# ABN Seed
# CATALOGUE

Brot für die Welt

SwedBio
A programme at Stockholm Resilience Centre

African Biodiversity Network
ABN

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CATALOGUE

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# Acknowledgements

The African Biodiversity Network (ABN) would like to thank the Bread for the World (BftW) team for their unfailing support, confidence in ABN Secretariat and the Partners in the network. ABN also appreciates SwedBio's support to the seed work. ABN's seed work journey couldn't have gains without your significant contributions.

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This Seed Catalogue would not have been completed without the support from the partners who work directly with the communities where the seed knowledge was curated; the Regional Advisory Information& Network Systems (RAINS) in Ghana, Institute for Sustainable Development (ISD) in Ethiopia, EarthLore Foundation (EL) in Zimbabwe and Centre d'Expérimentation et de Valorisation de l'Agroécologiedes Sciences et Techniques Endogènes (CEVASTE) registered as Foundation Nouvelle Creation in Benin and the active leadership of Dr. Fassil Gebeyehu, who we owe a special debt of gratitude.

We acknowledge the support and cooperation of all the communities who availed this seed knowledge when called upon to ensure the success of this work. We are immensely grateful to all the individuals who contributed to developing this Seed Catalogue at different stages. The oversight role by Dr. Sulemana Abudulai and Mr. Bernard Kitonyi, besides the excellent content analysis by Jane Kinya and Simon Mitambo. Thanks to the team of editors:  Dr. Fassil Gebeyehu, Venter Mwongera, and Sara Davis for her excellent review of the forward page.

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# Foreword

This Seed Catalogue is the product of a three-and-a-half-year project of reviving farmers' seed diversity and associated practices of indigenous knowledge. Its aim is to contribute to the wider process of ensuring food sovereignty and improved livelihoods in Africa through strengthening the ability of local communities to save and preserve biodiversity.

The project began in 2018 and was implemented in 4 African countries – Ethiopia, Benin, Ghana and Zimbabwe – in collaboration with partners of the African Biodiversity Network (ABN), with financial support from Bread for the World. Contributing partners were the Institute for Sustainable Development (ISD - Ethiopia), Center for Experimentation and Promotion of Agroecology, Endogenous Sciences and Techniques (CEVASTE - Benin), Regional Advisory Information & Network Systems (RAINS - Ghana) and EarthLore (Zimbabwe).

During project implementation, the ABN supported these partners to build their capacity through Training of Trainers sessions, exchange visits, creation of experiential learning opportunities as well as financial support. Over the project period, all partners in the 4 countries were able to create awareness and build confidence amongst the communities they are working with on the multifaceted benefits of growing local seed diversities and the importance of mobilizing target groups to engage in the practical processes of seed revival.

The external evaluation carried out from 18th March to 15th June 2021, as part of the end of project evaluation process, identified that the project demonstrated significant levels of effectiveness on the target communities in all of the 4 countries where the project took place. A number of key outcomes were achieved, such as changes in knowledge, skills and attitude; adoption of agroecological practices; increased household income and enhanced institutional capacity.

The development of the Seed Catalogue is one of the defined targets that has been achieved by the project. It began as part of the Training of Trainers session held in mid-January 2019 by the ABN Secretariat in Ethiopia, where partners were trained on how to register diverse seeds with their respective varieties and a range of benefits. The Seed Catalogue has thus evolved over the three and half years through an intense process of continuous follow up between the ABN secretariat, involved partners and their communities.

I am deeply grateful for the continued support of Bread for the World and partners that led to the production of this important document. Elders, farmers and other community members from Ethiopia, Benin, Ghana and Zimbabwe are owners of great knowledge and in-depth information which is fully evident in this catalogue. I would like to thank them all on behalf of the ABN. Finally, as lead person in this process, I would like to acknowledge the significant contributions of the ABN team at the Secretariat, without your work, the publication of this document would not have been possible.

*Fassil Gebeyehu*

**ABN General Coordinator**

*Photo credit: Depositphotos/ Sergioyio*

# Sorghum

## Traditional knowledge

Sorghum meal used for local pap called *sadza*, porridge, stock feed (poultry), brewing beer, *maheu*, used to pay for avenging spirits and used to pay for wrongs done to one's own mother. It helps to control diabetes and is used for baking purposes.

## Planting/growing guide

Thrives in well-drained loam sandy soil. A pH of between 6.0 and 7.5. It can grow without the use of fertilizer. Farmyard manure can be used at the rate of 10 to 15 tonnes per acre to increase soil micro-nutrients. Planting is carried out by broadcasting seeds on the seedbed.
Rainfall: It requires 500-800 millimetres of rain or irrigation to grow and mature before harvesting.
Temperatures: It is best sown with a 160°c temperature.
Spacing: A 25 cm row to row distance is most appropriate with a 15 kilograms' seed an acre. Two tillage rounds are recommended for planting.

## Harvest

Should be harvested with a moisture content between 17 and 20 per cent. This is the optimum harvest moisture which helps to minimise harvest losses and drying expenses.

## Uses

Used for food (grass sorghum), grown for hay/ fodder, making of brooms and brushes (broomcorn), sweetener in sorghum syrups, sorghum molasses and in the production of alcoholic beverages. It can also be ground into a meal, for example, for flatbreads and cakes. The sorghum grain is also used in the making of edible oil, paste, starch and dextrose.

Is sometimes grown to be used in the production of ethyl alcohol and biofuel.

## Common advantages

- It is easy to establish and is highly productive.
- Sorghum can be used for hay and grazing.
- It has good regrowth potential.
- It can be grown in dryland and irrigated situations.

## Common disadvantages

- Sorghum requires high fertility soil and either good soil water or irrigation for maximum production.
- For maximum potential, it requires appropriate grazing management.
- Depending on the final use, varietal selection must be made carefully.

# Quick facts

*Sorghum bicolor.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Sorghum.

**Common name (local language and colloquial)**
Mapfunde, Chmhondo, Chigarande, Marcia, Tsveta, Ruzhangawaya, Chimugabe, Sila, Magwaka, Chijokwe, Mukadzi, Usaenda, Swoye, Mupositori.

**Major variety name**
Sorghum.

**Botanical name**
*Sorghum bicolor.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Very drought resistant and can withstand water-logging. Moderately fertile soils, sandy loam soils have higher productivity.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Dark green.

**Leaf shape:** Long and narrow.

**Leaf texture:** Hairy.

**Seed shape:** Round.

**Seed coat colour:** Brown or white.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No and rare in some communities.

**Extinct:** Not extinct. It is also new in some areas.

*Photo credit: Shutterstock/ Madhegowdu*

# Finger millet

## Traditional knowledge

The flour is used to make a thick porridge *(Sadza*), thin porridge, *Maheu* drink. The thick porridge is tasty and can be eaten without any other additive. Stock feeds help to control diabetes and blood pressure levels. When seeds are soaked in water, they help treat migraine headaches and insomnia, also helps to manage adverse conditions of anxiety and depression. It helps relieve conditions of blood pressure, liver disorders, asthma and heart weakness. The porridge can also be used for open wound treatment, besides brewing traditional beer for various purposes, it is mainly used for traditional rituals.

## Planting/growing guide

It is drought tolerant and grows best in saline soils, pH 5.0-8.2. When soil moisture is not enough, supplemental watering is recommended, for example, through irrigation.

Sowing of the finger millet is by broadcasting or planting seeds in furrows. The seeds' planting spaces are 2.5 centimetres deep, 25centimetres between rows and 10-12centimetres between plants. As the seeds are tiny, the seedbed is prepared thoroughly to a fine tilth and the finger millet planted as early as possible in the season on the onset of rains for higher yields. Germination begins a week after sowing. Finger millet can be planted as a pure stand or by inter-cropping with maize, beans among other crops.

## Harvest

Depending on the variety, finger millet is ready to harvest between 3.5 and 5 months after sowing. Ear-head can be harvested manually 40 days after flowering to ensure easy threshing. Combine harvesters are used for large-scale farming and the heads are dried, threshed and winnowed while the grains are dried in the shade for about a week in muslin cloth bags.

## Uses

The flour is used to make bread, porridge, various cultural dishes, beer and cereal. The grass strands are also used for thatching and making walls for small granaries.

## Common advantages

- Can be stored and used when other crops are scarce.
- Does not need extra water or fertilizer.
- Cheap to grow.
- Can be grown year-round when water is available.
- Straw can be used as animal food.

## Common disadvantages

- Not recommended for people with thyroid.
- Overconsumption may lead to small intestinal damage.
- Not good for people with kidney problems.
- Can raise digestive problems such as appetite, bloating, indigestion with higher consumption.

# Quick facts

*Eleusine coracana.*

QUICK FACTS

## Source
Zimbabwe.

### Community name
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

### Common/English names
Finger millet.

### Common name (local language and colloquial)
Rukweza/Zviyo, Mutangetsapi, Chikumbo, Chenjiva, Chipfumbate, Ruchena, Ngarare, Sawi, Fata.

### Major variety name
Finger millet.

### Botanical name
*Eleusine coracana.*

### Method of propagation
Clones.

### Agronomy & soil requirement
Finger millet can be grown in a wide range of medium fertile soil, well-drained and loam soils, it is drought-tolerant, however, more productive in areas with medium to adequate rainfall. It can be grown in nurseries and transplanted.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Green.

**Leaf shape:** Long and narrow.

**Leaf texture:** Smooth.

**Seed shape:** Sub-cylindrical.

**Seed coat colour:** Brown or white depending on variety.

**Flower colour:** Purple.

## Seed/planting material availability status

**Abundant:** Depends on the area it is grown in.

**Endangered:** No and rare in some communities.

**Extinct:** Depends on the area it is grown in.

*Photo credit: Depositphotos/ Bdspn74*

# Sesame

## Traditional knowledge

Used as a season for confectionary.

## Planting/growing guide

They are planted from 0.75 to 1.5 inches deep. Seeds will need to remain in moist soil for 3 to 5 days. The depth of planting and soil compaction should be kept at a minimum. A planting rate of 25-35 seeds per foot is recommended for sesame planted on a 40-inch row spacing.

## Harvest

Ready to harvest between 90 to 130 days. Harvest the fruit at the base when they are ripe. The seeds get the colour of the fruit specific to the variety. On maturity, the leaves at the base of the stem fall.

## Uses

Besides oil, seeds are also suitable for various bakery products and other products for the food industry in demand on the bio/organic food market.

## Common advantages

- Can be grown in rotation, following crops such as corn, sorghum, millet or cotton.
- Can be grown as a mixed crop with millet sorghum and other cereals.

