

The efficacy of a trap–barrier system for protecting rice nurseries from rats in West Java, Indonesia

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Abstract. The rice-field rat, *Rattus argentiventer*, causes substantial damage to freshly sown rice nurseries in West Java, Indonesia. Rice nurseries surrounded by a plastic barrier with multiple-capture rat traps (trap–barrier system; TBS), or a barrier system (BS) consisting of plastic and no traps, were compared for their effectiveness to reduce rodent impacts against untreated nurseries that did not have a barrier to rats. There were 10 replicates of each treatment and the study was conducted for one wet and one dry season. The study clearly demonstrated the substantial impact of rats on unprotected rice nurseries for the two major crops in West Java—the dry and wet season rice crops. Both the TBS and BS provided significant protection to rice nurseries. There was no rat damage in nurseries protected by a TBS in either season. In the 1996 dry season, nurseries surrounded by a BS had 7% (± 2.0 se) of seedlings damaged, whilst those with no barrier had 88% (± 8.1) of seedlings damaged. In the 1996/97 wet season, nurseries surrounded by a BS had 14% (± 3.1) of seedlings damaged, whilst those with no barrier had 97% (± 2.1) of seedlings damaged. The mean number of rats caught per day per trap in a TBS led to the recommendation of four traps per nursery in the dry season but only two in the wet season. Whether farmers opt to use a TBS or BS will depend on the weight they give to having approximately 10% of their seedlings damaged by rats versus the expense of purchasing four live-capture rat traps.