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Effect of tree height and girth on gum yield of *Acacia senegal* L. In savanna woodland of Nigeria

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Abstract

Parameters influencing gum yield such as tapping techniques and soil mineral elements had earlier been investigated while there is dearth of information on effect of morphological characteristics on gum yield. This study investigated effects of height and girth on yield of *Acacia senegal* L. in the natural forest. Three heights and girth classes were purposely selected. Trees which heights and girth fell within those classes were selected randomly and tapped at constant height classes with varying girth classes. Exudates were collected, weighed and recorded according to height and girth class respectively. Descriptive and ANOVA results showed that when total tree height was lower than 2.0 m, gum yield increased as tree girth goes higher from 35 - 54cm (163.6 - 209.7g). Tree girth significantly affected gum yield ($p \leq 0.05$) and trees which total heights were lower than 2.0 m (maximum of 1.95m) with girth higher than 54cm (maximum of 65cm) produced the highest mean gum yield. Silvicultural practices that could bring about increase in girth such as early pruning and re-spacing which is applicable to plantation trees could also be carried out on the natural forest trees to increase gum yield.

Key words: Savanna woodland, *Acacia senegal*, height, girth, gum yield