. of Ph.D students : Submitted

1. Ms. Simran,
   Thesis entitled "Bio-efficacy of entomopathogenic nematode Steinernema thermophilum on lepidopteran pest Spodoptera litura(Fabr.) vis-a-vis ionizing radiation" submitted on 1-8-2022
2. Ms. Ekta Tyagi
   Thesis entitled "Characterization of Rv1985c of Mycobacterium tuberculosis as nucleoid associated protein" submitted on 28-7-2022

The students are registered from the Department of Zoology, University of Delhi and done their experimental work in the university campus.

Research Projects: Completed

1. **International Project: International Atomic Energy Agency (IAEA) sponsored project (IAEA Research Contract No. 15852/RB,** entitled, **"Development of Generic Irradiation Doses for Phytosanitary Treatment of Mealy Bug spp Infesting Agricultural Commodities"**, under IAEA CRP D62008, "Development of generic irradiation doses for quarantine treatment", awarded for 2009-2015 with a grant of Euros 40,000.

2. **'Influence of Plant Extracts on Reproductive Physiology and Behavior of *Aedes aegypti'*.** DB--208, funded by University of Delhi (2013-2014).

Research Papers Published in Refereed/Peer Reviewed Journals:

1. Seth, R.K., Patil,B.V., Zarin, M., Khan, Z., Hanchinal, S.G., Haveri, R.V., Gopalkrishna, A., and Seth, Ranjana. 2020. Studies on the ontogenic radio-sensitivity in Callosobruchus species complex to establish a generic dose of phytosanitary irradiation as a post harvest quarantine treatment for disinfestation of pulses. Radiation Physics and Chemistry. DOI: 10.1016/j.radphyschem.2020.108686

154374608. Seth, R. K., Vimal, N., Sengupta, M., Angmo N., Dhal M. K. and Seth Ranjana. 2018.
Coupling biorational tactics with radio-genetic F1 Sterility technique for an effective integrated pest management against lepidopteran insects. Int J Zoo Animal Biol. 1(4):

000120.

154374656. Seth, R.K. Zarin, M., Khan, Z. and Seth, Ranjana. 2016. Ionizing radiation as a phytosanitary treatment against Phenacoccus solenopsis (Hemiptera: Pseudococcidae). Florida Entomologist 99(sp2): 76-87

154374696. Seth, Ranjana, Zarin, M., Khan, Z. and Seth, R. K. 2016. Towards phytosanitary irradiation of Paracoccus marginatus (Hemiptera: Pseudococcidae): Ascertaining the radiosensitivities of all life stages. Florida Entomologist 99(sp2): 88-101

154374736. Seth, Ranjana, Zarin, M., Khan, Z. and Seth, R. K. 2016. Phytosanitary irradiation against Maconellicoccus hirsutus (Hemiptera: Pseudococcidae).Florida Entomologist99(sp2): 102- 113.

6. Hofmeyr, H., Doan, T.T., Indarwatmi, M., Seth, Ranjana and Zhan, G. 2016. Development of a generic radiation dose for the postharvest phytosanitary treatment of mealybug species (Hemiptera: Pseudococcidae). Florida Entomologist 99(sp2): 191-196.

7. Seth, Ranjana, and Saxena , D.M. (1991). Impact of acetone on the growth of Tetrahymena when used as a solvent for lindane(-HCH). J. Appl. Zool. Res. 2(1):9-12.

8. Saini, A., Mathur, Ranjana, and Saxena , D.M. (1990). Bioconcentration of organophosphorus insecticides by the ciliate protozoan, Tetrahymena thermophila. Pesticide Research Journal 2(2): 123-126.

9. Mathur, Ranjana, and Saxena, D.M. (1989). Influence of HCH isomers on accumulation and toxicity studies in Saccharomyces cerevisiae. J. Environ. Biol.., 10 (2-supp) : 227 - 235.

10. Mathur, Ranjana, and Saxena, D.M. (1988). Effect of HCH isomers on cell shape and size of a freshwater ciliate, Tetrahymena pyriformis. J. Advanced. Zool., 9 (2):76-78.

11. Mathur, Ranjana, and Saxena, D.M. (1987). Accumulation of Hexachloro-cyclohexane (HCH) isomers by Tetrahymena pyriformis under laboratory conditions. Water, Air and soil Pollution, 32: 323-327.

12. Mathur, Ranjana, and Saxena, D.M. (1986). Effects of Hexachloro-cyclohexane(HCH) isomers on growth and their accumulation in the blue-green alga, Anabaena sp.(ARM 310). J. Environ. Biol. 7(4): 239-251

13. Mathur, Ranjana, and Saxena, D.M. (1986). Inhibition of macromolecular synthesis in a ciliate protozoan, Tetrahymena pyriformis by Hexachloro-cyclohexane(HCH) isomers. Acta protozoologica, 25(4): 397-410.

14. Mathur, Ranjana, Saxena, D.M. and Agarwal, H.C.(1984). Growth of a ciliate protozoan, Tetrahymena pyriformis in the presence of different isomers of Hexachlorocyclohexane (

HCH). Acta protozoologica, 23: 165-174

15. Seth R. K., Vimal N., Sengupta M., Angmo N., Dhal M. K. and Seth, Ranjana. 2018. Coupling biorational tactics with radio-genetic F1 Sterility technique for an effective integrated pest management against lepidopteran insects. Int J Zoo Animal Biol. 1(4): 000120.