

# Seed Saving





# ECHO'S partner farmer, Chiang Mai Province, Thailand



# **The benefits of seed saving for this farmer are:**

- saves money
- shares seed in the community and ECHO
- grows healthy organic food
- promotes a sustainable way of life

# Why is seed saving important?

- uses locally available resources
- saves money
- preserves genetic and cultural diversity
- develops self-sufficiency
- local acclimatization
- empowers others
- decreases dependence on hybrids
- promotes good health



Heirloom seed





# Heirloom seed

- disease and pest resistance.
- adaptation to the local environment
- the seed always viable
- don't need chemicals
- safe for customer and farmer
- food security and the preservation of biodiversity

# Hybrid seed



- gene problems
- does not produce 'true to type' seeds
- saved seed not viable
- loses 'hybrid vigor'
- saving seeds is not recommended and often illegal
- loses diversity



# GMO seed (Genetically Modified Organisms)

- GMOs cannot adapt to their environment
- GMOs hurt the environment
- require chemicals
- cross pollinate



# Characteristics of good seed

- pure lineage
- trace the crop history
- clean and new
- high strength
- low moisture
- good germination



# Advantages of good seed

- better yield
- needs less resources
- produces healthy plants
- maintains pure line
- high germination
- adapts well





# Disadvantages of bad seed

- less and lower quality yield
- more labor–intensive less cost effective
- low germination
- unsaleable at market

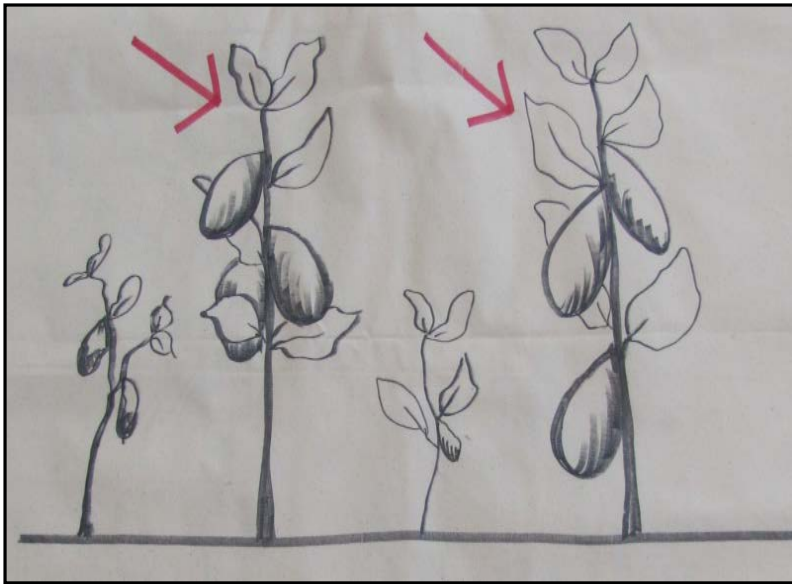


# Criteria of Selecting Seed

- from strong and healthy plants



- flavor and color
- productivity
- avoid plants that are too young, too old or sick







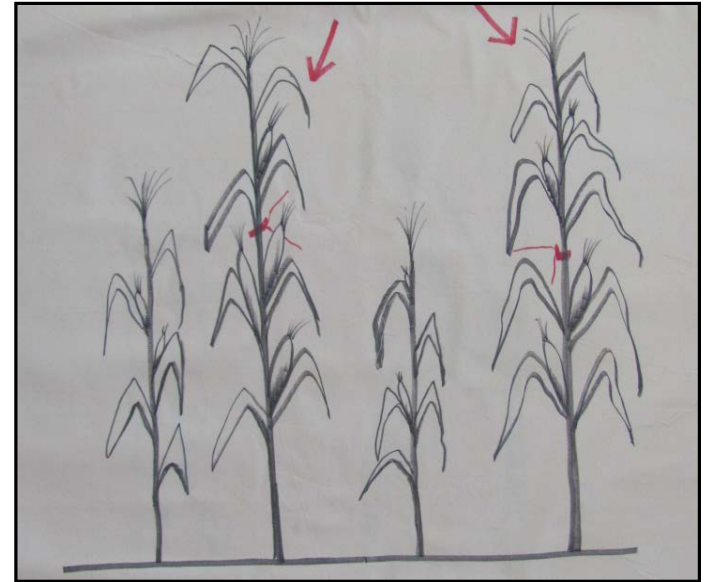
- Vigorous growth

- adaptation to your farm



Photo Credit: Kimberly B. Duncan

- mark the healthy plants to remember which ones to collect seeds



- pure line seed

# Principles of harvesting seed

- harvest from desired plants or plant parts
- the goal should be genetic diversity so plants can adapt to changing conditions
- label bags or containers
- harvest at the right time



