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## Efficacy of Weed Control by Golden Apple Snail (*Pomacea canaliculata*) in Environment-friendly No-till Rice Paddy Fields

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### [Introduction]

Weed management under organic farming systems is very problematic since organic agriculture dose not allow synthetic herbicides. Bioherbicide is needed to develop for weed management in organic agriculture systems. We investigated the influence of the input time of golden apple snail (GAS, *Pomacea canaliculate*) on the weed control to suggest and introduce this environment-friendly weed management technique in no-tillage rice cultivation.

### [Materials and Methods]

This experiment was conducted in environment-friendly no-tillage rice paddy field in Yecheon, Gyeongsangbuk-do. The objective of this research was the method for weed management through the study on the effect of weed control by input time (applied at 21, 14, 7 and 0 days before transplanting) of young GAS(1.5kg/10a).

### [Results and Discussion]

The effectiveness of weed control as affected by GAS when applied at 21, 10, 7, and 0 days before transplanting was 91%, 90%, 80%, and 65%, respectively. The young GAS, when applied 21~7 days before transplanting at 1.5 kg/10a (approximately 7,500ea) provided 100% control of *Scirpus juncooides*, *Persicaria hydropiper*, *Lindernia procumbens*, *Aneilema japonica*, and *Monochoria vaginalis*. The variations in the input time of GAS caused significant differences in the number of tillers and the harvested yield, but no significant differences were found in the plant height. Approximately 68%~72% of the rice yield obtained in conventional cultivation by the use of herbicides was obtained through the utilization of apple snails 21~7 days before transplanting (DBT), was reached. These data indicate that the application of young GAS before transplanting is an efficient method for weed management in environment-friendly no-till rice paddy fields.

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