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**SEEDLING GROWTH OF FOUR
SYZYGIVM SPECIES IN
KEKILLA FERN LAND AND
PINUS IN THE BUFFER ZONE
OF SINHARAJA RAINFOREST**

BY

Dekshika Charmini Kodituwakku (B.Sc)

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Department of Forestry and Environmental Science,
Faculty of Graduate Studies,
University of Sri Jayewardenepura,
Nugegoda,
Sri Lanka.

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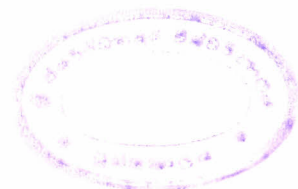
ABSTRACT

Sinharaja World Heritage Site is one of the least disturbed and biologically unique lowland forest now remaining in Sri Lanka. Certain parts of the Sinharaja forest are covered with Kekilla (*Dicranopteris linearis*) fernlands and *Pinus* plantation. Four sites of Kekilla fernlands and four sites of *Pinus* (*Pinus caribaea*) were selected for the study.

Seedlings of four species of *Syzygium* (*S. firmum* Thw., *S. makul* Gaertn., *S. operculatum* (Roxb) Niedz, *S. rubicundum* Wight and Arn). were established as field trials in *Pinus* and Kekilla and their growth was observed for one and half years. The Kekilla site is exposed to full sun while the *Pinus* understorey is exposed to partial shade light.

Performance of *Syzygium* seedling was measured by the number of leaves, the single leaf, the total leaf area and survival rates at the end of one and half years. However, the seedlings height was measured half yearly in the two habitats. Four soil samples were collected from each of the replicated sites of Kekilla and *Pinus*. Each soil sample collected, contained five sub samples of soil from five different locations. Five soil sub samples so collected were pooled and mixed in a polythene bag in order to represent a replicated site.

Results indicated that there was a significant difference in the growth performance measurements among the species in the two micro habitats *Pinus* and Kekilla.. Despite higher nutrient availability in the Kekilla (*Dicranopteris linearis*) all the seedlings

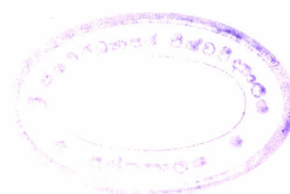


performed better under *Pinus* understorey as they are mostly shade tolerant species. The final height increment for *S. firmum* favoured the shaded light habitat of *Pinus* followed by *S. makul* while full sunlight Kekilla habitat *S.operculatum* performed well. *S. rubicundum* showed poor growth performance in both sites.

It is recommended that in the buffer zone with *Pinus* monoculture can be successfully converted into a broad leaf forest type by using *S. firmum* and *S. makul* species which increase the available food resource for the fauna species in the forest. In Kekilla fernland *S.operculatum* is recommended.

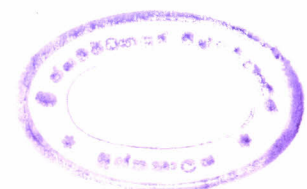
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