Seedling Composition and Relative Growth in Dieback-affected Tropical Montane Cloud Forest in Horton Plains National Park, Sri Lanka

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This study evaluates the composition and growth of naturally grown tree seedlings in dieback affected forests in Horton Plains National Park. Forty plots (plot size: 1 m^2) were established under disturbed (20 plots) and relatively undisturbed forests (20 plots). Seedlings were tagged and root collar diameter and height of tagged seedlings were measured in 03 month intervals for a year, while recording new recruits. A total of 373 seedlings representing 21 species and 16 plant families including Lauraceae (19.1%), Rubiaceae (16.7%), Symplocaceae (16.4%), Euphorbiaceae (15.6%), Elaeocarpaceae (11.3%) and Aquifoliaceae (5.1%) were recorded. Frequently encountered seedlings were *Neolitsea fuscata* (15.9%), *Glochidion pycnocarpum* (15.6%), *Elaeocarpus glandulifer* (10.2%), *Symplocos sp.* (16.4%), *Ilex walkeri (5.1%), Actinodaphne speciosa* (3%), and *Syzygium sp.* (3.2%). Mean height increment rate (cm month-^{1}) was greatest in *Sarcococca brevifolia* (0.5 ± 0.08), in disturbed condition and in undisturbed condition it was greatest in *E. glandulifer* (0.4 ± 0.06). Mean height increment rates were not significantly different ($p > 0.05$) in *A. speciosa, N. fuscata, Syzygium sp., Symplocos sp.* and *Meliosma simplicifolia* in both conditions. In disturbed condition, mean root collar diameter increment rates (min month)) of the most abundant species were *G. pycnocarpum* (0.03 ± 0.01) and *Symplocos sp.* (0.02 + 0.00) while in undisturbed condition, it was *N. fuscata* (0.03 + 0.01) and *Symplocos sp.* (0.04 ± 0.01). Mean root collar diameter increment rates of the *Syzygium sp., Symplocos sp., N. fuscata, I. walkeri,* and *A. speciosa* were not significantly different ($p > 0.05$) in both conditions, however significantly higher in both *S. brevifolia* and *Lasianthus sp* ($p > 0.05$) in disturbed condition. Knowledge generated from this study provides baseline information on growth performance of seedlings of tropical montane forests and that can support for the assistant restoration of dieback affected sites in the future.

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