

## Evaluation of Rice Pest Incidences Associated with Different Plant Establishment Methods in Rice Cultivation

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Rice (*Oryza sativa* L.) is the major food crop in Sri Lanka. Insect pests are one of major constraints in rice production. The insect pest population shows fluctuations depending on various abiotic and biotic factors of an area. The effect of planting methods and plant density on insect pest abundance is varied and complex. There is dire need for change in rice establishment methods to improve productivity, economics and long-term sustainability. Therefore, evaluation of rice pest incidences at different plant establishment methods is an urgent need. Four plant establishment methods; Machine transplanting, Parachute, Seed broadcasting and manual transplanting were studied within 3 consecutive seasons; 2017 *Yala*, 2017/18 *Maha* and 2018 *Yala*. Few major pests occurred during the crop cycle of paddy including rice thrips (*Stenchaetothrips biformis*), leaf folder (*Cnaphalocrocis medinalis*), stem borer (*Scirpophaga incertulas*), gall midge (*Orseolia oryzae*) and paddy bug (*Leptocoris oratorius*) was counted and temperature, relative humidity and final yield were recorded. The experiment was arranged in a Randomized Complete Block Design with three replicates. The abundance of selected pests in three replicates, each measuring 50 m<sup>2</sup> area of differently established fields were counted. The final results were revealed that, due to high plant density, seed broadcasting establishment method utilized in rice cultivation has shown significantly difference from other establishment methods and had experienced highest amount ( $P < 0.05$ ) of rice thrips, leaf folder and paddy bug incidence in three cultivation seasons within the studied period. But, there was no any considerable variation of temperature (26.4-30.5 °C), relative humidity (64.3-70.9 %) and yield (11-12 kg) among four different crop establishment methods in each cultivation season.

**Keywords:** Cultivation seasons, Pest abundance, Plant establishment methods, Rice