## Common disadvantages

- During the early stages of vegetation, sesame grows slowly. It can't compete with weeds.
- During harvesting, the seeds should not be allowed to reach the ground to avoid an infestation of soil-borne diseases.

# Quick facts

*Sesamum indicum.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Sesame.

**Common name (local language and colloquial)**
Runinga, Ruchena, Rutema.

**Major variety name**
Sesame.

**Botanical name**
*Sesamum indicum.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Thrives in hot, dry weather. Soil should be well-drained.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Light green.

**Leaf shape:** Broad, oval shape.

**Leaf texture:** Hairy.

**Seed shape:** Pear shape.

**Seed coat colour:** Black, brown, cream or white.

**Flower colour:** Pink to red, white or yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ Smileus*

# Pumpkin

## Traditional knowledge

Pumpkin plants have various uses such as food and the ashes of the pumpkin are used for medicinal purposes such as curing toothache.

## Planting/growing guide

You can soak your pumpkin seeds before planting to encourage faster germination. Plant in soil one-half to 1 inch deep with the pointed end facing down. Allow 5 to 6 feet between hills, spaced in rows 10 to 15 feet apart.

## Harvest

Depending on the variety, it takes 90 to 120 days. They are ripe when fully coloured and have a hard rind and woody stem.

## Uses

Used as food and making of sweet treats. Used as a Halloween decoration.

## Common advantage

- More sun yields more pumpkins and bigger pumpkins.

## Common disadvantages

- Avoid getting water on the leaves to reduce the risk of disease.
- Avoid planting root crops such as beets, onions, and potatoes.

# Quick facts

*Curcubita Spp.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Pumpkin.

**Common name (local language and colloquial)**
Fere, Mboko, Manhanga, Gokombe, Squash, Gokotere.

**Major variety name**
Pumpkin.

**Botanical name**
*Curcubita Spp.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Need to be sown in warm soil with a pH of 6.0 to 6.8.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Dark green.

**Leaf shape:** Large, lobed leaves with serrated edges. Can also be heart-shaped.

**Leaf texture:** Hairy.

**Seed shape:** Flat and asymmetrically oval.

**Seed coat colour:** White.

**Flower colour:** Bright orange or yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No or rare (depending on variety)

**Extinct:** No.

*Photo credit: Shutterstock/ NICKY1841*

# Gourds

## Traditional knowledge

Boiled and eaten as food.

## Planting/growing guide

Sow seeds 1-2 inches deep in groups of 4 seeds, spacing in groups 5 feet apart in rows spaced 8 feet apart. Avoid the temptation to water at midday. It's best to water them in the morning to keep them moisturised.

## Harvest

It is almost harvest time when the foliage wilts. During this time, the vine will begin to die back, and the gourd's skin will be hard and pale. An immature gourd feels fleshy and is bright green.

## Uses

They are used as ornamentals or food crops; they can be dried and used to make utensils, cups, bottles, scoops, ladles, fishnet floats, whistles, rattles, pipes, birdhouses and other valuable objects.

## Common advantage

- Fertilizer not required during planting.

## Common disadvantage

- Slow to germinate.

# Quick facts

*Lagenaria Spp/ Cucurbita spp.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Gourds.

**Common name (local language and colloquial)**
Mapudzi, Rine Mapundu, Mhapate, Chipakamwaramu, Jena rese, Dende, Mukombe, Chinokoro.

**Major variety name**
Gourds.

**Botanical name**
*Lagenaria Spp/ Cucurbita spp.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Prefer full sun and rich well-drained soil slightly acidic to neutral pH of 5.5 to 7.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Light green.

**Leaf shape:** Long-stemmed, large, oval or triangular lobed leaves.

**Leaf texture:** Covered with minute hairs.

**Seed shape:** Vary in shape.

**Seed coat colour:** Brown or cream.

**Flower colour:** Yellow or white.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Depends on variety.

**Extinct:** Extinction depends on variety.

*Photo credit: Depositphotos/ YK1500*

# Sweet potatoes

## Traditional knowledge

Eaten raw or boiled. Can be used to make flour and chips. Leaves are used as a garnish for okra and can be cooked relish. Leaves help reduce the effects of menstruation period pain.

## Planting/growing guide

It should be planted in full sun when the soil is warm. Holes can be dug 6 inches deep and 12 inches apart. Giving 1 inch of water a week through the growing season is a good guideline.

## Harvest

They mature in 90 to 170 days. Ready to harvest just as the ends of the leaves and vines begin to turn yellow.

## Uses

Can be baked, boiled, or fried to be used as food.

## Common advantages

- Root vegetables are good sweet potato companions
- Heat-loving, low-maintenance garden vegetables.

## Common disadvantages

- Protect your plants from browsers, especially when they are small.
- Need plenty of air space in the soil for roots to reach down when planting.

# Quick facts

*Lopmoes batatas.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Sweet potatoes.

**Common name (local language and colloquial)**
Mbambaira/ Mabura/ Madima, Chimarata, Rimawakafara, Birchnough, Zvambu, Chizai, Mukadzi usaende, Chiranha, Carrot, Madhuve ipfende.

**Major variety name**
Sweet potatoes.

**Botanical name**
*Lopmoes batatas.*

**Method of propagation**
Stem cuttings.

**Agronomy & soil requirement**
Soil pH 5 to 6.5. Requires plenty of sunshine, but shade causes yield reduction.

## Seed/planting morphological traits

**Stem colour:** Purple.

**Leaf colour:** Dark green.

**Leaf shape:** Can be round, kidney or heart-shaped, spear-shaped, triangular or lobed.

**Leaf texture:** Smooth.

**Seed shape:** Round.

**Seed coat colour:** Purple or cream yellow.

**Flower colour:** White or lavender.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Pixabay/ Manseok_Kim*

# Watermelon

## Traditional knowledge

Eaten raw, used for detoxification, seeds used to make *mabumbe* relish or roasted and salted to eat.

## Planting/growing guide

Amend the site with compost or well-rotted manure before planting. Space seeds 3 to 5 feet apart in well-drained, nutrient-rich soil. Sow seeds 1 inch deep and keep them well-watered until they germinate. They will need a location that receives 8 to 10 hours of sunlight per day. You will need at least three months of reliably hot, sunny weather to grow and ripen a watermelon.

## Harvest

Once the curly tendril at the stem is dry, your watermelon may be ready. The coloured patch at the bottom turns yellow. Knock the watermelon with your knuckles and listen for a dull, hollow sound. The unripe watermelons have a higher-pitched sound.

## Uses

Eaten as a fruit and used in fruit salads, used to make smoothies.

## Common advantage

- Surprisingly easy to grow as long as the plants have plenty of room to sprout.

## Common disadvantages

- Watermelon plants are heavy feeders.
- Soaking the seeds before planting increases the risks of various fungal diseases.

# Quick facts

*Citrullus lanatus.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Watermelon.

**Common name (local language and colloquial)**
Mavisi/ Manwiwa/ Mabvembe, Chinganyama, Jeza/ Jena, Chisorochengwe, Gangambavha, Murambajeza.

**Major variety name**
Watermelon.

**Botanical name**
*Citrullus lanatus.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Shallow sand to sandy loam soils with temperatures that are moderate to high. Requires moderate rainfall. Slightly acidic to neutral soil pH.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Green.

**Leaf shape:** Lobed.

**Leaf texture:** Smooth hairless.

**Seed shape:** Oval.

**Seed coat colour:** Black, dotted black tan, green, red, and clump or white.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Rare.

**Extinct:** No.

*Photo credit: Shutterstock/ Single*

# Melon

## Traditional knowledge

Used as pig feed. Seeds can be roasted and salted to be eaten.

## Planting/growing guide

Form six to eight-inch raised beds to speed soil warming and have good drainage. Plant the seeds 1⁄2 to one inch deep. Sow 2 or 3 seeds in groups 18 to 24 inches apart. Covering the soil with a black plastic bag will help raise soil temperatures and improve fruiting.

## Harvest

Following the growing requirements, you can harvest three to four months later. The green rind will become creamy yellowish. When small cracks appear in the stem where it joins the fruit, they are ready to harvest.

## Uses

Used to make salads, frozen desserts, soda, and soup.

## Common advantage

- Do best where the season is warm and long.

## Common disadvantages

- They need room to roam
- Won’t grow well or taste good without plenty of warmth and sun.

# Quick facts

*Cucumis melo.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Melon.

**Common name (local language and colloquial)**
Mashamba, Rukuna, Jena, Mupwanyabofu, Duru, Renhopi/Nyiminyimi.

**Major variety name**
Melon.

**Botanical name**
*Cucumis melo.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Shallow sand soils with temperatures that are moderate to high. Requires moderate rainfall and can tolerate drought.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Slightly angular, heart-shaped leaves with ruffled edges.

**Leaf texture:** Smooth hairless.

**Seed shape:** Oval.

**Seed coat colour:** Greyish white.

**Flower colour:** Yellow or white.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ Luisecheverriurrea*

# Cassava

## Traditional knowledge

Flour used to make bread, *sadza*, porridge. Leaves used as a relish, it has cancer-fighting properties.

## Planting/growing guide

The stems can be planted either before or during the rainy season. Space can be 1 metre by 1 metre apart along each row and across ridges or mounds. Unless the stem is horizontal, bury 3/4 of the stem in the soil and cover the 1/4 with 10 centimetres of fine soil.

## Harvest

Ready for harvest after nine to ten months after planting. Hold the lower part of the stem and pull the roots from the ground, then remove the cassava from the base of the plant by hand.

## Uses

The root is used as food to make medicine, while the cassava fruit can be eaten raw, make cassava chips, starch, flour, *garri*; it can produce bio-ethanol and other bio-based products.

## Common advantages

- After a month, other short term crops may be planted in between the cassava plants
- Highest producer of carbohydrates among staple crops
- Drought tolerant.

## Common disadvantage

- Valleys and depression areas that usually get waterlogged are not very suitable and cassava roots.

# Quick facts

*Manihot esculenta.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Cassava.

**Common name (local language and colloquial)**
Mujumbuya.

**Major variety name**
Cassava.

**Botanical name**
*Manihot esculenta.*

**Method of propagation**
Cuttings.

**Agronomy & soil requirement**
Fertile sandy loam soils, well-drained soils.

## Seed/planting morphological traits

**Stem colour:** Grey.

**Leaf colour:** Green.

**Leaf shape:** Fan-shaped, deeply parted into five to nine lobes.

**Leaf texture:** Smooth hairless.

**Seed shape:** Oval.

**Seed coat colour:** Light or dark brown.

**Flower colour:** Light purple.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No.

**Extinct:** Extinction depends on variety.

*Photo credit: Depositphotos/ Kenjii*

# Rice

## Traditional knowledge

Boiled and served with relish or peanut butter. Rice is used to appease ancestors.

