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Jerzy J. Lipa

**Sygonyavev E.S., Monastyrskii A.L. 1999. An Introduction in Ecological Integrated Lepidopteroid Rice Pest Management in North Vietnam (*Lepidoptera: Pyralidae*). Russian-Vietnamese Research and Tropical Centre. Hanoi 291 pp. (In Russian and English).**

From point of view of pesticide application, rice occupies second place after cotton, and on the whole the quantity of pesticides used on these two crops consists of more than half of that used all over the world.

The paddy-rice is a main crop in Vietnam being grown on an area over 6,6 million hectares. To secure satisfactory yield 5-6 insecticide treatments are performed during season in the Mekong River delta and 2-3 treatments in Red River delta. Negative effects of

heavy use of chemical insecticides was the reason that in 1989 Vietnam joined the Regional Inter-Country Programme in South and Southeast Asia on IPM, and owing to FAO support developed IPM system using the Indonesia's IPM model, however without IPM technology scheme fitted to local conditions.

In 1993 the Vietnam-Russia Tropical Center began ecological supporting studies on the integrated rice pest management in the Red River Delta in North Vietnam with the following main tasks:

- to develop of well grounded economic thresholds for the main noxious lepidopterans;
- to evaluate share of natural enemies activity in the formation of resistance of the agroeco-system to pest damage;
- analysis of pest populations dispersions and elaboration of monitoring methods;
- elaboration of the IPM program against major noxious lepidopterans in Red River Delta.

The authors which are staff members of the well known Institute of Zoology of the Russian Academy of Sciences in Sankt Petersburg concentrated their research on two principal lepidopterans rice pests *Cnaphalocricis medinalis* Guenee and *Scirpophaga incertulas* Walker both belonging to *Pyralidae* family. However, within the elaborated IPM system also other principal rice pests were considered such as *Niloparvata lugens* Stal (*Homoptera*, *Delphacidae*).

Results of field experiments and field observations conducted during 1993-1996 are presented in six chapters. Chapter 1. Scientific and applied aspects of the ecological integrated pest management (EIPM) conception; Chapter 2. Entomological aspects of the rice agro-ecosystem; Chapter 3. Peculiarities of the approaches to an identification of arthropod harmness; Chapter 4. An analysis of the role of natural control factors in formation of an agroecosystem stability; Chapter 5. The process of decision making on rice protection activity; Chapter 6. Tools and methods of EIPM.

Out of very many interesting findings described in particular chapters of special interest is review of principal natural enemies: 15 predators and 17 parasitoids of five rice major pests *Cnaphalocricis medinalis*, *Scirpophaga incertulas*, *Parnara guttata*, *Naranga oenescens* and *Niloparvata lugens*.

This interesting and valuable book will be a source of many valuable data and inspirations to persons dealing with IPM in rice and other crops.

Jerzy J. Lipa