

Capacity Building on Ginger Post Harvest Technologies and Marketing

(For Woreda Experts & Development Agents from Boloso-Bombe & Boloso-Sore Woredas, Wolaita Zone, SNNPRS)

Taye Buke

M.Sc. in Horticulture,
Principal Investigator
Wolaita Sodo University College of
Agriculture, Department of Horticulture

Leake G/resilassie

MSc in Agricultural Economics
Co-investigator
Wolaita Sodo University College of
Agriculture, Department of Horticulture

Abraham Bosh

M.Sc. in Horticulture
Co-investigator
Wolaita Sodo University College of
Agriculture, Department of Horticulture

Abstract – This project is community based practical at field capacity building on ginger postharvest technology to capacitate the rural community, development agency and district experts to solve the problem of the ginger production system, post-harvest handling and management are still too traditional in area. It is known that ginger is income generating source for the producers and also the foreign currency source for the country. Farmers dry their product on soil and with foreign materials and this result on the distortion of quality and result in market failure. As result practical based capacity building was conducted at grass-root level and awarenece created there.

Keywords – Capacity Building, Ginger, Post-Harvest Technology, Marketing.

I. INTRODUCTION

1.1. General

Wolaita Sodo University is one of the government higher educational institutions established with the vision of giving teaching and learning process, research and community service. In the case of community service it has been engaged in delivering different services such as Community Based Field Projects. Even though this is true, because of its infant stage, there are many problems those not addressed by the university. Some of the problems, ginger production and post-harvest handling are the major one to ginger producing farmers since the crop is the major cash crop to the communities. Depending on this, the training manual is prepared to give training for the ginger producing on post-harvest management of ginger crop to mitigate the knowledge gap of post-harvest technology.

1.2. Back ground and Problem Statement

Ginger is one of the major important spice crops in the world as well as in the country. It was introduced to our country in 13th century. Ginger by its nature is the perennial which cultivated as annual. But even if it can stay more than a year in the soil, for the purpose of producing quality product it harvests within a year. Quality of ginger which is found in the market varies depending on the weather condition and climate where the crop grown, type of soil and on the method of production and post-harvest management undertaken by the producer which highly affects the quality and the major problem of the area influencing the price of ginger. Ginger product like other root crops found from underground roots called rhizomes. Even though, the country has favorable climatic conditions, the production system and quality of product is very low.

According to the report of SNNPR of 2011/12, the ginger production in Wolaita Zone takes the largest coverage of area in the Region i.e., more than 50%. There are more than 6 ginger producing Woredas (B/bombe, B/sore, K/koisha, D/sore, Ofa and K/didaye) in 131 Kebeles those covering around 10622ha of land by ginger crops. From these 6 Woredas, only three of them ((B/bombe, B/sore, and K/koisha) are known by producing to market. Since ginger crop utilizes soil mineral completely, maintaining of soil fertility is crucial. If ginger grows continuously in the same plot of land for long period, it reduces productivity due to reduction of soil fertility. In addition, there is easily dissemination of plant disease which deducts the productivity.

Thus to increase fertility of the soil and to control dissemination of plant diseases it is advisable to grow other crops like pulses for some years (crop rotation). Similarly, using natural and artificial fertilizer is important even though, there are no nationally recommended artificial fertilizer rates in the country. Some ginger producing farmers uses both natural and artificial fertilizers; but there is a gap on the rates of fertilizer. Here, the major problems, in the use of artificial fertilizer (DAP and Urea) and post harvest technology are lack of knowledge how about the benefit of fertilizers to ginger crop post harvest technology. To solve these problems farmers should be capacitated on how to use fertilizer in order to increase productivity of the crop indirectly and post harvest technology directly; training was given to Woreda experts, development Agents and ginger producer farmers cooperatives leaders

In Ethiopia there are numerous types of ginger cultivars (above 40 accessions); but farmers of Wolaita zone uses only two cultivars. Due to the absences of different adapted and productive accessions, the productivity of the crop is blow the potentials which is 350-500Qt/ ha. Currently according to Wolaita Zone agriculture and Rural development department data, the maximum productivity of the crop is ranged between 180 and 200Q/ha. The ginger seed accessions known by their productivity those generated by the research centers and disseminated to the framers are 36/79, 37/69, 38/79 (Volbo), 39/79, 141/79, 180/73, 190/73, 305/73. According to Ethiopian research center, the accessions, 180/79, 36/79, 38/79, and 305/73 are the highest productive ones in their order.

The ginger production system, post-harvest handling and management are still too traditional in our area. It is known that ginger is income generating source for the producers and also the foreign currency source for the country. Farmers dry their product on soil and with foreign materials and this result on the distortion of quality and result in market failure. Due to this and the same other reasons the price of the product decreases from year to year and other time market fluctuation is commonly occurring. For instance price of ginger reduces from 1300 Birr/Qt in 2003 E.C to 600 Birr/Qt in 2004 E.C. In general, the main problems of farmers of Wolaita zone in ginger production is lack of knowledge about land preparation, seed selection, plant management, harvesting, washing, drying, grading, packaging and etc. Therefore, this project initiated with the objectives of post-harvest technology which is the primary and main factors affecting income of ginger producing communities of our project site.

