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# Evaluating Habitat Manipulation as a Strategy for Rodent Control in Agricultural Ecosystems of Pothwar Region, Pakistan

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**Abstract :** Habitat manipulation is an important technique that can be used for controlling rodent damage in agricultural ecosystems. It involves intentionally manipulation of vegetation cover in adjacent habitats around the active burrows of rodents to reduce shelter, food availability and to increase predation pressure. The current study was conducted in the Pothwar Plateau during the respective non-crop period of wheat-groundnut (post-harvested and un-ploughed/non-crop fallow lands) with the aim to assess the impact of the reduction in vegetation height of adjacent habitats (field borders) on rodent's richness and abundance. The study area was divided into two sites viz. treated and non-treated. At the treated sites, habitat manipulation was carried out by removing crop cache, and non-crop vegetation's over 10 cm in height to a distance of approximately 20 m from the fields. The trapping sessions carried out at both treated and non-treated sites adjacent to wheat-groundnut fields were significantly different ($F\ 2,\ 6 = 13.2$, $P = 0.001$) from each other, which revealed that a maximum number of rodents were captured from non-treated sites. There was a significant difference in the overall abundance of rodents ($P < 0.05$) between crop stages and between treatments in both crops. The manipulation effect was significantly observed on damage to crops, and yield production resulted in the reduction of damage within the associated croplands ($P < 0.05$). The outcomes of this study indicated a significant reduction of rodent population at treated sites due to changes in vegetation height and cover which affect important components, i.e., food, shelter, movements and increased risk sensitivity in their feeding behavior; therefore, they were unable to reach levels where they cause significant crop damage. This method is recommended for being a cost-effective and easy application.

**Keywords :** agricultural ecosystems, crop damage, habitat manipulation, rodents, trapping
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