

Barn Owl as Biological Control Agent of Rats in Rice Field

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The role of barn owl *Tyto alba* in controlling rice field rats in paddy fields was investigated based on the census of barn owl population, damage census on rice crop and baiting requirements in Selangor, where the barn owl project has been implemented, over the period from 1997 to 2000. Rice crop loss due to rat activities at the start of the implementation of the project ranged from 5 to 10%, but was maintained at less than 1% throughout the census period. Monthly occupancy rates and proportion of nest boxes with eggs and owlets showed that barn owl population dynamics coincides with the rat reproductive cycle.



Barn Owl

Modelled under two management strategies; one that relies entirely on baiting and another that integrates baiting with the natural propagation of barn owls, *Tyto alba*, shows that the need for baiting when integrated with barn owl is reduced by more than 80%. The barn owl, *Tyto alba*, therefore can increase rice production and at the same time reduce the risk of environmental hazards from excessive use of rodenticides

One factor that may determine population size of the barn owl is nest box density. Nest site has been reckoned as an important population-limiting factor. In order to determine an owl density that is viable for a sustainable rat control, home range study using radio telemetry was conducted. Results show the home ranges of breeding females are relatively small i.e. less than 3 ha. Females occupying neighbouring nest boxes maintained exclusive ranges, which is an indication of territorial behaviour. However males ranged over extensive area and their presence are tolerated by unrelated females. This shows that a high density of boxes can be built in rice field to increase population of birds for adequate control of rats.

The use of barn owl as biological control agent of rats is becoming an attractive option in most rice field ecosystem in Southeast Asia. Efforts of propagating the owl in the rice fields in Sarawak are currently underway. Trials have also been conducted in parts of Indochina, and in South Asia. The owls have also been propagated in Africa as well as Australia for rodent control in various field crops.

Reader Enquiry

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