



## Md. Aftab Hossain: Bangladesh

### Phytosanitary Irradiation Doses to Control Tobacco Budworm and leaf miners.



Mr. Md. Aftab Hossain works at the Bangladesh Atomic Energy Commission in Dhaka, Bangladesh. Working in the Insect Biotechnology Division of the Commission's Institute of Food and Radiation Biology, Aftab does research to accommodate the nuclear and advanced biotechnological facilities for insect pest control and management. The Insect Biotechnology Division is involved in two major areas of research: The first is integrated management of crop infesting insect pests (fruit flies) and medically important insect vectors (mosquitoes) using nuclear and biotechnological approaches. The second is the phytosanitation of fresh fruits and vegetables using gamma radiation to meet the quarantine regulations in export.

Aftab is currently undergoing training at the United States Department of Agriculture, Agricultural Research Service in Weslaco, Texas. During his fellowship, under the direction of Dr. Guy Hallman, Aftab is working on a project called Phytosanitary irradiation doses to control tobacco budworm, *Heliothes virescens* (Lepidoptera: Noctuidae) and leaf miners, *Liriomyza trifolii* (Diptera: Agromyzidae). As part of his training, he is developing a phytosanitary irradiation quarantine dose for *H. Virescens* in order to prevent the reproduction and adult's movement from one territory to another, which is the most radiotolerant state of *H. Virescens*. With this study, the *H. virescens* were radiated with gamma radiation (80 Gy) by Husman irradiator (Cs 137) and were reared in artificial diet.

Along with this, Aftab irradiated *L. trifolii* that was reared in green bean plants with gamma radiation (120 Gy) to prevent leaf mines of the most radiotolerant stage (late aged pupae). The objective of this is to develop phytosanitary irradiation quarantine doses for *L. trifolii*. So far, the results are promising because no leaf mines were found on green bean leaves in irradiated batch rearing cages while several leaf mines were found in the control batch rearing cage. After completion of his training in the U.S., Aftab will return to Bangladesh to share what he has learned with the Institute of Food and Radiation Biology.

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