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THE POSSIBLE ROLE OF *STROBILANTHES* SP. ON REGENERATION OF DIE-BACK FORESTS OF HORTON PLAINS NATIONAL PARK

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Some natural forest communities including the Upper Montane Rain Forest (UMRF) of Horton Plains, Pidurutalagala ridge, Kobonilgala near Corbett's gap in Knuckles range and the summits of Hakgala Strict Nature Reserve in Sri Lanka are seriously deteriorating due to stand level dieback. The extent of forest die-back in the Horton Plains National Park (HPNP) was estimated as 654 ha of forest, representing 24.5 % of the forests and 17.2 % of the total area of the national park. Die-back is severe in the Totapolakanda and Kirigalpotta areas, where more than 75 % of the canopy trees were dead and the remaining trees showing signs of die-back. Larger trees were more prone to die-back than smaller ones. Forest regeneration in these two areas was very slow. Although, some previous reports attribute the die-back to the severity of the weather conditions, there is little information available on the causes of die-back, the process of and factors controlling the regeneration of die-back areas. It has been reported that damage caused to tree barks browsing by Sambar deer in the Horton Plains is significant. In this research, study sites were selected using a remote-sensed map of HPNP and two die-back forest types were recognized based on the presence or absence of *Strobilanthes* spp. beside the composition of the vegetation. Eight, *Strobilanthes* free or *Strobilanthes* dominated 50 m X 20 m transects (further divided in to five 20 m X 10 m segments) were selected randomly. Saplings (< 5 cm dbh) in those segments were recorded. Specimens were taken from unidentified individuals and were identified using the specimens in the national herbarium. *Strobilanthes* cover in *Strobilanthes* dominated die-back sites were above 70% - 80%. In the sites dominated with *Strobilanthes* spp, 6 - 13 forest tree saplings were recorded, and the light intensity of the ground was 15-30 µmol.m^{-2}s^{-1}. In contrast, *Strobilanthes* free - regenerating - forest die back sites consists of 28 - 70 tree saplings and receive 50-70 µmol.m^{-2}s^{-1} to the ground level. The number of tree saplings observed in the *Strobilanthes* free sites is significantly higher ($p = 0.0006$) than the number of saplings found in the *Strobilanthes* dominated sites. Further, the number of trees > 1 m height was higher in the *Strobilanthes* free sites (32-57 individuals) than in the *Strobilanthes* dominated sites (12-17 individuals). Our results revealed that there is an impact of *Strobilanthes* cover on availability of saplings of the other forest species. Further, it seems that the growth and development of the tree saplings were also affected by the *Strobilanthes* cover. *Strobilanthes* in the dieback forest in HPNP seems to act as a barrier and limits necessary conditions such as light, soil surface and nutrients for the growth of some of the tree species, and may result in the delay of regeneration of the die-back forest. However, further observations are required to determine whether *Strobilanthes* vegetation is reestablished and acts as a barrier periodically in the same area or remains as *Strobilanthes* free, regenerating forest stands.