Movements of the ricefield rat, Rattus argentiventer, near a trap-barrier system in rice crops in West Java, Indonesia

P. R. BROWN [A1], L. K.-P. LEUNG , SUDARMAJI [A2], G. R. SINGLETON [A1]

[A1] CSIRO Sustainable Ecosystems, GPO Box 284, Canberra, ACT, 2601, Australia
[A2] Research Institute for Rice, Jl Raya No. 9 Sukamandi-Subang, 41256, West Java, Indonesia
[A3] Present address: School of Animal Studies, University of Queensland, Gatton, Qld 4343, Australia

Abstract:

The movements of the ricefield rats (**Rattus argentiventer**) near a trap-barrier system (TBS) were assessed in lowland flood-irrigated rice crops in West Java, Indonesia, to test the hypothesis that a TBS with a 'trap-crop' modifies the movements of rats within 200 m from the trap-crop. The home range use and locations of rat burrows were assessed using radiotelemetry at two sites, one with a TBS with trap-crop (Treatment site, the crop inside the fence was planted 3 weeks earlier than the surrounding crop) and the other with a TBS without trap-crop (Control site, the crop inside the fence was planted at the same time as the surrounding crop). Each TBS was a 50250 m plastic fence with eight multiple-capture rat traps set at the base. More than 700 rats were caught in the TBS with trap-crop, whereas only 10 rats were caught in the TBS without trap-crop. The home range size of females was significantly smaller at the Treatment site (0.96 ha) than the Control site (2.99 ha), but there was no difference for males. Seventy-eight per cent of rats caught in the TBS and fitted with radiocollars had their daytime burrow locations within 200 m of the TBS. We could not determine if the rats caught in the TBS were residents or transients according to demographic parameters. Our results support the hypothesis that a TBS with a trap-crop protects the surrounding rice crop out to a distance of at least 200 m.

Keywords:

Radiotelemetry, Home Range, Trap-barrier System

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