# Harvesting variations

- chili
- cucumber
- eggplant
- pumpkin
- papaya



**Varieties that need to be collected from dried, mature fruit before harvesting seeds**

- **Bottle gourd**
- **Sword bean**
- **Wax gourd**





# Varieties that require ripening on plant before harvesting seeds



- yard long bean
- mustards and lettuce
- corn



# Varieties that should be harvested before pods disintegrate

- amaranth
- winged bean
- rice bean, cowpea
- sesame
- horse gram



too late for  
harvesting



right time for  
harvesting





# Varieties that can be propagated by cuttings

- Sweet potato
- Chaya
- Cassava
- Katuk
- Fern





# Propagation

with soil in container



submersion in water



directly in the ground



# Cleaning seeds: why do it?

- chaff and stems make it harder to get an accurate seed count
- debris can harbor insects
- removes any insects and diseases that come in from the field

# Tomato cleaning



1. scoop out the seed



2. soak with water and ferment



3. wash with water and strain



4. dry



# Seed cleaning by sand





# Papaya cleaning



# Dry pod or husk seed cleaning

Yard long bean, horse gram and green bean



remove seed from pod by hand



remove debris and separate  
good seed from bad



# Seed drying

- ideal seed moisture content for storage is 3-8%
- be sure the temperature does not exceed 41C (105F) for tree or high-oil seeds and 54C (130F) for most other orthodox seeds

# Some appropriate drying methods

## Drying in the sun





# Drying above fire





# Drying shelves



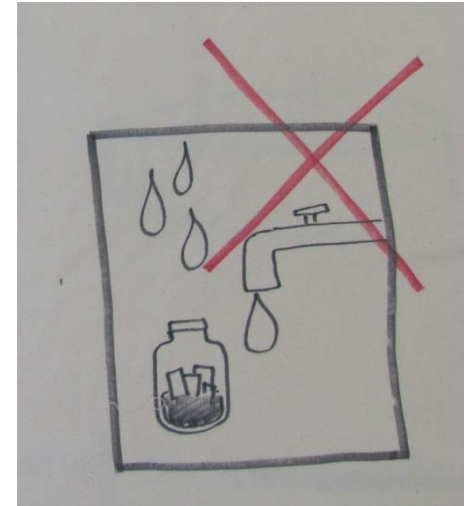


# Seed dryer

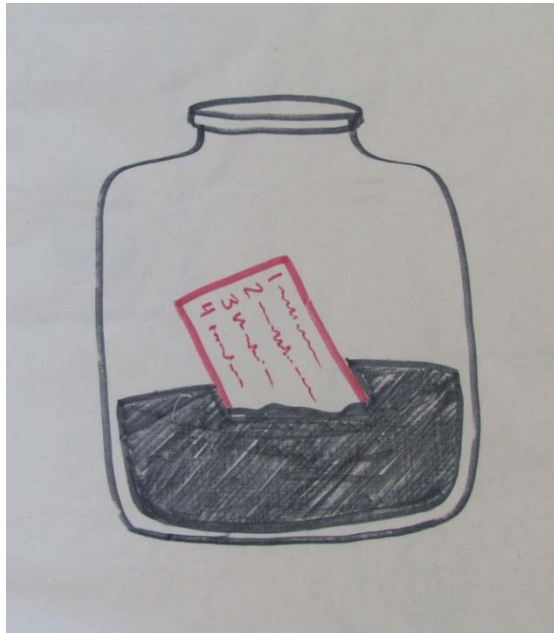


# Storing seeds

- seed should not be exposed to ambient moisture in storage
- don't let them be exposed to high humidity again!





