GROUND FLORA IN DIFFERENT AGED EUCALYPTUS AND ACACIA PLANTATIONS

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Ground flora of 4 and 6 years old plantations of Eucalyptus camaldulensis and Acacia auriculiformis was studied in a low rainfall area of the Puttalam Forest Division. An adjoining area without tree cover was taken as the control.

The number of species/unit area ($25m^2$), total number of trees/unit area ($1m^2$) and dry weight of ground flora/ha were significantly higher ($p<0.05$) in Eucalyptus camaldulensis, the values being 27,264 and 16 as compared with those of Acacia auriculiformis, the values being 19,148 and 13. The area devoid of tree cover had the highest values in all the parameters (28, 267 and 27 respectively).

Four years old plantations of both species showed significantly higher ($p<0.05$) values for number of species, total number of trees and dry weight of trees per unit area (26, 242 and 18 respectively) as compared with the six year old plantations (18, 155 and 14 respectively) which implies a possible shading effect as the trees grew older.

Moisture content in soil did not show any significant difference ($p<0.05$) between the plantations tested. However, the pH, Cation Exchange Capacity, nitrogen, phosphorus, potassium and calcium contents were significantly higher ($p<0.05$) in ground flora per unit area Acacia plantations than in Eucalyptus.

The moisture content and nitrogen content increased with soil depths in these plantations while phosphorus, potassium and calcium contents were highest in the top 30 cm of the soil.

References: Lerner,R.H. and Evenari, M.(1961) The Nature of the germination inhibitor present in leaves of Eucalyptus rostrata.Physiologia Plant.,14:221-229.
Norby, R.J. and Kozlowski,T.T.(1980) Allelopathic effect of ground vegetation on natural regeneration of tree crop.Plant and Soil,57:363-374.
Bhaskar, V. and Dasappa (1986)Groung flora in Eucalyptus plantations of different ages. In: Eucalypts in India,Past,Present and Future, (eds. J.K. Sharma,C.T.S. Nair,K.Kedhanarth and S.Kondus),Kerala Forest Research Institute, India:pp. 213-224.
Poore,M.E.D. and Fries,C.(1987); Competition and Replacement. The Ecological Effects of Eucalyptus, Natraj Publishers, Dehra Dun: 50-58.