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Aboveground arthropod pest and predator diversity in irrigated rice (*Oryza sativa* L.) production systems of the Philippines

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Abstract

Abundance and diversity of pest and predator species at different stages of crop growth were studied in chemical insecticide-treated and untreated irrigated rice production systems of the Philippines in a single season. Immigration of pest and predator species to the rice fields from the adjoining vegetated patches was also monitored for assessing the potential role of the latter group in natural biological control. Dominant pest species during the tillering stage were plant and leafhoppers belonging to the Hemipteran families of Cicadellidae and Delphacidae. Higher pest species diversity was recorded during the milk stage of the crop in both treatments compared to other pheno-phases. Among the predator species, *Micraspis crocea*, *Conocephalus longipennis*, *Metioche vittaticollis*, *Agriocnemis* spp., and *Cyrtorhinus lividipennis* were abundant. Malaise trap catches indicated the movement of pests, namely *Recilia dorsalis*, *Cofona spectra*, *Nephotettix* spp., *Nilaparvata lugens*, and *Eysarcoris* spp. and predator species such as *M. crocea*, *Agriocnemis* spp., and *M. vittaticollis* from the adjoining areas. Diversity and richness indices of pest and predators were higher in the untreated fields compared to the insecticide-treated fields. Highest pest species richness was found during the tillering stage, while predator species richness was highest during the milk stage. Implicit in this is that as the pest species increased, the predator diversity followed.

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