ABSTRACT

Pest control by utilizing ecosystem services through the presence of natural enemies (predators and parasitoid) is a more environmentally friendly system. The diversity and abundance of natural enemies are influenced by the complexity of agroecosystem. This study aims to determine the effect of the complexity of rice agroecosystems on the diversity and abundance of natural enemies and the potential for controlling natural enemies of rice pests on various complexities of agroecosystems. The study was conducted using a survey method on three plots of simple agroecosystem paddy fields (conventional) and three plots of complex agroecosystem paddy fields (surjan) in Pleret Village, Panjatan Subdistrict, Kulon Progo Regency, Yogyakarta. Sampling of natural enemies were collected using the sweep net, yellow sticky trap and pitfall trap in 35, 50, 65 and 95 days after rice planting. The results showed that the species richness of natural enemy in the complex agroecosystem paddy fields (H' = 1,472) higher than simple agroecosystem paddy fields (H' = 1,119), and the species richness index of natural enemies of both agroecosystems was classified as moderate. The abundance of natural enemies in the complex agroecosystem paddy fields (D = 0,632) higher than simple agroecosystem paddy fields (D = 0,507) and abundance index of natural enemies of both agroecosystems was classified as high. Based on the level of species richness, abundance and evenness of natural enemies in the complex agroecosystem paddy fields has higher potential to control pests than simple agroecosystems.

Keywords : Biodiversity, Predators, Parasitoid, Surjan, Conventional.