

Land Productivity of Seedling and Budded Cashew Plants under Plantation Conditions in the Dry Zone (DL3) of Sri Lanka

H. M. A. S. Jayawardana^{1*}, P. M. A. P. K. Wijetunge¹, D.P.S.T.G. Attanayaka², and D. C. Abeysinghe³

¹Research Unit, Sri Lanka Cashew Cooperation, Puttalam, Sri Lanka

²Horizon Campus, Malabe, Sri Lanka

³Department of Plantation Management, Wayamba University of Sri Lanka, Sri Lanka.

*h.m.a.srikantha@gmail.com

Cashew (*Anacardium occidentale* L.) is an important plantation crop in Sri Lanka's dry zone, where improving land productivity is essential for sustainable development. This study evaluated seedling and budded cashew plants under plantation conditions in the Dry Zone Low Country (DL3) of Sri Lanka. The experiment was established in 2011 at the Puttalam Plantation of the Sri Lanka Cashew Corporation using a randomised complete block design (RCBD) with two replicates. WUCC 19 budded plants and seedlings were planted at 6 m × 6 m (80 plants acre⁻¹) and 9 m × 9 m (40 plants acre⁻¹), respectively, based on recommended spacing systems. Each plot measured 0.5 acre and contained 20 seedling plants or 40 budded plants. Annual nut yield data were recorded to 2025, and land productivity was calculated as kg acre⁻¹ year⁻¹. Data were analysed using ANOVA, and mean separation was performed using Tukey's HSD test at $p \leq 0.05$. Budded plants initiated bearing in 2013, while seedlings began in 2015. At the initial productive stage (2015), land productivity was 28 kg acre⁻¹ year⁻¹ for budded plants compared to 4 kg acre⁻¹ year⁻¹ for seedlings. In 2020, productivity reached 576 kg acre⁻¹ year⁻¹ and 200 kg acre⁻¹ year⁻¹, respectively. At maturity (2025), budded plants achieved 772 kg acre⁻¹ year⁻¹ compared to 290 kg acre⁻¹ year⁻¹ for seedlings ($p < 0.05$). Differences in productivity reflect combined effects of planting material and spacing. Budded plants provided earlier economic returns due to earlier bearing. Limited to two replicates; more replicates and multi-location trials are recommended. Overall, the findings indicate that budded cashew plants exhibit earlier bearing and higher land productivity than seedlings, highlighting their potential for improving cashew production in Sri Lanka's dry zone.

Keywords: Budded plants, Cashew, Land productivity, Seedling plants, WUCC 19