

**DILULU FOUNDATION**

GROWING GREENER COMMUNITIES ACROSS AFRICA

GARDENING GUIDE

Seed Saving: Preserving Local Varieties

Instructions for selecting, harvesting, processing, and storing seeds from garden plants. Includes techniques for different crop types and traditional African seed saving methods.

GARDENING TECHNIQUES

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"Knowledge grows when it is shared."

DILULU FOUNDATION – ENVIRONMENTAL EDUCATION FOR AFRICA



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Preserving Biodiversity Through Seed Saving

Saving seeds from your garden is a powerful way to preserve local biodiversity, maintain food sovereignty, and develop plants well-adapted to your specific growing conditions. This fact sheet provides practical guidance for selecting, harvesting, processing, and storing seeds from common garden plants, with special attention to traditional African seed saving methods.

Why Save Seeds?

- **Preserve local varieties:** Many traditional African crop varieties are disappearing as commercial seeds become more common
- **Adapt to local conditions:** Plants grown from saved seeds gradually adapt to your specific climate, soil, and pest pressures
- **Save money:** A single plant can produce hundreds or thousands of seeds for free
- **Food security:** Maintaining your own seed supply ensures access to planting materials regardless of market availability
- **Cultural heritage:** Many traditional varieties have cultural and historical significance
- **Community resilience:** Seed saving and sharing builds stronger, more self-sufficient communities

Basic Materials for Seed Saving

- Paper bags or envelopes for collection
- Labels and permanent marker
- Clean, dry containers for processing
- Fine mesh sieves or screens of different sizes
- Clean, dry glass jars with tight-fitting lids for storage
- Silica gel packets or dried rice for moisture absorption (optional)
- Notebook for record keeping

Understanding Plant Reproduction

Self-Pollinating vs. Cross-Pollinating Plants

Understanding how plants reproduce is essential for successful seed saving:

- **Self-pollinating plants:** Flowers pollinate themselves before opening or have enclosed reproductive parts. These plants generally produce seeds that grow "true to type" (offspring resemble parents).
- **Cross-pollinating plants:** Pollen must be transferred between different plants, usually by wind or insects. Seeds from these plants may produce offspring with mixed characteristics unless isolation techniques are used.

SELF-POLLINATING CROPS (EASIER)	CROSS-POLLINATING CROPS (MORE COMPLEX)
Tomatoes, peppers, eggplants	Maize, millet, sorghum
Beans, peas, cowpeas	Cucumbers, melons, squash, pumpkins
Lettuce, okra	Onions, cabbage, kale, amaranth
Groundnuts (peanuts)	Carrots, beets, radishes

Selecting Plants for Seed Saving

Choose Healthy Plants

Select plants that show vigor, disease resistance, and drought tolerance. Avoid saving seeds from diseased plants, as some diseases can be transmitted through seeds.

Look for Desirable Traits

Select plants with characteristics you want to preserve: good flavor, appropriate size, early maturity, heat tolerance, or other qualities important in your region.

Save from Multiple Plants

When possible, save seeds from several plants of the same variety to maintain genetic diversity. For self-pollinating crops, save from at least 5-10 plants; for cross-pollinating crops, save from 20-50 plants if possible.

Consider Plant Maturity

Some plants should be allowed to grow beyond the eating stage to fully mature seeds. Plan accordingly and dedicate specific plants for seed production.

Label Clearly

Mark selected plants with stakes or ties to prevent accidental harvest for eating. Record the variety name, selection criteria, and date.

Harvesting Seeds by Plant Type

Dry-Seeded Crops

These plants produce seeds in pods, husks, or seed heads that dry on the plant.

Examples: Beans, peas, okra, maize, millet, sorghum, amaranth, eggplant

- Allow pods or seed heads to dry completely on the plant
- Harvest when pods rattle, turn brown, or begin to split
- For large seeds (beans, maize), remove from pods or cobs and spread to dry further
- For small seeds (amaranth, millet), cut entire seed heads and place in paper bags
- Complete drying in a well-ventilated, shaded area for 1-2 weeks

Wet-Seeded Crops

These plants have seeds embedded in moist flesh or pulp.

Examples: Tomatoes, cucumbers, melons, squash, pumpkins, eggplant

- Allow fruits to fully ripen on the plant, often beyond eating stage
- For tomatoes: scoop out seeds with pulp, ferment in water for 2-3 days, then rinse and dry
- For cucumbers and melons: cut fruit in half, scoop out seeds, rinse, and dry
- For squash and pumpkins: scoop out seeds, rinse off pulp, and dry thoroughly
- Spread cleaned seeds in a single layer on paper plates, screens, or cloth to dry

Biennial Crops

These plants produce seeds in their second year of growth.

