Growth Performance and Fruit Production of *Sclerocarya birrea* (A. Rich.) Hochst. Provenances in Malawi

Violet Msukwa^{1,2}, Chimuleke R.Y. Munthali¹, Edward Missanjo³*, Clement Z. Chilima⁴, Simon A. Mng'omba⁵, Willie Sagona², Idah Mkwezalamba²

¹Department of Forestry, Mzuzu University, Private Bag 201, Luwinga, Mzuzu 2, Malawi ²Forestry Research Institute of Malawi, P.O. Box 270, Zomba, Malawi

³Department of Forestry, Malawi College of Forestry and Wildlife, Private Bag 6, Dedza, Malawi ⁴Department of Forestry Headquarters, P.O. Box 30048, Lilongwe 3, Malawi

⁵World Agroforestry Centre, ICRAF-Southern Africa Regional Programme, Chitedze Research Station, P.O. Box 30798, Lilongwe 3, Malawi

Domestication and commercialization of fruits from indigenous trees plays a major role in improving rural livelihoods through nutritional status, household income, entrepreneurial opportunities and economic empowerment. It also plays a role in promoting conservation of biodiversity and the sustainable use of natural resources. This study was conducted to assess twenty-two provenances of Sclerocarya birrea (A. Rich.) Hochst. planted in 1999 in Mangochi, Malawi. The trial was assessed for growth traits and fruiting at twelve years of age. The results showed that there were significant (P < 0.001) variations among the provenances on diameter at breast height (dbh), tree height, number of branches and number of fruits. Marracuene provenance from Mozambique had the largest (14.2±0.8cm) dbh, the highest number of branches per tree (21 ± 1) and number fruits per tree (795 ± 104) than the other provenances. Kalanga provenance from Swaziland was more superior in tree height $(6.10\pm0.93m)$ than the other provenances. There was a significant (P < 0.05) correlation between number of fruits and dbh and between number of fruits and tree height. A moderate relationship (r=0.405) was observed between number of fruits and dbh, while a weak relationship (r=0.347) was detected between number of fruits and tree height. However, there was no significant (P>0.05) correlation between number of fruits and number of branches. This implies that growth parameters are weak predictors for fruiting hence cannot be used in indirect selection. Therefore, genetic factor is the major determining factor of fruiting. Future studies should concentrate on the reproductive biology of S. birrea to facilitate understanding of fruit productivity prior to promoting the species for Agroforestry programmes.