

Barn Owl Nest Box Management Practices and Their Impacts on Occupancy Rates in IOI Organic Oil Palm Plantation

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This study evaluates the impact of improved management and maintenance of barn owl nest boxes on barn owl occupancy rates and population dynamics in organic oil palm plantations. Conducted between 2022 and 2023 in two IOI estates in Kluang, Johor, the research covered 1 128 hectares, assessing nest box conditions and occupancy rates quarterly. The results revealed significant improvements: Pamol Timur Estate occupancy rate increased from 63.27 to 86.44 per cent, while Pamol Barat Estate rose from 34.48 to 89.47 per cent. This led to a total of 119 occupied boxes by December 2023. The number of adults, chicks, and eggs also saw substantial growth, particularly in Pamol Barat Estate, where adult numbers rose from 13 to 41, and chicks from 17 to 50. Results revealed fluctuations in fresh rat damage corresponding to changes in the barn owl population. Statistical analysis showed a positive correlation between box conditions and occupancy rates ($p < 0.01$), emphasising the importance of using high-quality materials and regular maintenance. Challenges in manual tracking highlighted the need for Global Positioning System (GPS) tagging and action cameras for accuracy. This study concludes that enhanced management and maintenance of barn owl boxes are vital for sustaining barn owl populations in oil palm plantations.

Keywords: Barn owl, boxes management practices, occupancy rates.