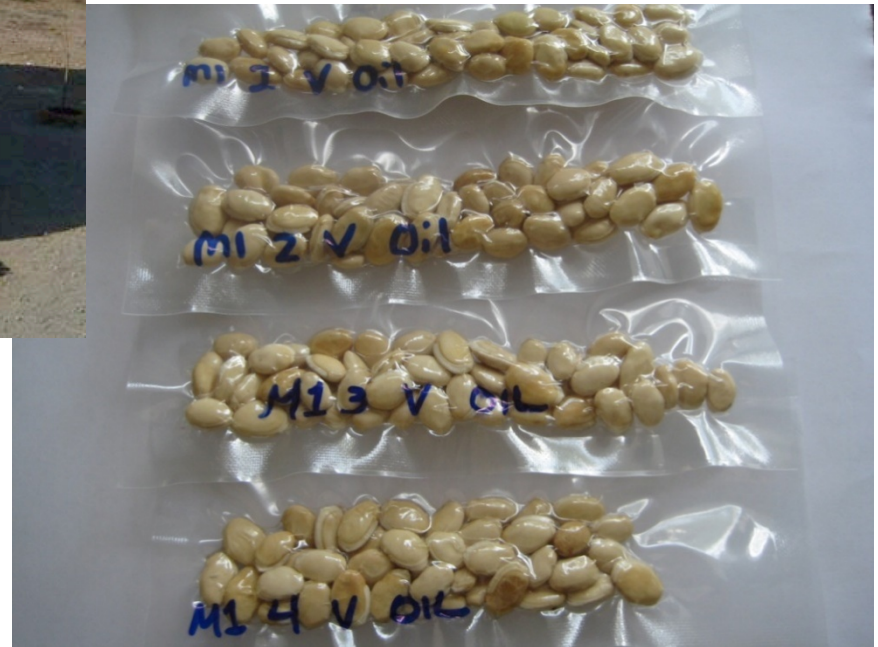


# How to store seeds:

- label your seeds!
- climate controlled environment
- use desiccant
- airtight containers
- vacuum seal



# Some appropriate storage methods





# Vacuum sealing



# Some appropriate storage methods

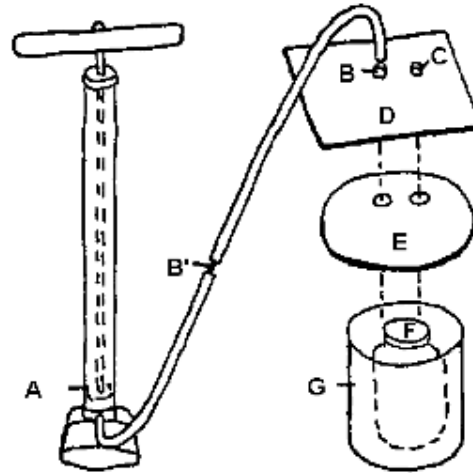


Figure 1. The vacuum packing system for seed storage.





# Why should we do germination testing ?

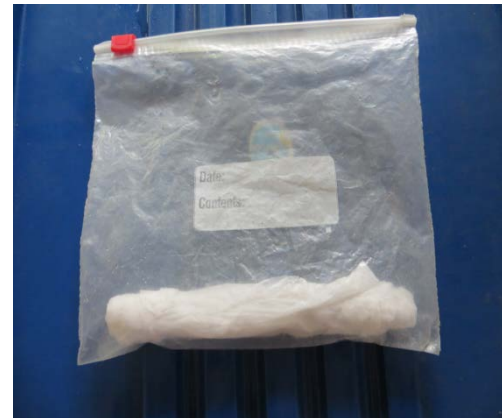
- selective
- lowers wastage
- maximizes use of space
- improves community relations

# Germination testing process: petri

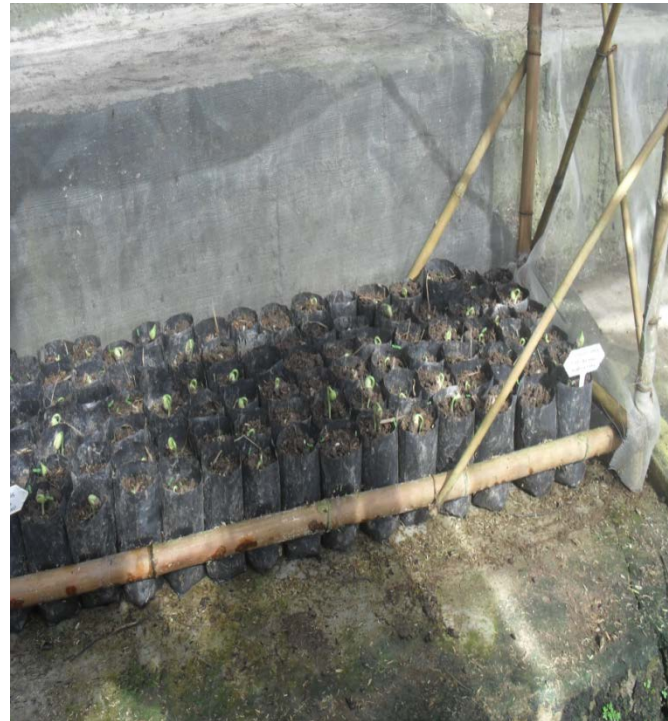




# Germination process: rag doll



# Germination process: soil





# Germination data recording

[illegible]

# Seed saving main points:

- increases food security
- preserves diversity
- helps promotes community relationships



# How will seed saving improve your community?



# THANK YOU!

