

The Postharvest Education Foundation

Postharvest Handling, Re-usable Plastic Crates and Storage of vegetables in Malawi Training Report

By

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January 2022

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1.0 Introduction

Lilongwe University of Agriculture and Natural Resources (LUANAR)-Bunda College Campus, through its faculty staff, Ms Jacinta Nyaika, received a Cooperative Venture grant amounting to the US \$ 1000 for use in conducting postharvest handling and management training to farmers. The venture was facilitated by the Postharvest Education Foundation (PEF). Locally, the training was done in collaboration with the Ministry of Agriculture and Food Security, Dedza District Agriculture Development Office. The proposal initially indicated collaboration with the African Institute of Corporate Citizenship (AICC) in Rumphi District. However, by the time the training was being conducted, the collaborator had changed jobs making it difficult for the organization to commit itself. Hence, the change in the institution that collaborated in the exercise.

Dedza District Agriculture Development Office provided insight on the farmer identification, project orientation and awareness. They also helped with training on-field management of vegetable crops with emphasis on nutrition, weeding, irrigation and crop protection, which are the foundation for a quality crop even during postharvest storage and marketing. LUANAR was mainly involved in delivering the training content both practically and in theory. Funds for this exercise were from the Cooperative Grants.

The training was conducted to farmers that belonged to Mayiwathu Cooperative processes vegetable crops into different food products such as tomato jam and soy yoghurt. The target was to train 50 farmers, but due to circumstances beyond control, 35 farmers availed themselves of the planned activities.

2.0 Methodology

In collaboration with Dedza District Agriculture Development Office, a cooperative that had expressed interest in building its capacity in tomato production and processing, called *Mwayi wathu*, was selected for the training due to the potential it had shown and that they had received drip irrigation kits from an NGO to promote their production ventures. A decision was made to take the farmers through an agricultural cycle approach since the farmers had indicated an interest in building their skills and knowledge in both production and postharvest handling of

tomatoes. As such, the farmers were trained on Good Agricultural Production Practices, Postharvest Handling of Vegetables and Use of Plastic Crates and its Gross Margins and other storage options for vegetables such as the use of the Zero Energy Cooling Chambers.

3.0 Activities

The following activities took place in December 2021.

3.1 Good Agricultural Production Practices

Through a participatory approach, farmers were trained on good agricultural production practices for vegetable crops with emphasis on the Tomato crop Production system. Farmers were taken through different tomato production systems. As a practical, a nursery was prepared to give farmers hands-on experience. A demonstration plot has been prepared from transplanting in early February 2022.



Figure 1: Farmer's practical preparing nursery for vegetable production

3.2 Postharvest Handling of Vegetables

Farmers were also trained on Postharvest Handling Processes starting with Harvesting and determination of Harvesting Maturity. They were also trained on proper handling to avoid physical damages, washing with chlorinated products such as Jik (5% sodium hypochlorite) instead of using field chemicals in postharvest storage or on the market to avoid pathogen attack, sorting and grading.



Figure 2a. Trainer indicating some examples of disinfectants that can be used for washing fruit vegetables



Figure 2b. Farmer representative presenting Good Post-harvest handling practices in vegetables

3.3 Use of Plastic Crates and its Gross Margins

Another component of the training was the use of plastic crates, why it is recommended and the gross margin of the losses incurred versus the cost implication on the monetary value of the produce saved when using plastic crates was done. And 15 crates were purchased with funds from the grant and given for free to the cooperative as a demonstration of how important they are. It is being envisaged that after using them, they shall appreciate the reduction of losses incurred through their use, and that could have a multiplier effect in their communities.



Figure 3a. Plastic crates were bought and given to farmers for demonstration



Figure 3b. Symbol presentation of the plastic crates to farmer group

3.4 Storage Options for Vegetables

Farmers were also trained on storage options for vegetable crops depending on their storage temperatures. Zero Energy Cooling Chamber (ZECC) was used as an example. However, since it is the rainy season in Malawi, its practical construction has been set aside to be done around April 2022 when the rainy season is over.

4.0 Conclusions

Training on production and postharvest handling and storage in tomato were conducted in December 2021 with Cooperative Grants through the Postharvest Education Foundation. Although the training was conducted largely on a practical basis, the implementers planned to use the Demonstration approach, hence follow-ups will be done throughout the production cycle to enable farmers to grasp all the required skills.