Examples: Carrots, beets, onions, cabbage, kale

- In tropical regions, some biennials may flower in the first year
- In cooler regions, harvest mature roots/bulbs in first year, store through cool season
- Replant selected specimens at start of growing season
- Allow plants to flower and set seed
- Harvest seed heads when dry and beginning to shatter

Traditional African Seed Selection Practices

Many traditional communities have developed sophisticated seed selection methods:

- **Pre-harvest selection:** Marking the best plants in the field with colored cloth or special stakes
- **Post-harvest selection:** Selecting the largest, most perfect cobs or fruits from the harvest

- **Storage selection:** Hanging maize cobs or seed heads in cooking areas where smoke helps preserve them
- **Community selection:** Gathering elders to evaluate and select seeds based on multiple criteria
- **Ritual selection:** Incorporating spiritual practices that help maintain careful attention to seed quality

Processing Seeds

Cleaning Dry Seeds

- Thresh pods or seed heads by hand, by beating in a bag, or by gentle crushing
- Winnow to separate seeds from chaff (traditional basket winnowing or using gentle breeze)
- Sieve through screens of appropriate size to remove debris
- For small seeds, use a white plate or paper to help see and separate seeds from debris

Cleaning Wet Seeds

- Rinse seeds thoroughly to remove pulp and gel
- For tomatoes and cucumbers, fermentation helps remove germination inhibitors:
 - Place seeds and pulp in container with equal amount of water
 - Let sit for 2-3 days, stirring daily
 - When white mold forms on top, seeds are ready to rinse
 - Pour off pulp, mold, and floating seeds (non-viable)
 - Rinse good seeds (those that sink) in clean water
- Spread cleaned seeds in thin layer on paper plates, screens, or cloth to dry

Drying Seeds Properly

- Dry in thin layers in a shaded, well-ventilated area
- Protect from direct sunlight, which can reduce viability
- Stir or turn seeds daily to ensure even drying
- Small seeds dry in 3-7 days; larger seeds may take 1-2 weeks
- Test dryness by biting a seed—it should be hard and break cleanly, not bend

Storing Seeds

Traditional Storage Methods

- **Clay pots:** Porous containers that regulate humidity
- **Gourds:** Dried and hollowed for seed storage
- **Ash mixing:** Seeds mixed with wood ash to deter insects

- **Smoke treatment:** Hanging seeds above cooking fires to deter pests
- **Underground storage:** Cool, dry pits lined with straw or leaves
- **Seed bundles:** Seeds wrapped in leaves or cloth with natural repellents

Modern Storage Methods

- **Glass jars:** With tight-fitting lids to keep moisture out
- **Paper envelopes:** Inside airtight containers for small quantities
- **Moisture absorbers:** Silica gel packets or dried rice to absorb moisture
- **Refrigeration:** For long-term storage of valuable seeds
- **Vacuum sealing:** Removes air to extend viability

Storage Conditions

Remember the seed storage rule: 100 = Years of Viability

Temperature (°F) + Relative Humidity (%) should equal less than 100 for good storage

- Store in cool, dry, dark location
- Protect from temperature fluctuations
- Keep away from direct sunlight
- Protect from insects and rodents
- Label clearly with variety name and harvest date

CROP TYPE	EXPECTED SEED VIABILITY	SPECIAL STORAGE NOTES
Beans, peas, cowpeas	3-4 years	Add dried hot peppers or neem leaves to deter weevils
Tomatoes, peppers, eggplant	4-5 years	Ensure complete drying before storage
Cucumbers, melons, squash	5-6 years	Large seeds remain viable longer when properly dried
Maize, sorghum, millet	2-3 years	Particularly susceptible to weevils; store with botanical repellents
Leafy greens, herbs	1-3 years	Small seeds lose viability faster; store in coolest conditions
Onions, carrots, beets	1-2 years	Short viability; save fresh seeds frequently

Seed Viability Testing

Before planting stored seeds, test their viability:

- **Paper towel method:**
 - Place 10 seeds on damp paper towel
 - Fold towel and place in plastic bag
 - Keep in warm location (not hot)
 - Check after 5-10 days (varies by crop)
 - Count germinated seeds to calculate percentage
 - 80%+ germination is excellent; 60-80% is good; below 60% use more seeds when planting
- **Water method:**
 - Place seeds in water
 - Those that sink are likely viable
 - Those that float are likely non-viable
 - Quick but less accurate than germination test

Special Considerations for African Conditions

Humidity Challenges

- In humid regions, extra drying time is essential
- Consider solar dryers for more thorough drying
- Use moisture absorbers in storage containers
- Check stored seeds regularly for mold

Insect Management

- Freeze seeds for 48 hours before storage to kill insect eggs
- Add dried neem leaves, hot peppers, or ash to storage containers
- Use airtight containers to prevent new infestations
- Check seeds monthly for signs of insects

Heat Considerations

- Store seeds in the coolest part of the home
- Underground storage can provide naturally cooler temperatures
- Clay pots provide natural cooling through evaporation
- Consider community seed banks with better storage facilities

Community Seed Saving

Seed saving becomes more powerful when practiced as a community:

- **Seed exchanges:** Organize events where gardeners can share and trade seeds

- **Community seed banks:** Establish local repositories for seed storage and distribution
- **Seed libraries:** Allow community members to "borrow" seeds and "return" them after harvest
- **Documentation:** Record traditional varieties and their characteristics
- **Knowledge sharing:** Create opportunities for elders to share seed saving wisdom
- **Seed sovereignty:** Work together to maintain control over local seed resources