## Planting/growing guide

They can either be transplanted or direct-seeded. In direct seeding, seeds are sown directly in the field. While in transplanting, seedlings are grown in seedbeds before transplanting in the field. Direct seeding requires 60–80 kg of seeds per ha, while transplanting requires 40 kg per ha, at two plants per hill.

## Harvest

Rice is ready to harvest in its fourth month. The stalks will go from green to gold which means you can now cut and gather the panicles attached to the stalks.

## Uses

Used as food; to make soups, side dishes, breakfast cereals, and for alcoholic beverages.

## Common advantages

- Can be transplanted if there is space for a nursery.
- Direct seeding is suitable if you have limited resources or want to reduce labour costs.

## Common disadvantages

- Rice is a thirsty plant and suffers when the soil is dry
- Snail management is critical during the first 10 days of transplanted crops, and the first 21 days of direct-seeded crops.

# Quick facts

*Oryza sativa/ Oryza glaberrima.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Rice.

**Common name (local language and colloquial)**
Mupunga, Mutsvuku, Muchena.

**Major variety name**
Rice.

**Botanical name**
*Oryza sativa/ Oryza glaberrima.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Fertile swampy areas.

## Seed/planting morphological traits

**Stem colour:** Light green or yellow.

**Leaf colour:** Light Green.

**Leaf shape:** Long and narrow.

**Leaf texture:** Smooth hairless.

**Seed shape:** Long oval.

**Seed coat colour:** Beige, brown.

**Flower colour:** Cream, yellow, red, pink.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Depends on variety.

**Extinct:** Depends on variety.

*Photo credit: Depositphotos/ Stevanovicigor*

# Sweet sorghum

## Traditional knowledge

Stem used as food. Used to brew beer.

## Planting/growing guide

Planting should be delayed until soil temperatures reach 65°F at the 2- to 4-inch depth. Often planted in 30- inch rows but can be planted in 15 or 20-inch rows to maximize production potential. The planting depth is 0.75 to 1.25 inches. Sorghum is adapted to no-till planting.

## Harvest

Harvesting and processing sweet sorghum is quite different from grain sorghum. Stalks are cut at ground level with a cane knife or sharpened hoe. The leaves can wilt before crushing the whole plant in a roller mill, preferably in the cane field. Juice should be evaporated with as little stirring as possible and left to settle for 2 hours before skimming, filtering, cooling and storing in clean, covered pans or jugs. To harvest seeds:

1. Leave the plants in the field and collect the seeds when they are firm, hard and cannot be cut with a thumbnail.
2. Spread heads thinly in a dry place with good air movement.
3. Thresh and store seeds in tight containers.

## Uses

Sorghum syrup, fodder for livestock, and used in meals.

## Common advantages

- It is relatively drought-tolerant, has a high forage and ethanol yield per acre, has a relatively low cost of production, is adaptable to no-till.
- It is easy to establish and is highly productive.
- Sorghum can be used for hay and grazing.
- It can be grown in dry land and irrigated situations.

## Common disadvantages

- Sorghum requires high fertility soil and either good soil water or irrigation for maximum production.
- For maximum potential, it requires appropriate grazing management.
- Depending on the final use, varietal selection must be made carefully.

# Quick facts

*Sorghum bicolor.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Sweet sorghum.

**Common name (local language and colloquial)**
Ipwa, Chikudo, Mushwe We bhiza, Dumbuka chando, Muonde, Musweweshumba.

**Major variety name**
Sweet sorghum.

**Botanical name**
*Sorghum bicolor.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Planting should be delayed until soil temperatures reach 65°F at the 2- to 4-inch depth.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Light Green.

**Leaf shape:** Long and narrow.

**Leaf texture:** Smooth hairless.

**Seed shape:** Round.

**Seed coat colour:** Brown or white.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No and Rare in some communities.

**Extinct:** Not extinct. It is also new in some areas.

*Photo credit: Depositphotos/ Zannaholstova*

# Cucumber

## Traditional knowledge

Eaten raw, helps to detoxify the body.

## Planting/growing guide

Cucumbers are warm-season crops. Although cucumbers do best in loose sandy loam soil, they can be grown in any well-drained and fertile soil. Cucumbers must be grown in full sunlight. Because their roots reach 36 to 48 inches deep, do not plant them where tree roots rob them of water and nutrients—space rows of cucumbers 3 to 4 feet apart. Planting 6 inches apart and 1 inch deep is typical for many cucumber varieties.

## Harvest

When they are ready to harvest, they have a bright medium to dark green colour. This is usually after 50-70 days after planting. They should feel firm when touched but not hard or mushy. Because they are fragile, never pull or tug on the fruit, which can damage the plant. Harvest them every two days to keep the fruits from getting overripe. Pickling cucumbers will be ready when they are at least 2 inches long. Slicing cucumbers will be about 7-8 inches long to start picking them.

## Uses

They are used in meals and salads. The water in cucumbers is good for hydration. They are also known to keep slugs away.

## Common advantages

- Cucumbers are easy to grow from seeds sown directly into the garden.
- They do well when compost is added to the soil they are growing in.

## Common disadvantages

- Lack of pollination affects fruit set.
- Cucumber plants don't like to have their roots disturbed and commonly suffer from transplant shock.
- Lack of water limits cucumber vine growth.
- Poor nutrition affects cucumber plant health.
- Affected by cucumber beetles.
- Cucumbers need strong support that still is slender enough to grasp.

# Quick facts

*Cucumis sativus.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Cucumber.

**Common name (local language and colloquial)**
Magaka, Manganganga, Bhondasi, Bhondasi.

**Major variety name**
Cucumber.

**Botanical name**
*Cucumis sativus.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Soil pH should be between 6.0 and 6.5.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Dark Green.

**Leaf shape:** Three to five pointed lobes.

**Leaf texture:** Hairy.

**Seed shape:** Narrow, oval.

**Seed coat colour:** Beige.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Depends on variety.

**Extinct:** No.

*Photo credit: Shutterstock/ Hari Mahidhar*

# Okra

## Traditional knowledge

Relish, raw fruit, reduce blood pressure and control diabetes.

## Planting/growing guide

The okra seed can be difficult to germinate, so soak the seed overnight to encourage germination, which takes place after a week or more. Okra loves heat and can withstand a dry spell, but do your best to give plants 1 inch of water every week. Plant the okra seeds about 1 inch deep and 2 inches apart in the row, space the rows at least 3 feet apart. When the okra grows, thin out the plants to about 1 foot apart.

## Harvest

They will produce large flowers two months after planting. After three to four days later, the okra pods will be ready to pick. Harvest them when they are three to four inches long. You can pluck the okra every one to two days, or the yield will decrease. Store the okra for between three to five days in the refrigerator and if it is too mature, it can be dried, cured and used in flower arrangements.

## Uses

Can be used to prepare meals and for medicinal purposes.

## Common advantages

- Okra is generally insect and disease-free but occasionally problems will arise.
- Can live and produce happily even in extreme heat.

## Common disadvantage

- Soil temperature must be at least 70°F for okra to germinate.

# Quick facts

*Abelmoschus esculentus.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Okra.

**Common name (local language and colloquial)**
Manyanhanda.

**Major variety name**
Okra.

**Botanical name**
*Abelmoschus esculentus.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Grows best in soil with a near-neutral pH between 6.5 and 7.0, although it will do fine in a pH as high as 7.6.

## Seed/planting morphological traits

**Stem colour:** Dark green.

**Leaf colour:** Dark green.

**Leaf shape:** Heart-shaped

**Leaf texture:** Smooth.

**Seed shape:** Almost round.

**Seed coat colour:** Dark grey.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No.

**Extinct:** No.

*Photo credit: alchetron.com*

# Tsenza

## Traditional knowledge

Eaten raw or cooked.

## Planting/growing guide

Land preparation starts with clearing vegetation and then the construction of beds, which are preferably laid along the slope to facilitate good drainage. Field preparation involves clearing vegetation and then burning. In this cultivation system, deep ploughing is encouraged to develop shapely tubers and allow easy harvesting.

## Harvest

Tsenza is harvested six to seven months after planting. The plants are dug out or pulled up and cut into finger-like tubers. The tubers are stored in cool areas and underground pits to stay for at least two months.

## Uses

Tubers are a substitute for a potato or sweet potato. They can be boiled or roasted and the stems can be used to sweeten porridge. The leaves can be cooked as vegetable sauces.

## Common advantages

- They have great quality and show potential yield.
- Good seed availability.

## Common disadvantages

- Affected by poor rainfall.
- Might require thorough cleaning.
- Causes discolouration of the hands after harvesting.
- Is hard to peel and breaks easily.

# Quick facts

*Plectranthus esculentus.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Tsenza.

**Common name (local language and colloquial)**
Kaffir potato.

**Major variety name**
Tsenza.

**Botanical name**
*Plectranthus esculentus.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Soil pH of 6.5-7.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Oblong-elliptic.

**Leaf texture:** Hairy.

**Seed shape:** Oval.

**Seed coat colour:** Brown or grey.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Rare.

**Extinct:** Was lost from the area but now recovered.

*Photo credit: Shutterstock/ Hans Engbers*

# Eggplant

## Traditional knowledge

Used to make stew.

## Planting/growing guide

Eggplants are heat lovers; they need at least six hours of free sun daily. Space them 24 to 36 inches apart and improve planting holes by mixing in 2 inches of compost to help hold moisture and fertilizer in the soil. The broad eggplant leaves help eggplant seedlings to grow faster.

## Harvest

Harvest may begin when fruits are developed and small, but growing fruits to full size before harvesting eggplants results in more fruit for usage. The inner flesh turns to cream upon maturity, and the fruits become firm before the seeds are visible. To test if they are mature, press the fruit with your thumb and if the flesh springs back, it is not ripe. If your thumb leaves an indentation, it is overripe. A good eggplant that tastes the best should be in between. A just ripe eggplant when sliced will have soft, well-formed but immature seeds; an immature and unripe eggplant will have no visible seeds; an overripe eggplant will have hard, dark seeds.

## Uses

Can be grilled, stuffed, roasted, fried or enjoyed with other dishes.

## Common advantages

- Sensitive to the cold.
- A good companion for amaranth, beans, marigolds, peas, peppers, spinach, and thyme.

## Common disadvantage

- Can be prone to disease. This can be remedied through staking which keeps the eggplant fruit from touching the ground and improves fruit shape, particularly on elongated fruit.

# Quick facts

*Solanum melongena.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Eggplant.

**Common name (local language and colloquial)**
Mharupwa.

**Major variety name**
Eggplant.

**Botanical name**
*Solanum melongena.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Will yield well on a wide range of well-drained soils that contain ample organic matter. The ideal soil pH for production is 5.5 to 6-8.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Lobed.

