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Effect of Storage Methods on the Germination and Proximate Composition of *Treculia africana* Seeds

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Abstract

The seeds of *Treculia africana* (African breadfruit) are widely consumed in West African, especially among rural dwellers, thus playing important role in food security, economic empowerment and rural employment. The effect of storage methods (ambient room condition, refrigerator, deep freezer and under the sun) on the germination and proximate composition of *T. africana* seeds were investigated. Seeds were stored for eight weeks and were subjected to germination trials and proximate composition at the end of each week. Some seeds were sown immediately after extraction, which served as control. Germination of seeds under control and those subjected to some storage methods started 10 days after sowing. Both storage methods and storage duration had significant effect ($P < 0.05$) on the germination. For storage methods that did not kill the seeds, there was significant and progressive decrease in germination as storage duration increased. Storage in deep freezer, under the sun and ambient room condition (for longer than one week) resulted in the death of *T. africana* seeds. Better germination results were obtained from seeds stored in refrigerator for up to four weeks, beyond which further storage killed the seeds. Except for one to two weeks refrigerator storage, germination of seeds under control was significantly higher than that from all the storage treatments. Fresh *T. africana* seeds had carbohydrate, crude protein, moisture, crude fibre, ash and ether extract (fat) contents of 38.26, 17.67, 3.82, 15.85, 3.97 and 15.85%, respectively. The proximate compositions of the fresh seeds were generally higher than those of seeds subjected to storage treatments. Storage methods and storage duration significantly affected ($P < 0.05$) proximate values. Storing of *T. africana* seeds in the investigated methods will lead to poor or no germination, with germination becoming poorer as storage duration increases. Until appropriate storage method is discovered, the seeds will have to be sown immediately after extraction. The decrease in some proximate compositions of *T. africana* seeds subjected to different storage treatments implies a decrease in the nutritive values of the seeds, thus adversely affecting its importance as food (nutritive) supplement for humans and animals.

Keywords: African breadfruit, germination, proximate composition, storage methods, *Treculia africana*