The price of ginger is highly fluctuating; when the quality increase, the price goes high and then after the certain period of time producers decrease the quality, then the price come down (for example in 2003 E.C. the price of wet ginger was 1200-1400 Eth. Birr per quintal but currently its price is 200-400 Eth. Birr per quintal). This is because of the low quality of ginger at the market as reason some amount of ginger come to one of our target woreda (Bollosso Bombe) from world market according to the information/annual report from Wolaita agriculture sectors. Therefore our project is designed to capacitate the beneficiaries on post-harvest technology of ginger with the following objectives.

II. OBJECTIVES

- To build the capacity of woredas experts, development agents and cooperative leaders on post-harvest technologies and marketing of ginger products as Training of trainers (TOT) to create awareness at grassroots level.
- To appreciate the ginger market and to increase farmers income to secure the food gap and to increase the country's foreign currency

III. LITERATURE REVIEW

3.1. Overall Issues in the Ethiopian spice sector

3.1.1. Major constraints in the spices production and marketing in Ethiopia

The major constraints facing the spices sub sector of Ethiopia cover pre production, production, processing and marketing stages.

Some of them are:

- Low yield varieties in use, and lack of High Yielding Varieties (HYV);
- Need for improved spice agricultural research in existing and new and locally adaptable varieties that offer opportunities for increased yield, and meet home and export market demands;
- Poor quality of final output marketed;
- Weak role of private commercial investors in spices production;
- Irregular supply and variable quality of spices produced from forest and agricultural landscape;
- Lack of proper post harvest handling practices, and problems of the marketing system in use resulting in significant post harvest wastage/spillage and product quality deterioration;
- Weak business linkage among stakeholders in the chain including farmers, traders, processors and organized level support institutions and macro level regulatory and enforcement institutions;
- Lack of use of appropriate modern technologies in farm management, drying, storage, etc;
- Lack of appropriate spices development strategic interventions
- Lack of organized with better awareness on post harvest technologies to be globally competent, cooperatives at grass-root level

3.1.1.1. Marketing Stage:

- Keeping spices in store for long in expectation of higher prices;
- Adulteration of inferior varieties with better ones for marketing;
- Poor quality of spices traded due to highly traditional pre and post harvest handling practices;
- Adding water to increase weight and also colour/appearance;
- Increasing role and importance of unlicensed brokers in the trading of spices in the market;
- Weak marketing system not stimulating production and marketing based on enforceable quality standards;

- Lack of value addition in terms of major agro processing activities in spices;
- Weak organizational capacity of cooperatives/unions;
- Price volatility due to changes in demand and supply in local and overseas markets;
- Lack of organized market information service to the different actors in the spices farm-to-market chain;
- Weak market research and promotion in potential overseas markets for natural and processed spices products.

3.1.1.2. Identified problems:

- Drying at the farm level is improper: on the road, in the dust rather than on concrete floors;
- Drying is insufficient: crops should be dried down to 12%, but most volume is shipped at 30%+ moisture which enhance mould growth during transport and storage;
- Post-harvest handling of the product is inadequate: poor and re-used packaging, storage in unclean sheds and next to chemicals, much up- and offloading, bumpy transport;
- Trading/selling is done in open markets where the material is placed on bare soil or on plastic undercover on which people and animals freely walk;
- Grading is done only visually

IV. METHODOLOGIES

4.1. The target group profile

The trainers were selected from those two major ginger producing Woredas i.e., Boloso-Bombe and Boloso-Sore. Quota system was used to have farmers based on the ginger production coverage of the two Woredas; and then, the same system was used to the peasant associations also. Finally the individual farmers were identified according to their ginger producing capacities and to their residential proximity for the good management and effective performance. Based on this, four experts from agriculture office of each Woreda, six development agents from Bollosso Bombe and four from Boloso Sore Woreda and two cooperative leaders from Bollosso Bombe and one from Bollosso Sore. Totally twenty responsible trainers were participated at TOT. This training was to create awareness and capacitate one hundred twenty and eighty direct beneficiaries from Boloso-Bombe and Boloso-Sore Woredas respectively and farther dissemination of technologies was continued by Woreda agricultural offices organizing cooperatives at each Woreda.