**Leaf texture:** Coarse texture.

**Seed shape:** Round.

**Seed coat colour:** Beige or brown.

**Flower colour:** White or purple.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Rare.

**Extinct:** No.

*Photo credit: Pixabay/ Michael Gaida*

# Sunflower

## Traditional knowledge

Used as stock feed, cooking oil, the seeds reduce the effects of arthritis.

## Planting/growing guide

Sunflowers grow best in locations with direct sunlight. (6 to 8 hours per day). The soil should be well-drained that does not form a pool after it rains. They have long tap roots that need to stretch out; in preparing a bed, dig down 2 feet in depth and about 3 feet across. They need acidic to somewhat alkaline soil (pH 6.0 to 7.5). If possible, plant sunflowers in a spot sheltered from strong winds, perhaps along a fence or near a building. Larger varieties may become top-heavy and a strong wind can be devastating.

## Harvest

Harvest sunflowers when their petals become dry and begin to fall. The green base of the head will turn yellow and eventually brown. As the blooms start to fade, check your flower heads closely. The tiny petals in the centre disc will dry out, and a light scraping will cause them to drop, exposing the tightly packed seeds. Seeds will look plump and the seed coats will be black or have black and white stripes depending on the variety.

## Uses

Leaves are used as fodder, the flowers yield a yellow dye, and the seeds contain oil and are used for food. The sweet yellow oil obtained by compression of the seeds is considered equal to olive or almond oil for table use. Sunflower oil cake is used for stock and poultry feeding.

## Common advantages

- Squirrels and birds will eat them happily and drop a bunch on the ground, resulting in volunteer sunflowers the next season.

## Common disadvantage

- Strong winds can destroy the plants.

# Quick facts

*Helianthus annuus.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Sunflower.

**Common name (local language and colloquial)**
Maringazuva.

**Major variety name**
Sunflower.

**Botanical name**
*Helianthus annuus.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Acidic to somewhat alkaline soil (pH 6.0 to 7.5).

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green upper surface and light green lower surface.

**Leaf shape:** Triangular or heart-shaped.

**Leaf texture:** Hairy.

**Seed shape:** Broad, cylindrical or drop-shaped

**Seed coat colour:** Oil-producing seed is black, while the edible seed is white with a black stripe.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Yes.

**Extinct:** No.

*Photo credit: Shutterstock/ Anmbph*

# Beans

## Traditional knowledge

Boiled for relish, used to make coffee.

## Planting/growing guide

Beans are warm-season crops. They grow in well-drained and warm soil. Soaking bean seeds before planting will soften the seed's outer shell and speed up the germination process. Sow beans 2.5 centimetres deep in heavy soil or 4 centimetres deep in light soil. Dry bean seeds may take as long as two weeks to germinate. Soaked seeds will usually show signs of germination within three to four days.

## Harvest

Beans are ready to pick when the pods are well-formed, round, and snap if bent in half. Be sure to lift the bean plants and look under the foliage to pick every ripe bean. This will promote a continued crop. If beans are left on the plants too long, the seeds overdevelop and the pods become tough.

## Uses

Used as food for humans, some people use beans as meat substitutes because of the high protein amounts.

## Common advantage

- Beans improve the soil with bacteria, which forms nodules on their roots. The nodules absorb nitrogen from the air in the soil, fertilizing not only the bean plants but others as well.

## Common disadvantages

- Seeds will rot in the ground in cold, damp weather.
- Too much fertilizer will promote extensive foliage growth and little crop.

# Quick facts

*Phaseolus vulgaris.*

QUICK FACTS

**Source**
Zimbabwe.

**Community name**
Bikita communities of Chiroorwe, Gangare, Mamutse, Masasire-Mazvimba and Mutsinzwa.

## Seed names and multiplications

**Common/English names**
Beans.

**Common name (local language and colloquial)**
Sugar bean, Zebra bean, Yellow/black sweet bean, Butter bean, Matsvuku, Coffee bean white, Coffee bean black, Soya Beans, Tsukurewara, Brown with white eye.

**Major variety name**
Beans.

**Botanical name**
*Phaseolus vulgaris.*

**Method of propagation**
Clones.

**Agronomy & soil requirement**
Beans grow best in slightly acidic to neutral soil, pH between 6 and 7. Clay or silt loams are better for bean production than sandy soils.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Light green.

**Leaf shape:** 3 oval leaflets.

**Leaf texture:** Smooth, some varieties have a hairy texture.

**Seed shape:** Oval round.

**Seed coat colour:** Green, yellow, white, purple, pink.

**Flower colour:** White, pink, lilac or purple flowers.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Pixabay/ Mabel Amber*

# Barley

## Traditional knowledge

"Enat" means mother when referring to this particular barley species. It is nutritional for lactating mothers. According to elders, it was the first crop that was grown by ancestors. It has multi-purpose benefits, including being used in rituals and as medicine. Builds nutrition for treating anaemia, it is used for making *injera*, local beverage and porridge. It can also be roasted as a snack (KOLO). This seed is mainly used as a snack during coffee ceremonies.

## Planting/growing guide

It grows best in well-drained, fertile loam or light clay soils in areas having cool, dry, mild winters. It also does well on light, drought soils and tolerates alkaline soils better than other cereal crops. Barley is planted with a spacing of one and a half or two inches of depth. The idea is that the seed should be placed deep enough to have access to adequate moisture yet shallow enough to emerge as quickly as possible. With many varieties of barley to choose from, be sure to select a regionally adapted one.

## Harvest

Barley requires at least 90 days from seed to harvest. Barley is typically ready to harvest when the stalks and heads have turned from green to yellow and the seed heads have begun drooping towards the ground. The simplest and most common harvesting method for barley is to wait until the grain has ripened and dried to a moisture content of less than 12%. Keep a close eye on your crop and prepare to dry the grain, cut it and store it.

## Uses

Livestock feed, raw material for alcohol and starch production, and for food.

## Common advantages

- You don't need acres of land to grow barley in the garden.
- Barley does not require too much watering.

## Common disadvantage

- It may be hard to source small amounts of seed.
- Too much watering can lead to decomposition.

# Quick facts

*Hordeum vulgare.*

QUICK FACTS

**Source**
Ethiopia.

**Community name**
Boru Silassie community.

## Seed names and multiplications

**Common/English names**
Barley.

**Common name (local language and colloquial)**
Enat gebes, Tikur gebes, Gendit, Temej.

**Major variety name**
Barley.

**Botanical name**
*Hordeum vulgare.*

**Method of propagation**
With seed.

**Agronomy & soil requirement**
Medium to poor loam soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Spear-pointed tip.

**Leaf texture:** Smooth.

**Seed shape:** Oval & pointed at both tips.

**Seed coat colour:** Beige to golden yellow.

**Flower colour:** Red, yellow or purple.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** Rare.

**Extinct:** No.

*Photo credit: Depositphotos/ Birute*

# Wheat

## Traditional knowledge

Like "*Enat gebes*" this wheat species is also widely used and multi-purpose. This species named after "Abesha" means Amhara people, among other meanings. It is a nutritious food, particularly for lactating mothers. Suitable for making bread, used to make the local brew. Its maturity time is longer and previous straw can be used for cottages roofing.

## Planting/growing guide

About 1,000 square feet will yield 30 kg of grain. Wheat should get plenty of sun while it grows. You should till your soil to a depth of 6 inches/ 15 centimetres. If your soil is overly dry (it will be a light brown colour) or somewhat rocky, you might need a layer of compost. This provides the soil with extra nutrients and can help the wheat grow better. Spread the seeds to have approximately one seed per 1 square inch (2.5 square centimetres) of space. Cover the seed with a thin layer of soil. This prevents the seed from drying out in the sun and birds from feeding on it. Water your newly planted seeds. It would help if you soaked the area to be planted right away. Keep the entire planting area moist until the wheat begins to grow. Cooler weather and more rain means less watering on your part.

## Harvest

When the wheat is dry enough and no green is showing, it is ready to harvest. It will turn golden yellow and become brittle. The grains become hard and the straw turns dry. To avoid grain shattering, harvest and thresh high-yielding wheat varieties as soon as they are fully ripe. The harvesting can start five days earlier before the maturing stage without adverse effects on the yield or quality of the grains.

## Uses

Used as food and for making white bread, pastries, pasta, and pizza.

## Common advantage

- Requires less watering with more rain.

## Common disadvantage

- Increasing heat stress; dwindling water supplies for irrigation; a growing threat of new virulence of diseases such as wheat rusts.

# Quick facts

*Triticum aestivum.*

QUICK FACTS

**Source**
Ethiopia.

**Community name**
Boru Silassie community.

## Seed names and multiplications

**Common/English names**
Wheat.

**Common name (local language and colloquial)**
Abesha, Rejimu Gundee, Zereteret, Kekeba(Qeqeba), Tikur sindee, Borena, Germen, Achiru Gundee.

**Major variety name**
Wheat.

**Botanical name**
*Triticum aestivum.*

**Method of propagation**
With seed.

**Agronomy & soil requirement**
Medium, fertile or black loam soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Spear-pointed tip.

**Leaf texture:** Can be smooth or rough.

**Seed shape:** Oval & pointed at both tips.

**Seed coat colour:** Red or white.

**Flower colour:** Yellow or purple.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** Yes.

**Extinct:** No.

*Photo credit: Depositphotos/ Sophonnawit*

# Teff

## Traditional knowledge

It is productive for humans and animals, but it takes a long time to mature. Very filling, one wouldn't starve for long hours. It is not an indigenous variety and was introduced by the government's agricultural extension programme. Less productive due to overgrowth of its stalk. *Injera* made from this variety is good.

## Planting/growing guide

Teff is best sown when soils warm up to 65°F, followed by warmer growing temperatures of at least 80°F. Teff is very intolerant of cold temperatures. A firm seedbed is essential when sowing teff, with a shallow sowing depth of between 1/8 and 1⁄4 inches. Seeding deeper than 1⁄2 inch has great potential of a stand failure. The sowing rate for sandier soils is 7 kg/ha to 10 kg/ha and for clayey soils, 10 kg/ha to 15 kg/ha.

## Harvest

Ready for harvest between 60 and 120 days after planting when the leaves of the plants turn from green to yellow. If teff is harvested past its maturation, seeds will fall off, especially in windy or rainy conditions.

## Uses

Staple food crop.

## Common advantages

- Combines excellent forage quality with high yield.
- Seeds are easy to store, as they are resistant to most pests during storage.

## Common disadvantage

- Intolerant to cold temperatures.

