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Diversity assessment of old seedling teas in IU3c agro-ecological region in the Uva region

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Tea [*Camellia sinensis* (L.) O. Kuntze] was introduced to Sri Lanka in the form of seeds and old seedling plantations are a valuable germplasm resource. The largest Agro-Ecological Region of the Uva region, IU3c, was selected and diversity assessment was done using transect and point sampling methods to identify diversity hotspots and conserve them in *Wewesse*, *Dammaria B*, *Nahavilla*, and *Neluwa* estates, during 2022. Phenotypic characterization was done within 5 × 5 m, 10-20 plots per field using multiple traits, *viz.* tree habit, young leaf pigmentation, petiole pigmentation, young leaf pubescence, leaf shape, leaf upper surface, leaf waxiness, leaf size, waviness of leaf margin, and shoot density. Shannon Diversity Index (SDI) was calculated for each and every field, and estate respectively. Among 21 fields at the *Wewesse*, field no. 12 recorded the highest SDI of 2.92 and 9A recorded the lowest of 2.59. Among eight fields at the *Dammaria B*, 1C recorded the highest of 2.80 and 1B recorded the lowest of 2.70. Among 20 fields in *Nahavilla*, 6B2 recorded the highest SDI of 2.79 and fiend no. 5 recorded the lowest of 2.60. Among 11 fields at *Neluwa*, 7A recorded the highest SDI of 2.89 and field no. 5 recorded the lowest SDI of 2.62. Across all fields in all estates, both the highest and lowest SDI values were recorded in fields 12 and 9A of *Wewesse*. When diversity was evaluated by considering estate as a sampling unit, *Wewesse* recorded the highest SDI of 3.05 and the lowest value of 2.96 was recorded at the *Neluwa*. Maximum diversity was observed among tree habit, young leaf pigmentation, young leaf pubescence, leaf waxiness, and shoot density in *Wewesse*. Identified diversity hotspots will be conserved and used for estate cultivar selection program to ensure sustainability of Sri Lankan tea industry.

Keywords: Diversity assessment, Old seedling teas, Phenotypic characterization, Shannon diversity index

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