4.2. Project Strategies

This training project was implemented in collaboration with partner (Zonal Government line offices) and the communities. The project handled with multi-disciplinary team members from Wolaita Sodo University, Wolaita Zone Agriculture and Rural Development Department (Coffee & Spices work process) and Cooperative Department market assessment expert. The overall project implementation strategy emphasis was given to the following principles:-

- Capacity development and partnership with the Zonal experts.
- Participation of local actors and maximum utilization of indigenous knowledge and resources.
- A process approach: - was followed where by the project activities were started in small target Woredas and Kebeles. Based on the lesson learnt it will be scaled up and include more ginger producing farmers and Kebeles by the extension strategy.
- The training was given for seven days in February at Woreda level. This training had two steps: first step theoretical training for three days and Practical training field. Finally the training was given for more than twenty farmers at each Kebele and later they were organized cooperative members to supply quality ginger to the market

- Following implementation, monitoring and evaluation of the achievement was conducted by University and Zonal Departments (project persons) for three months and finally it was taken over by Woreda sectors extension system for sustainability.

V. PROJECT COMPONENTS, OUTPUT & ACTIVITIES

5.1. Project Components

The main project components are categorized in to three:-

- A. Introduction Pre-harvest factors affecting the quality of ginger production.
- B. Post-harvest handling/technology and management (washing, drying & storing)
- C. Ginger Marketing (grading, packing, transportation and marketing)

5.1.1. Approach

The project/training was conducted with training manual which includes all project components. Implementation or training was carried out in both theoretically and practically, following the adult education or two-way system and later cooperative organization formed at each kebele.

5.2. Project Out puts

- Improved knowledge/awareness of farmers in quality/highly marketable ginger production, post-harvest technology and management and marketing.
- Improved and scaled up extension approach on quality production technologies.

5.3. Project Activities

- Training manual was prepared to take over the training.
- Local and Industrial or manufactured training materials and equipments, and planting materials for practical training at field for ginger post-harvest technology were prepared.
- Practical works:-
 - How to ginger seed selection and storage (seed size)
 - How to harvest fresh ginger from the soil
 - How to wash the harvested ginger
 - How to drying ginger
 - How to grade ginger
 - How to pack and marketing of ginger was carried out.

Based on or following these two step training one cooperative organization of quality ginger producer and supplier formed in each Kebele and totally twenty organizations were formed.

VI. PROJECT MANAGEMENT AND ORGANIZATION

6.1. Responsibility for Project Implementation and Sustainability

Wolaita Sodo University, in collaboration with Zonal and Woreda Agricultural and Cooperative Sectors, Cooperative leaders and with the beneficiaries themselves was responsible for smooth project/training implementation. The Woredas Administrative structures in both Woredas also took the project sustainability and dissemination responsibility through organized cooperatives.

VII. INPUTS REQUIRED

7.1. Total cost

The total cost/Budget used for the project/training was 24946_Eth. Birr

7.2. Personal Input

From Wolaita Sodo University, professionals/staff i.e., two from horticulture department, one from Agricultural Business and Management and value-chain department, one assistant (plant science), one expert from Wolaita Zone agriculture department(Coffee & Spices work process) were the project implementing team members.

VIII. MONITORING AND EVALUATION

- The main purposes of the monitoring and evaluation system was done in each activity components:-
 - Performances were measured and assessed
 - The project achievement was ensured
 - Group learning enhanced
- Accordingly, time adjustment was made during implementation.
- Monitoring and Evaluation was participatory in a sense that it involved stakeholders who were directly or indirectly involved.
- Visits were organized to have an experience of ginger washing, drying and storage at previously organized cooperatives

IX. SUSTAINABILITY

Wolaita Sodo University is committed to bring positive and sustainable improvement on ginger post-harvest handling and management in both Woredas and elsewhere in the Zone. Due to this, emphasis was given to capacitate the community, government offices to ensure the sustainability of this project achievement after the project implementation. Particular emphasis was given for the local governments to take over all responsibilities of project implementation gradually, which ensure sustainability.

X. CONCLUSION AND RECOMMENDATIONS

Ginger has been produced as an important commercial horticultural crop in Wolaita. Farmers produce different varieties and apply traditional management practices. External support in promoting improved varieties and management practices is almost nonexistent. Ginger product markets are very volatile and price fluctuations create a disincentive for farmers in the production of the crop. Thus, researcher's community services have to assist farmers in indentifying improved varieties with desirable market traits, appropriate agronomic and post-harvest management practices including drying methods, sorting and grading techniques, as well as processing technologies and marketing maintaining quality up to the global market. Extension workers and other development practitioners have join hands with the farmers in addressing marketing problems such as: easing barriers to entry into markets by organizing ginger producers into producers and marketing cooperatives.

REFERENCES

- [1] SNNPR Agricultural Bureau Report of 2011/12
- [2] Wolaita Zone Agricultural and Rural Development Department, 2011 year, annual report.
- [3] Wolaita Zone Finance and Economy Development Department, 2012 year, unpublished annual.



Fig.1. Ginger rhizomes are consumed as a spice, in medicine, and as a vegetable in diets around the world.



2. Washed and air-dried rhizome, ready for sale.



Fig3. Hand of mature ginger root that has been cured.