# Quick facts

*Eragrostis tef.*

QUICK FACTS

**Source**
Ethiopia.

**Community name**
Boru Silassie community.

## Seed names and multiplications

**Common/English names**
Teff.

**Common name (local language and colloquial)**
Gunde, Quncho, Shesho teff.

**Major variety name**
Teff.

**Botanical name**
*Eragrostis tef.*

**Method of propagation**
With seed.

**Agronomy & soil requirement**
Light fertile soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Thin like grass.

**Leaf texture:** Can be smooth or rough.

**Seed shape:** Small, round.

**Seed coat colour:** Brown or beige.

**Flower colour:** Light purple.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ Irochka*

# Oat

## Traditional knowledge

It provides good nutrition, laborious during harvesting and threshing. It is served on special occasions. Good at making high-quality bread, porridge and has a good market value.

## Planting/growing guide

Time seeding to allow at least six to 10 weeks of cool-season growth. Moderately fertile soil gives the best stands. Broadcast seed into cultivated soil so that the seeds are about 3 inches (7 cm) apart and one-half inch (1 cm) deep. No thinning is required. Increase spacing to 8 inches (20cm) apart when growing oats with other cover crops.

## Harvest

Oat is ready to swath when the panicle has turned yellow or brown and the least mature kernels have turned cream. Oat left too long in the field can wither, lose quality and shatter during storms. To harvest the oats, cut the seed heads from the stalks as high up as possible. Higher up is better, as you will have less straw to mess with when threshing the grains. Store the oats in a warm, dry area while curing them. Once the kernels are ripe, you can thresh out the oats.

## Uses

Hay, pasture and silage and for food.

## Common advantage

- Oats can be grown as a cover crop and green fodder, improving the soil and suppressing weed.

## Common disadvantage

- Killed by temperatures below 5F (-15C).

# Quick facts

*Avena sativa.*

QUICK FACTS

**Source**
Ethiopia.

**Community name**
Boru Silassie community.

## Seed names and multiplications

**Common/English names**
oat.

**Common name (local language and colloquial)**
Aja.

**Major variety name**
Oat.

**Botanical name**
*Avena sativa.*

**Method of propagation**
With seed.

**Agronomy & soil requirement**
Medium loam soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Thin, long, pointed at the tip.

**Leaf texture:** Smooth or rough.

**Seed shape:** Oval, pointed at two ends.

**Seed coat colour:** Brown.

**Flower colour:** Purple or yellow.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ jahidul2358@gmail.com*

# Lentil

## Traditional knowledge

Farmers usually plant "*misir*" (lentil) for marketing purposes as a cash crop, and it has a good market value. Sauce made out of this variety is sweet. Can be used to make sauce and snacks when boiled and served.

## Planting/growing guide

Sow lentils outdoors in spring as early as 2 to 3 weeks before the average last frost date. Lentils can be started indoors 2 to 4 weeks before setting in the garden. Lentil seeds will germinate in 10 days at 68°F.

## Harvest

Lentils require 80 to 110 days to come to harvest. As the pods begin to dry, stop watering the plants. Wait for them to dry out as well, then pull the vines out and pluck the pods off. The vines can be added to a compost pile to break down, forming compost manure. You will then need to remove the seeds from their pods and spread them out on a tray in a cool, dry location to finish drying out.

## Uses

Used in food and soups.

## Common advantages

- Lentils can be started indoors before transplanting to the garden
- Lentil production is relatively sustainable, there is no known significant damage to air, water, land, soil, forests

## Common disadvantage

Too much watering can hinder lentil growth.

# Quick facts

*Lens culinaris.*

QUICK FACTS

**Source**
Ethiopia.

**Community name**
Boru Silassie community.

## Seed names and multiplications

**Common/English names**
Lentil.

**Common name**
**(local language and colloquial)**
Miser.

**Major variety name**
Lentil.

**Botanical name**
*Lens culinaris.*

**Method of propagation**
With seed

**Agronomy & soil requirement**
Poor soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Small and round.

**Leaf texture:** Smooth.

**Seed shape:** Oval, a bit flattened.

**Seed coat colour:** Grey or tan.

**Flower colour:** Purple.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** Not extinct.

*Photo credit: Depositphotos/ Actionbleem*

# Maize

## Traditional knowledge

Enat beqolo: It is like "Enat sinde and Enat gebes" where the word "Enat" refers to "mother." It got its name because of its multiple benefits and it is tasty. Women like this species as it is suitable for cooking. It is nutritious for humans and also as an animal feed. However, it is becoming extinct as increasingly replaced by other varieties such as "American and Kenyan bekolo". Appearance is short, which makes it vulnerable, that is, to pests.

Bunign (Fatima Konjo)- It is also known as "*Fatima konjo*," meaning - "Fatima" (name of lady) and "Konjo" (beautiful), named after its feature of fast maturing and sweet taste. It is not productive, so farmers only keep them in small quantities for sweet taste.

America- "America bekolo/ maize" Named after it was introduced from America. Farmers like it as it is productive and tall, making it less vulnerable to animal pests.

Kenya- " Kenya bekolo/ maize," also named after the context from Kenya.

Good to make bread mixed with wheat, *injera*, and as a local brew.

## Planting/growing guide

Ensure the farm is well-ploughed and ready for planting. Ploughing should be done two to three weeks before the onset of rains. A depth of at least 20cm. At least 30 cm of wet soil throughout the soil profile before sowing, two to three seeds are placed in an evenly-spaced line in each hole while the soil is still moist. With soil, maize crop prefers a well-drained light loam or alluvial soil with a pH of 5.5 to 7.0. Completing planting in a day can ensure even germination and an even crop canopy, which helps shed out weed growth.

## Harvest

Maize is harvested at physiological maturity, although it can be left in the field to allow further drying. After the silk appears, around 20 days later is when maize is ready to harvest. The silk turns brown at this time, although the husks remain green. Each stalk should have one ear near the top and when the conditions are right, there may be another ear lower down on the stalk.

## Uses

It can be dried, baked, roasted, boiled, or steamed on the cob and used as food for humans and livestock. It is used as a snack and cereal. Maize germ contains about 45–50% of the oil used in cooking, salads, and is obtained from the wet milling process.

## Common advantages

- Produces good crops in various climatic zones and it prospers in areas too dry for rice and too wet for wheat.
- High energy complement to grass silage.

## Common disadvantages

- High management input.
- Risk of under-performance on marginal sites in difficult seasons.

# Quick facts

*Zea mays.*

QUICK FACTS

**Source**
Ethiopia.

**Community name**
Boru Silassie community.

## Seed names and multiplications

**Common/English names**
Maize.

**Common name**
**(local language and colloquial)**
Enat beqolo, Bunign (Fatima Konjo), Keniya.

**Major variety name**
Maize.

**Botanical name**
*Zea mays.*

**Method of propagation**
With seed.

**Agronomy & soil requirement**
Fertile loam soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Long and narrow.

**Leaf texture:** Hairy.

**Seed shape:** Round.

**Seed coat colour:** White, black, purple or spotted depending on variety.

**Flower colour:** Clean, purple silk.

## Seed/planting material availability status

**Abundant:** Not abundant.

**Endangered:** Rare.

**Extinct:** Were lost from the areas but have now been recovered by some communities.

*Photo credit: Pixabay/ WikimediaImages*

# Linseed

## Traditional knowledge

Cash crop and has medicinal purposes. Good for maternity time. Can be used as a laxative; make sauce served with thick porridge.

## Planting/growing guide

Linseed is a cool-season crop and adapted to the same climate as a wheat crop. It is confined to sea level or lower elevations (600 metres) and plains. As a seed crop, it can be grown at higher altitudes also. The minimum temperature regime is 10°C, while the maximum is 38°C. The seed crop needs about 25°-30°C during germination and vegetative phase and 15°-20°C during seed formation. The fibre crop requires still lower temperature and high humidity. Linseed is generally grown where annual precipitation ranges from 500 to 800 mm. A well-distributed rainfall of 450 to 500 millimetres is adequate for optimum yield. Drought and high temperature (32°C) during and after the flowering stage reduce the yield, oil content and oil quality.

## Harvest

The crop may be harvested when the leaves are dry, capsules turn brown and the seeds have become shiny. If the fibre is also desired, harvesting should be done at physiological maturity when the crop is still green. Generally, the crop is harvested between March and April by cutting the plants close to the ground with a sickle or by pulling the plants. The harvested crop is left in the field for a few days for sun drying. Threshing is done by beating the dried plants with sticks or trampling under cattle's feet. The seed is separated from the chaff by winnowing.

## Uses

Linseed forms are used as food.

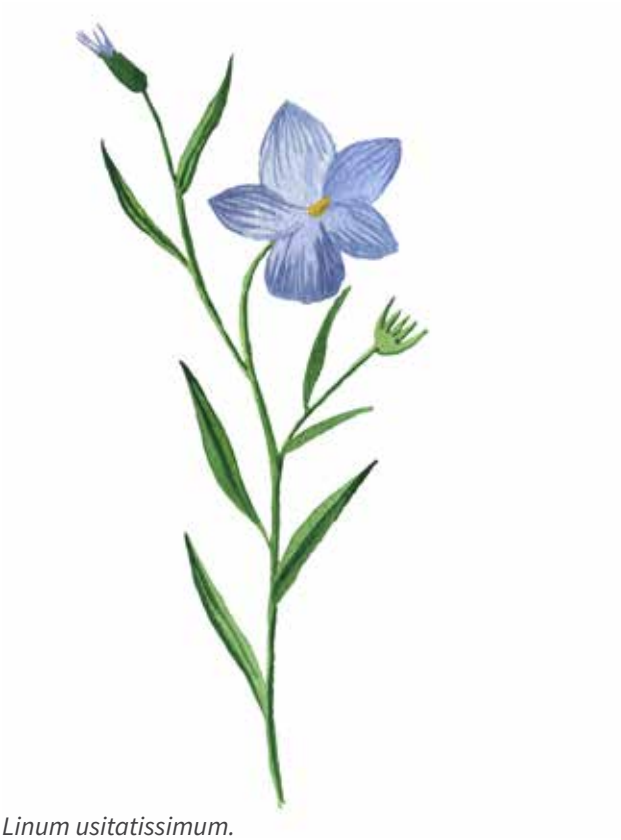
## Common advantage

- The crop makes good growth on well-drained, moderately deep silty loam, clay loam and silty clays.

## Common disadvantage

- A rare economic crop to grow in major dry land cropping areas.

