Improved Pit Storage Method for ginger rhizomes in Nepal

SUMMARY:

Farmers in the Mahintada village, in the Surkhet District cultivate ginger as a major income generating cash crop to be used as food or medicine. Ginger rhizomes selected for seed purposes are stored in pits to be used in the next season. It has been observed that around 25-30% rhizomes rot in the pit itself and about 10-15% rhizomes sprout in the pit and are rendered useless for sowing due to a build-up of pathogenic inoculums. Therefore, there is a need to improve storage conditions. The pit storage method, with some improvements, constitutes an eco-friendly and less expensive method in respect of tradition and local knowledge.

CATEGORY:
- Climate change and disaster risk reduction [1]
- Natural Resources Management [2]
- Post-harvest and marketing [3]

COUNTRIES:
- Nepal

DESCRIPTION:

Introduction
In the predominantly rainfed area of Surket, Ginger is raised either as a sole crop, or as an intercrop. Seed rhizomes are usually planted during March-April. Most of rural families living in remote places follow traditional methods for cultivation and storage, which are usually eco-friendly, less expensive, and utilize local resources, knowledge and labour. The improved pit storage method provides cool conditions, ensuring freshness for prolonged storage. Ideal storage conditions should have a temperature of 12-14°C and a relative humidity of 65-75%. Under these conditions, Ginger seed rhizomes can be easily stored for 5-6 months without damage and deterioration in quality as it will minimize shrinkage, rhizome rot and improve germination capacity. Approximately 350 kg of Ginger rhizomes can be stored in one pit.

Objective
The objective of the practice is to improve and maintain the quality of Ginger rhizomes selected for seeds through improved pit storage technology.

Implementation of this practice/technology
To implement a proper ginger pit storage:

1. Disease free and vigorous rhizomes for seed are selected to be stored immediately after harvest. For this purpose, healthy and disease-free clumps are marked in the field when the crop is 6 - 8 months old and still green.
2. Rhizomes are disinfected with fungicides and pesticides.
3. A circular or rectangular pit of about 1-2 m depth is dug in a shady and well-drained area, i.e. under the shade of a tree, provided water does not enter the pits.
4. Pit walls may be coated with cow dung and disinfected with the same solution used in step 2 for rhizomes. If this is not possible, fire should be lit inside the pit to improve hygienic conditions within the pit.
5. Prior to storage of the rhizomes, the top of the pit (up to 6?) is covered with grass and soil and is raised slightly above ground level to prevent entry of rainwater into the pit.
6. A 3-4 cm layer of rice husk, saw dust, straw or dry grass should be placed in the bottom of the pit to serve as a cushion. Ginger rhizomes are placed in layers with 1-2 cm of sand/straw layers in between.
7. The pit is covered by a wooden plank with holes and plastered with thatch and soil or cow dung in an oval shape.
8. A temporary thatch roof is made over the pit to lower the inside temperature and protect it from water entry. Ventilation inside the pit can be maintained with the help of a pipe.

Pits are to be inspected every 20 days approximately to remove shriveled and disease affected rhizomes, and dried every 2 months to protect them from insect pests and molds.

**Technical, economic, financial, social and environmental attributes of the technology:** Improves efficiency of storage through improvements on traditional system/Maintains quality of ginger rhizome selected for seed /

**Factors underlying success:** Temperature and relative humidity in the improved storage is well maintained/Quality of ginger rhizome selected for seed improved/Provision of training to farmers/ Good quality seed rhizomes available for planting/

**FURTHER READING:**

**SOURCE(S):**

**FAO Strategic Objective 5 ? Resilience, in FAO [4]**

**Country:**

Italy


**Links:**