Tropentag, October 7-9, 2008, Hohenheim

"Competition for Resources in a Changing World:
New Drive for Rural Development"

Vegetative Propagation Study Using IAA on some of Sudanese Forest Trees in Kordofan, Sudan

Hassan Elnour Adam[1], Mohamed Elnour Taha[2]

[1] *Technische Universität Dresden, Institute of Photogrammetry and Remote Sensing, Germany*
[2] *University of Kordofan, Forestry and Range Department, Sudan*

Abstract

Vegetative propagation provides an alternative source of planting stock for a wide range of useful indigenous species. The research was carried in Kordofan state, which is characterised by sparsely vegetated as a result of the low amount of rainfall, deforestation and desertification. The study investigates the effects of different concentrations of growth hormone indole acetic acid (IAA) on five indigenous trees (*Acacia senegal*, *Acacia seyal* var. *seyal*, *Grewia tenax*, *Acacia tortilis* and *Boswellia payrifera*). The work was carried out by completely randomised block design with three treatments, two concentration of the IAA (1000 ppm, 1500 ppm) and the control (without hormone). Each treatment was applied to 45 cuttings divided in three replicates. Cuttings were taken from selected adult trees with length of 15 cm in early morning and planted in pure sandy soils in well-drained pots and put in a normal room temperature in the nursery. The data was analysed with analysis of variance. The results showed that the IAA growth hormone generally accelerated and enhanced the budding and rooting of the cuttings, but the effect of the IAA is different among the tree species. The overall effect of propagation hormone (IAA) on final budding was significant ($p < 0.05$, ANOVA), the highest length values being recorded in *Grewia tenax* (9.6 cm in 1500 ppm IAA) and *Acacia senegal* (4.2 cm in control). Cuttings of *Boswellia payrifera* and *Acacia tortilis* gave roots with the second concentration of IAA (1500 ppm) and the control treatments. The study concluded that, using of IAA for these forest trees gave successful propagation, and can be a source of uniform plants of known genotype and for the provision of genetic information. As a result of this study, the following recommendations may be made for using IAA in forest trees propagation under different concentrations, tree ages and environmental conditions.

Keywords: IAA, Kordofan, Sudanese forest trees, vegetative propagation

Contact Address: Hassan Elnour Adam, Technische Universität Dresden, Institute of Photogrammetry and Remote Sensing, Gerokstr. 27/0403A, 01307 Dresden, Germany, e-mail: hassan_adam@hotmail.com