**Evaluation the Impact Provenance and Taping Periods on Yield of Gum Arabic in North Kordofan State**

Adam, I. M1\*, Ali, A. H.1, Elkhidir, H. A1. Abdel Rahman, H. M1. Elnour, A.H2

*1El Obeid Agricultural Research Station -ARC- Sudan*

*2Department of Biology Science, Faculty of Science and Mathematics, Sultan Idris Education University (UPSI) 35900 Tanjung, Malim, Perak, Malaysia*

*\*Corresponding author: email:* [*idrimusa@hotmail.com*](mailto:idrimusa@hotmail.com)

*Tel: +249912584062, ORCID: 0000-0002-5021-5849*

**Abstract**

Gum arabic, a natural non-wood forest product, is an essential crop in Africa and Sudan; it plays a significant role for the poor farmer; it is considered as an influential peasant industry. The importance of gum does not depend on the fact that it has a wide range of uses from the food industry up to atomic reaction, but it greatly supports the farmer's livelihood. Due of the considerable reduction in product supply, this study is targeted to cover unstudied factors that could impact gum yield. Six provenances at three dates of tapping were arranged in to randomized complete block design and repeated for two seasons (2019/2020) - (2020/2021). The gum was collected for (7) pickings, and a computer software program (MSTAT-C) was used for statistical analysis of variance. The analysis result revealed a highly significant (p≤0.001) effect for the interaction of the experimental factors on gum arabic yield. The study found that Demokeya provenance origin groups were significantly the best yield in all pickings except the 7th at the mid-October tapping; (33.3, 42.91, 70.87, 79.67, 41.61 and 43.99 (Kg/ha) for the 1st, 2nd, 3rd, 4th, 5th and 6th pickings, respectively). The study concluded that we do not recommend moving acacia seed from one specific ecological zone to another when seed propagation is required. If it happens, consider a period of tapping for the origins of reproductive materials. A clear record of acacia seed provenance origin is recommended.