# Quick facts



*Linum usitatissimum.*

QUICK FACTS

**Source**
Ethiopia.

**Community name**
Boru Silassie community.

## Seed names and multiplications

**Common/English names**
Linseed.

**Common name (local language and colloquial)**
Telba.

**Major variety name**
Linseed.

**Botanical name**
*Linum usitatissimum.*

**Method of propagation**
With seed.

**Agronomy & soil requirement**
Poor soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Small and lance-shaped.

**Leaf texture:** Smooth.

**Seed shape:** Small, oval.

**Seed coat colour:** Brown.

**Flower colour:** Blue, white or pink.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** Rare.

**Extinct:** Rare.

*Photo credit: Pixabay/ Jaapbleijenberg*

# Taro

## Traditional knowledge

Used for consumption and donation, when there is a surplus, the community sells the surplus.

## Planting/growing guide

Grown from small sections of tuber, small tubers, or suckers. Plant taro in furrows 6 inches (15cm) deep and cover corms with 2 to 3 inches of soil; space plants 15 to 24 inches apart in rows about 40 inches apart (or space plants equidistant 2 to 3 feet apart). Taro corns need at least 200 days of warm weather to mature, so you need to time it well. If your plant lives outside year-round, the temperature should always be above 45°F (cooler temps may affect tuber growth).

## Harvest

The whole process takes about 200 days from planting corms to harvest. To harvest the corms (tubers), lift them gently from the soil with a garden fork just before the first frost in the fall. The leaves may be picked as soon as the first few leaves have opened.

## Uses

Used as food, the root powder can be used to make sweet tea.

## Common advantage

- They are waterproof as a result of honeycomb-like patterns on the surface of the leaf.

## Common disadvantage

- In its raw form, the plant is toxic due to the presence of calcium oxalate.

# Quick facts

*Colocasia esculenta.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Taro.

**Common name (local language and colloquial)**
Glin.

**Major variety name**
Taro.

**Botanical name**
*Colocasia esculenta.*

**Method of propagation**
Cuttings (the head).

**Agronomy & soil requirement**
Loose soils very rich in organic matter/ 9 months.

## Seed/planting morphological traits

**Stem colour:** Purple.

**Leaf colour:** Green.

**Leaf shape:** Heart.

**Leaf texture:** Smooth.

**Seed shape:** Rounded.

**Seed coat colour:** Grey/ brown.

**Flower colour:** No flowers.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** Yes.

**Extinct:** No.

*Photo credit: Shutterstock/ Wilaiwan Jantra*

# Groundnuts

## Traditional knowledge

Peanut butter, eaten raw, roasted, salted, boiled and or marinated, *mutakura*, oil can be used as skin ointment, cooking oil extraction, *mafuta echinu*. Help relieve heartburn.

## Planting/growing guide

They grow well in warm areas below 1500 meters above sea level. They require a temperature ranging from 28 to 30$^{0}$c. Their flowering and seed formation is affected by low temperatures. Groundnuts require 500 to 600 millimetres of well-distributed rainfall throughout the growing season; they must be grown at the onset of rains. Groundnuts can survive drought or even reduced rain, but there will be low yields. They can, however, grow well in clay soil.

## Harvest

It takes three months for ground nuts to mature. To know when they are mature enough to harvest, note the colour of the pods' inside and whether they have darkened. Select plants from different places in the field and after digging them up, remove and count the pods and open them. If three-quarters of them open easily and the inside parts have dark markings, you should start harvesting. To prevent the development of aflatoxin, harvesting crops during rainy conditions should be avoided.

## Uses

Snacks can be used as bread spread or grounded to be used in making porridge.

## Common advantage

- Are a sustainable crop because they add beneficial nitrogen to the soil.

## Common disadvantage

- Low yields when faced with drought.

# Quick facts

*Arachis hypogaea.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Groundnut.

**Common name (local language and colloquial)**
Azi.

**Major variety name**
Groundnut.

**Botanical name**
*Arachis hypogaea.*

**Method of propagation**
Direct sowing.

**Agronomy & soil requirement**
Any type of soil, 3 months.

## Seed/planting morphological traits

**Stem colour:** Light green.

**Leaf colour:** Green.

**Leaf shape:** Tiny oval leaves.

**Leaf texture:** Smooth.

**Seed shape:** Small seed.

**Seed coat colour:** Beige.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** Rare.

**Extinct:** No.

*Photo credit: Shutterstock/ Julio Ricco*

# Yam

## Traditional knowledge

Used in protection against the forces of evil. Use to honour the serpent god, the mortar that pounded other yam varieties should not be used to pound the *lefé* variety (according to tradition). Consumption and donation, when there is a surplus, the surplus is sold/ used in pharmacopoeia and rituals.

## Planting/growing guide

Yams grow best in moist, well-drained soil. They do not grow well in heavy, waterlogged soils, so if your soil is not light and well-draining, amend it thoroughly with plenty of organic matter such as compost. Yams are heavy feeders and this will benefit their root growth. Planting is done by seed yam or cut sets from ware tubers. One day before planting, the tubers have to be subjected to treatment with wood ash or a fungicide (thiabendazole) to prevent damage to the soils. The sets are planted at an interval of 15–20 centimetres (5.9–7.9 in) with the cut face facing up.

## Harvest

Yams typically take about 14 weeks to mature. They should be harvested when the tops of plants start to go yellow and wither.

## Uses

Grown for food.

## Common advantage

- Heavy feeding benefits their root growth.

## Common disadvantages

- Do not grow well in heavy, waterlogged soils.
- Take much longer to be ready for harvest.
- More difficult to peel than the skin of sweet potatoes.

# Quick facts

*Dioscorea rotundata.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Yam.

**Common name (local language and colloquial)**
Monlikoun-tèvi or kpètèvi.

**Major variety name**
Yam.

**Botanical name**
*Dioscorea rotundata.*

**Method of propagation**
Cuttings.

**Agronomy & soil requirement**
Black clayey soils (clay soil, sandy soil very rich in organic matter)/ 1 year, all soil types/ 1 year.

## Seed/planting morphological traits

**Stem colour:** White with thorns.

**Leaf colour:** Green.

**Leaf shape:** Elongated heart.

**Leaf texture:** Hard and thorny.

**Seed shape:** Cylindrical.

**Seed coat colour:** Grey/ brown.

**Flower colour:** No flowers or can be yellow, brown or white.

## Seed/planting material availability status

**Abundant:** Abundance depends on variety.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Shutterstock/ Nednapa*

# Potato

## Traditional knowledge

For consumption and for sale.

## Plant description

Has compound leaves which are spirally arranged; each leaf is 20–30 centimetres (about 8–12 inches) long and consists of a terminal leaflet and two to four pairs of leaflets. The stem of the potato is usually white to ivory-coloured. Although a few roots grow along its length, most are clustered at the bottom of the plant. Potato tubers develop all along the buried stem.

## Planting/growing guide

Dig trenches that are about eight inches deep. Keep the rows about three feet apart. In the trenches, plant a seed potato every 12 inches or so. The “eye” should be facing upward. After a few weeks, the potato plants will begin to sprout. Hill the potatoes every 1-2 weeks. Potato tubers grow on the buried lower stems of plants grown in well-drained soil and cool temperatures. Place seed pieces about a foot apart and two or three inches deep and water intensely to start their sprouting.

## Harvest

You can harvest potatoes as soon as they reach the size you desire. Generally, “new” potatoes are ready approximately 60-90 days from planting, depending on the weather and the potato variety. One sign that young potatoes are ready is the formation of flowers on the plants. When the buds drop or the flowers that do bloom begin to fade, another good indication is seeing unopened flower buds dropping from the plant. The leaves will still be green, but some will fade to yellow.

## Uses

Eaten as a vegetable and can be used for medicinal purposes.

## Common advantage

- Certified seeds give a better yield than ordinary ones.

## Common disadvantages

- When potatoes grow too fast it may cause hollow tubers with cavities at the centre. This is usually due to too much fertilizer and too much water.
- Excessive application of nitrogen can lead to no potatoes or low potato yield.

# Quick facts

*Solanum tuberosum.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Potato.

**Common name (local language and colloquial)**
Azi.

**Major variety name**
Potato.

**Botanical name**
*Solanum tuberosum.*

**Method of propagation**
Cuttings (lianas).

**Agronomy & soil requirement**
Soft floors/ 3 months.

## Seed/planting morphological traits

**Stem colour:** White or red.

**Leaf colour:** Dark green or green.

**Leaf shape:** Heart.

**Leaf texture:** Smooth.

**Seed shape:** Cylindrical or round.

**Seed coat colour:** Red or white.

**Flower colour:** No flowers.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No or rare.

**Extinct:** No.

*Photo credit: Depositphotos/ Dvoevnore*

# Basil

## Traditional knowledge

For home use, used for coughs, *atita*, to treat infections and for sale.

## Planting/growing guide

Basil thrives in warm temperatures and full morning sun. If you live in an area with scorching midday sun, try to give your basil light shade during the hottest time of day. Plant 1/4" deep and keep at 70°F (21°C) for best germination. Transplant to the field when seedlings have 3-4 sets of leaves, spacing at 4-8" apart in rows 18" apart. Soil should be moist but well-drained. Basil works great in containers or raised beds, allowing for better drainage.

## Harvest

Pick the basil leaves as soon as the plants are 6 to 8 inches tall. Once temperatures hit 80°F (27°C), basil will start leafing out—harvest in the early morning, when leaves are at their juiciest. Basil is ready for harvest 50 to 60 days after planting. Pinch out leaves as you need them; regular harvest will keep plants growing strong and prevent flowering. When a branch has 6 to 8 leaves, harvest all but the first set of leaves.

## Uses

Used for cooking and for medicinal purposes.

## Common advantages

- Performs well in partial sun.
- Planting basil as a companion plant with other produce helps you get bug-free vegetables and fruits as it repels insects.

## Common disadvantages

- Roots are attacked during wet, cool conditions
- Can experience stunted growth.

# Quick facts

*Ocimum basilicum.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Basil.

**Common name (local language and colloquial)**
Koclossou-dinkpadja.

**Major variety name**
Basil.

**Botanical name**
*Ocimum basilicum.*

**Method of propagation**
Nursery.

**Agronomy & soil requirement**
Any type of soil, harvest from 2 months.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Small, oval leaves.

**Leaf texture:** Slightly rough.

**Seed shape:** Tiny seed.

**Seed coat colour:** Black.

**Flower colour:** White.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ Aga77ta*

# Amaranth

## Traditional knowledge

Rich in nutrients. For home use and for sale.

## Planting/growing guide

They prefer a warm climate, full sun, and well-drained soil. Water them during dry periods, once or twice per week. Add a general-purpose fertilizer once or twice a season. Amaranth will grow tall, 1-2 feet. They will produce blooms on strong, straight stems. Flowers are long-lasting.

