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A systematic review on Shorea species as planting stocks for forest restoration programme in Malaysia

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Structured Abstract

Background: *Shorea* species have shown great promise as effective and beneficial candidates for forest restoration programs in Malaysia, considering their native status in the country's ecosystems and their ability to produce high-quality and valuable log products. These species also play important ecological roles, such as canopy formation. However, successful utilization of *Shorea* species in restoration programs requires careful assessment of factors like soil conditions, seed handling, light requirements, competition, disease and pest vulnerability, and associated costs.

Methods: A comprehensive review was conducted, focusing on recent advancements in research from the past few decades, with a specific emphasis on references from the last five years. The primary objective of this review was to assess the suitability of *Shorea* species for enrichment planting in forest restoration initiatives in Malaysia.

Results: This article highlights the considerable potential of *Shorea* species as effective and beneficial additions to forest restoration programs in Malaysia. A comparative analysis between enrichment planting techniques and other forest restoration methods is also provided. The article aims to offer valuable insights into the utilization of *Shorea* species in Malaysia's forest restoration efforts and underscores the importance of considering various ecological factors and maintenance requirements for ensuring successful restoration outcomes.

Conclusion: *Shorea* species demonstrate their effectiveness and beneficial nature in forest restoration programs in Malaysia. However, their successful integration requires meticulous consideration of multiple factors, including soil conditions, seed handling, light requirements, competition, disease and pest vulnerability, and associated costs, all of which are essential for optimizing restoration efforts amidst significant environmental challenges.

Keywords: *Shorea*, Dipterocarp trees, Enrichment planting, Forest restoration

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