

The potential for storage of fresh sweetpotato under tropical conditions: Evaluation of physiological changes and quality aspects

Van Oirschot Q.1, Ngendello T.2, Rwiza E.2, Amour R.2, Tomlins K.1, Rees D.1 and Westby A.1

¹Natural Resources Institute, University of Greenwich, Central Avenue, Chatham, Kent ME4 4TB, United Kingdom
²Lake Zone Agricultural Research and Development Institute, P.O. Box 1433, Mwanza, Tanzania

Abstract. This paper presents the results of two years of trials carried out on-station at Lake Zone Agricultural Research and Development Institute, Tanzania and gives recommendations for simple and low cost storage of fresh sweet potato. The optimum conditions for long term storage of sweet potato are well known, but little is known about the conditions in simple storage structures or if it is possible to influence them. To evaluate this, five different treatments were assessed. These were: effect of cultivar (SPN/0, Polista and Sinia B); level of root damage; lining with dried grass; ventilation; and store design (pits or clamps). Over a period of 18 weeks, the physiological changes of the roots in the stores were monitored via oxygen and carbon dioxide levels, relative humidity, temperature and root weight. The quality of the stored roots was assessed by sensory evaluation, external appearance and estimated market value. High temperatures and high weight loss of the roots indicated deterioration

during storage. This was most strongly associated with storing damaged roots as opposed to good quality ones. Store type (pit or clamp) or ventilation did not have a consistent effect on shelf-life and suggests that any combination of these designs can be used. Sensory properties may change during storage and acceptable characteristics were found up to 12 weeks of storage. Stored roots may taste sweeter than freshly harvested roots. Success of storage, however, is also determined by other factors than just store design and this is discussed.