## Harvest

The best way to determine if the seed is harvestable is to gently but briskly shake or rub the flower heads between your hands and see if the seeds fall readily. (Numerous small and appreciative birds may give hints as to when to start doing this.) An easy way to gather ripe grain is; in dry weather, bend the plants over a bucket and rub the seed-heads between your hands. Cutting and hanging plants to dry indoors does not work very well: the plants become highly bristly and it is difficult to separate the seed from the chaff.

## Uses

Used as a cereal, for food and for medicinal purposes.

## Common advantage

- Originating in warmer climates, Amaranth is heat and drought resistant.

## Common disadvantage

- Most farms simply do not have the ability to ensure effective sowing of amaranth seeds due to the lack of specialized seeders.

# Quick facts

*Amaranthus viridis.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Amaranth.

**Common name (local language and colloquial)**
Fortètè, Fortètè vovo.

**Major variety name**
Amaranth.

**Botanical name**
*Amaranthus viridis.*

**Method of propagation**
Nursery.

**Agronomy & soil requirement**
Any type of soil, harvest from 5 weeks to 9 weeks.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Medium leaves.

**Leaf texture:** Smooth.

**Seed shape:** Tiny seed.

**Seed coat colour:** Brown.

**Flower colour:** Reddish-rose colour.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** No or rare.

**Extinct:** No.

*Photo credit: Shutterstock/ My-ma-le-wow*

# Vernonia

## Traditional knowledge

For home use and for sale.

## Planting/growing guide

They like direct sunlight and water in well-drained soil. Bitter leaf plants perform well in loam, well-drained soil conditions. Keep soil evenly moist. The bitter leaf grows tall to about 18 centimetres high.

## Harvest

Once your plant has branched out, it is best to cut the ends of shoots rather than picking individual leaves. This causes the plant to produce more branches with lots of leaves. In East Africa, shoots are cut during the wet season to regenerate, and leaves are picked during the dry season. The recommended time for harvesting it for the market is to give them a minimum of 2 weeks before the first harvest.

## Uses

Used for medicinal purposes and as a main dish.

## Common advantage

- It is extreme bitterness successfully keeps most indigenous animals away.

## Common disadvantage

- Contains heavy metal content.

# Quick facts

*Vernonia amygdalina.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Vernonia.

**Common name (local language and colloquial)**
Amanvivè.

**Major variety name**
Vernonia.

**Botanical name**
*Vernonia amygdalina.*

**Method of propagation**
Nursery and cutting.

**Agronomy & soil requirement**
Any type of soil, harvest after 3 months.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Wide oval leaves.

**Leaf texture:** Smooth.

**Seed shape:** Bell-shaped seed.

**Seed coat colour:** Black.

**Flower colour:** White, purple or green.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** Rare.

**Extinct:** No.

*Photo credit: Depositphotos/ Sandipanphotography7076*

# Spinach

## Traditional knowledge

Used for food.

## Planting/growing guide

Spinach requires cool weather and deep, well-limed soil for fast growth and maximum leaf area. Space spinach plants 12 inches apart in fertile, well-drained soil with a pH of 6.5 to 7.0. Start the growing season right by mixing in several inches of aged compost or other rich organic matter into your native soil.

## Harvest

It needs six weeks of cool weather from seed sowing to harvest. Spinach leaves are ready to harvest as soon as they are big enough to eat. Harvest by removing only the outer leaves and allowing the centre leaves to grow more prominent; this will enable the plant to keep producing. Picking the outer leaves also gives the advantage of briefly delaying bolting. When plants are about to bolt, pull the entire plant at once to enjoy the leaves before becoming bitter.

## Uses

Used as food and to make medicine.

## Common advantage

- It is a cool-weather crop.

## Common disadvantages

- High temperatures or dry conditions will cause the seed to dry and fail to germinate.
- Poor soil drainage affects plant growth.

# Quick facts

*Spinacia oleracea.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Spinach.

**Common name (local language and colloquial)**
Soma wewe, Soma vovo.

**Major variety name**
Spinach.

**Botanical name**
*Spinacia oleracea.*

**Method of propagation**
Dispersion.

**Agronomy & soil requirement**
All types of soils.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Purple and green.

**Leaf shape:** Oval.

**Leaf texture:** Smooth.

**Seed shape:** Long, in a capsule.

**Seed coat colour:** Black.

**Flower colour:** White.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Pixabay/ Katharina N*

# Tomato

## Traditional knowledge

For domestic usage. Used in food and salads.

## Planting/growing guide

Grow tomatoes in full sun, at least 8 hours of sun each day. Prepare planting beds by adding 2 to 4 inches (5- 10 centimetres) of aged compost or commercial organic planting mix before transplanting. Turn the soil to at least 12 inches (30cm) deep before planting.

Tomatoes require warm, well-drained, but moisture-retentive soil rich in organic matter. Tomatoes will produce light, sandy soil earlier, but the yield will be more significant in loam soil. Plan to give your plants room to grow, too, planting seedlings 30 to 48 inches apart, with rows set 48 inches apart. This will let light into the lower portions of the mature plants, improve airflow and help prevent disease. Tomatoes thrive in rich, well-draining, slightly acidic soil with a pH of 6.5 to 6.8. Germination soil temperature can range between 65-86°F (18-30°C); the optimum soil temperature for germinating seed is 86°F (30°C).

## Harvest

Early-season tomatoes require 50 to 60 days to harvest from transplanting; mid-season tomatoes require 60 to 80 days; late-season tomatoes require 80 or more days. The fruit grows and usually ripens all at once over four to six weeks.

## Uses

Can be eaten raw, used in dishes and salads.

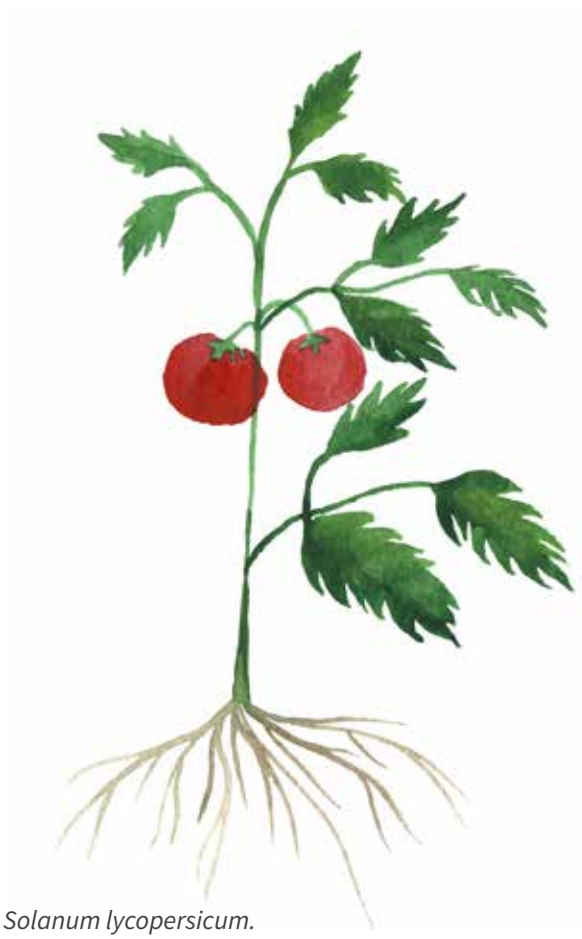
## Common advantage

- Easy to grow and remarkably productive.

## Common disadvantages

- Tomatoes planted too closely together may be more likely to develop problems, such as disease
- Too much sun may cause the soil to lose water quickly through evaporation.

# Quick facts



*Solanum lycopersicum.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Tomato.

**Common name (local language and colloquial)**
Timanti wini wini, Gbogba, Kekefo, Timatin tohouvi, Gbowlivi.

**Major variety name**
Tomato, Little tomato.

**Botanical name**
*Solanum lycopersicum.*

**Method of propagation**
Nursery and seedling.

**Agronomy & soil requirement**
Any type of rich soil except sandy, ready in 3 months, 6 weeks flowering, needs sun.

## Seed/planting morphological traits

**Stem colour:** White then green.

**Leaf colour:** Green.

**Leaf shape:** Serrated leaves.

**Leaf texture:** Hairy.

**Seed shape:** Tiny seeds.

**Seed coat colour:** Grey sand colour.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Pixabay/ Yaayaa Diallo*

# Moringa

## Traditional knowledge

Pounded to be used in food and for drinking. Can be used for medicinal purposes.

## Planting/growing guide

Choose an area with light and sandy soil, not heavy with clay or waterlogged. Dig holes one foot (30 centimetres) square and one foot deep—back-fill the holes with loose soil. Compost or manure will help the tree grow better, even though Moringa trees can grow in poor soils.

## Harvest

They can be harvested just 6-8 weeks after planting and then once they are harvested, they immediately regrow, so 6-8 weeks later, they can be harvested again. Moringa trees are also perennial so that a single plant can be harvested year after year. Moringa trees can grow up to 18 feet in less than six months, making harvesting leaves and seed pods hard. If you “top” your tree at a height you are comfortable with; the tree will develop a lush bush-like habit in the warm weather month.

## Uses

Can be consumed through capsules, powder, or whole and raw.

## Common advantage

- Easy to grow and harvest.

## Common disadvantage

- Production has remained limited due to lack of efficient cultivation practices, livestock damage, theft, seed supply, and marketing problems.

# Quick facts

*Moringa oleifera.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Moringa.

**Common name (local language and colloquial)**
Kpahoungnèrè.

**Major variety name**
Moringa.

**Botanical name**
*Moringa oleifera.*

**Method of propagation**
Nursery.

**Agronomy & soil requirement**
All types of soils.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Oval to obovate, or tear-drop shaped.

**Leaf texture:** Wrinkled.

**Seed shape:** Small round.

**Seed coat colour:** Brown.

**Flower colour:** Yellow or white.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** Rare.

**Extinct:** No.

*Photo credit: Depositphotos/ Kokhanchikov*

# Dandelion

## Traditional knowledge

Used in foods and to treat infections.

## Planting/growing guide

Dandelions can tolerate soil temperatures down to 50 degrees Fahrenheit but thrive best in a climate that's around 70 degrees Fahrenheit or more. They prefer chalks and loamy soils above pH 7.0. Can be sown outdoors four to six weeks before the last spring frost. Sow seed directly into the ground—once they've sprouted above the soil, thin them, so they're 6 to 8 inches apart.

## Harvest

The best time to harvest dandelion leaves is when the rapidly growing leaves are most tender. You can harvest leaves with garden shears or by picking them by hand. You can leave the dandelions out in the sun to dry them and prevent oxidation.

## Uses

Food source for domestic and wild species of bees. Yellow petals can be used as food for humans.

