Title Assessment of Crop Storage Structures in Swaziland

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Citation Proceedings: Abstract Summary, International Conference on Agricultural, Food and Biological Engineering & Post Harvest/Production Technology, Sofitel Raja Orchid Hotel, Khon Kaen, Thailand, 21-24 January 2007. 204 p.

Keywords Crop storage structures; food relief; food security; metal tank; postharvest losses; subsistence agriculture; Swaziland

Abstract

A survey was carried out to identify the types of crops popularly stored, the structures commonly used and problems experienced with produce storage in the Kingdom of Swaziland. Respondents included government storage facilities, non-governmental organizations providing food relief, millers, large-scale farms, homesteads and artisans who fabricate metal tanks. Maize, the national staple food, was stored by all homesteads essentially for family consumption. It was the commercial staple crop, the major raw material for the millers and the produce commonly distributed as food aid by the nongovernmental organizations. Significant quantities of groundnut, beans, sweetpotatoes, jugobeans and cowpeas were also stored. The crop storage structures found in use were metal silos, bags, platforms, cribs, metal tanks, concrete tanks, warehouse/rooms/old houses, metal/plastic drums, earthen/metal pots, plastic/metal buckets, bottles and tins. Metal silos and warehouses were the predominant structures used for large scale storage. The most common storage structure for maize by small-scale farmers was the metal tank as reported by 78.8% of respondents followed by cribs for both drying and storage (76.3%) and bags for the storage of maize, beans and groundnuts (65.7%). Moisture penetration and condensation, moulding, caking, insect infestation and rusting were some of the problems experienced with metal silos and tanks. In addition to these, the cracking of the solder used at the joints was a common problem with metal tanks. Bags often got torn by rodents that infested the produce. The absence of rodent guards in platforms and cribs encouraged rodent attack on produce stored in these structures. The use of inadequate -sized members and overloading often resulted in buckling and collapse of cribs and platforms. Losses of produce through these sources are a major problem. Remedial measures adopted towards solving these problems included the use of weevil and other types of tablets for produce storage, replacement of rusted and broken parts. The use of rodent glue and cats were also employed as control measures. About 48.2%, 35.7%, 70.3% and 81.2% of the respondents expressed satisfaction with the use of bags, platforms, cribs and metal tanks respectively. These groups and those who rated them as unsatisfactory requested for intervention by way of arresting the problems identified with existing storage structures and provision of new ones. The use of rat guards on cribs and platforms should be emphasized; riveted joints on metal tanks should be appropriately spaced to provide structural stability and the amount of solder to minimize or eliminate cracking used.