## Common advantage

- Isn't noxious—defined as causing a threat ecologically, economically or to public health.

## Common disadvantage

- Spreads easily through the seeds carried on the wind by its trademark grey fluff.

# Quick facts

*Taraxacum officinale.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Dandelion.

**Common name (local language and colloquial)**
Gniatouetoue.

**Major variety name**
Dandelion.

**Botanical name**
*Taraxacum officinale.*

**Method of propagation**
Seed dispersal.

**Agronomy & soil requirement**
All types of soils.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Long, narrow, irregularly lobed, and lance-shaped.

**Leaf texture:** Smooth.

**Seed shape:** Petite and long.

**Seed coat colour:** Black.

**Flower colour:** White.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** Yes.

**Extinct:** No.

*Photo credit: Depositphotos/ Weha*

# Wild spinach

## Traditional knowledge

Used for consumption.

## Planting/growing guide

Flourishes in moist, rich, well-drained soils.Tolerates full sun, partial shade, heat, drought, frost, and poor soils. It grows to an average height of 3 feet, although it can grow as tall as 6 feet. Lambsquarters (wild spinach) self-seeds easily, and seeds germinate as soon as the ground warms up. Sowing is done in thick rows, and seedlings are thinned to 1 foot spacing. Plants are watered as needed, and a slow-release fertilizer may be used.

## Harvest

Leaves and shoot tips may be harvested when plants reach the 5-6 leaf stage in about 30 days, encouraging branching. Lambsquarters have a good shelf life and can be cold-stored for up to 7 days.

## Uses

Highly nutritious and used as food.

## Common advantage

- Highly resistant to insect and disease, with no known serious threats.

## Common disadvantage

- Some chemicals in the plant (saponins in the seed, oxalates, nitrates and sulfates in the leaves) are mildly toxic.

# Quick facts

*Chenopodium album.*

QUICK FACTS

**Source**
Benin.

**Community name**
Sègbanou, Tori-Bossito & Dékouénou.

## Seed names and multiplications

**Common/English names**
Wild spinach.

**Common name (local language and colloquial)**
Glassema kpevi.

**Major variety name**
Wild spinach.

**Botanical name**
*Chenopodium album.*

**Method of propagation**
Savage.

**Agronomy & soil requirement**
Any type of soil.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Ovate to triangular.

**Leaf texture:** Smooth.

**Seed shape:** Long in a capsule.

**Seed coat colour:** Black.

**Flower colour:** Pink.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Shutterstock/ Zulashai*

# Aerial yam

## Traditional knowledge

It does not rot and can be kept for a more extended period and eaten, cooked, boiled, or roasted. It also has medicinal properties.

## Planting/growing guide

The seeds are planted at a depth of about 1.5 to 2 inches. Aerial yams can grow to a height of about five to 10 meters and so spacing during planting should be about ten by four feet.

## Harvest

They grow like ordinary fruits while green turning brown as they mature. They are ready to harvest six to 12 months after planting.

## Uses

They are used as food by being roasted, deep-fried, baked, and mashed. Value can also be added by slicing them into pieces and grinding them into flour, increasing their shelf life.

## Common advantage

- A fast-growing plant that can be dispersed by seed, underground tubers, and bulbils.

## Common disadvantage

- The probability of invasion of this species, especially in and near areas where it has been introduced for crop production, remains high.

# Quick facts

*Dioscorea bulbifera.*

QUICK FACTS

**Source**
Ghana.

**Community name**
Yilikpani.

## Seed names and multiplications

**Common/English names**
Aerial yam.

**Common name (local language and colloquial)**
Fruguma.

**Major variety name**
Aerial yam.

**Botanical name**
*Dioscorea bulbifera.*

**Method of propagation**
Whole small tubers.

**Agronomy & soil requirement**
Does well in a wide range of soils, including relatively infertile sandy soils.

## Seed/planting morphological traits

**Stem colour:** Light green or purple.

**Leaf colour:** Early: Dark green to light green. Maturity: Yellowish to brown.

**Leaf shape:** Sagittated long, sagittated broad or heart-shaped.

**Leaf texture:** Smooth and soft.

**Seed shape:** Nearly round.

**Seed coat colour:** Silver.

**Flower colour:** Absence of flower.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ mahata.somnath@gmail.com*

# Velvet beans

## Traditional knowledge

They are used in the treatment of snake bites and eaten after being cooked. Also used to prepare local dishes (*Tuubaani, Kooshe*). It is an excellent source of protein.

## Planting/growing guide

Plant the seeds to a depth of 0.5 to 2 inches (1-5 centimetres). Seeds are large so seeding depth can be as deep as 10 cm but not less than 3 centimetres. Velvet bean plants naturally fix nitrogen in the soil so they dont need any additional nitrogen fertilizer.

## Harvest

It is harvested when the pods are still young, usually between 90-120 days after sowing. The pods are harvested from the field and are dried in the sunlight for 4-7 days. The seeds are further dried in the shade to gain approximately 7-8% moisture content.

## Uses

Food, feed for animals and for environmental services.

## Common advantage

- Grows very fast.

## Common disadvantage

- Intolerant to waterlogging.

# Quick facts

*Mucuna pruriens.*

QUICK FACTS

**Source**
Ghana.

**Community name**
Yilikpani.

## Seed names and multiplications

**Common/English names**
Velvet beans.

**Common name (local language and colloquial)**
Langsaya.

**Major variety name**
Velvet beans.

**Botanical name**
*Mucuna pruriens.*

**Method of propagation**
Seed.

**Agronomy & soil requirement**
Clay loam, silt loam or sandy loam soils. Preferably deep, friable and alluvial soil with good drainage.

## Seed/planting morphological traits

**Stem colour:** Purple or dark brown.

**Leaf colour:** Early: Dark green or dull.
Maturity: Plae green.

**Leaf shape:** Trifoliate.

**Leaf texture:** Hairy and fleshy.

**Seed shape:** Ovoid.

**Seed coat colour:** Black/ milky/ brown/ spotted.

**Flower colour:** Purple, white or lavender.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Shutterstock/ Jenylovely*

# Bambara groundnut

## Traditional knowledge

Traditional elders revere Bambara groundnuts. It is one of the essential ingredients that improve the formation of red blood cells. When mixed with maize, millet, and rice, it is a crucial ingredient during traditional cultural practices—eaten when boiled. Used in making *tubaani* and *kosie*.

## Planting/growing guide

Bambara groundnut is propagated by seed at sowing rates ranging from 25 - 160 kg per hectare, either in rows or broadcast. It can be grown in poor sandy soil and is easier to harvest in well-drained soils. The optimum temperature for germination of Bambara groundnut is 30 - 35°C.

## Harvest

Seeds are mature 3 - 6 months after germination. At harvest time, the plant is hand-pulled from the ground, exposing the nuts which grow underground. The nuts are then removed by hand and either used fresh or dried. Harvesting small plots is often done over some time. On average, they yield about 300 - 600 kg per hectare.

## Uses

Seeds used as human food. Seeds can be milled to make flour.

## Common advantages

- Good soil fertilizer and a good rotation crop.
- It does not require any additional fertilizer.
- It is generally inter-cropped with cereals.

## Common disadvantage

- Harder to harvest in soils that drain poorly.

# Quick facts

*Vigna subterranea.*

QUICK FACTS

**Source**
Ghana.

**Community name**
Yizegu.

## Seed names and multiplications

**Common/English names**
Bambara groundnut.

**Common name (local language and colloquial)**
Sinkpulla.

**Major variety name**
Bambara groundnut.

**Botanical name**
*Vigna subterranea.*

**Method of propagation**
Seed.

**Agronomy & soil requirement**
Poor, sandy to sandy loam and well-drained soils.

## Seed/planting morphological traits

**Stem colour:** Light green or brown.

**Leaf colour:** Early: Light green, Maturity: Pale yellow.

**Leaf shape:** Round, elliptic, oval.

**Leaf texture:** Tough.

**Seed shape:** Oval or round.

**Seed coat colour:** Black/ dark brown /red/ cream/ white.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ Konovalenko*

# Onion

## Traditional knowledge

Eating raw onion scares witches away from harming man. It is used in food preparation (Stew, soups, salad) and garnishing. It also has medicinal properties.

## Planting/growing guide

Plant onion sets outdoors when the weather is warm— not cold. Onions need full sun and at least 13 to 16 hours of light daily during bulb formation. The onions are best planted when the soil is tillable. When planting onion sets, plant them between 2 and 6 inches apart. When planting larger transplants into the garden, space plants 4 to 5 inches apart in rows 12 to 18 inches apart. Set the bulbs with the point end up and don't bury them more than 1 inch under the soil. Onions mustn't be planted too deep, which can affect bulb development. If you live in an area with heavy clay or hard soil, add in aged compost (humus) to improve soil texture.

## Harvest

Pull any onions that send up flower stalks; this means that the bulbs have stopped growing. These onions will not store well but can be used in recipes within a few days. When onions start to mature, the tops (foliage) become yellow and fall over. At that point, bend the tops down or even stomp on the foliage to speed the final ripening process. Loosen the soil around the bulbs to encourage drying. Be sure to harvest mature onions by late summer, and do so in dry conditions. Onions harvested when wet do not cure well and may rot in storage. Mature onions may spoil in cool fall weather. When the tops are brown, pull the onions. Handle them carefully, as the slightest bruise can encourage rot.

## Uses

Used in salads and adds flavour to dishes.

## Common advantage

- Growing onions is simple: If you can poke a hole into the ground, you can grow an onion from a little plant.

## Common disadvantage

- All varieties of peas and beans can be detrimental to onions. The same goes for sage and asparagus.

# Quick facts

*Allium cepa.*

QUICK FACTS

**Source**
Ghana.

**Community name**
Yizegu.

## Seed names and multiplications

**Common/English names**
Onion.

**Common name (local language and colloquial)**
Alibalsa.

**Major variety name**
Onion.

**Botanical name**
*Allium cepa.*

**Method of propagation**
Seeds, sets or transplants.

**Agronomy & soil requirement**
Clay loam, silt loam or sandy loam soils. Preferably deep, friable and alluvial soil with good drainage.

## Seed/planting morphological traits

**Stem colour:** Bluish-green.

**Leaf colour:** Early: Yellowish to bluish-green. Maturity: Bluish-green.

**Leaf shape:** Fan-shaped.

**Leaf texture:** Fleshy hollow and cylindrical.

**Seed shape:** Triangular in cross-section or bulb shape.

**Seed coat colour:** Purple.

**Flower colour:** Purple.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Shutterstock/ Noypb*

# Cowpeas

## Traditional knowledge

Boiled and be eaten. Vines for animal feed. Making Kosie. It is an excellent source of plant protein. It adds Nitrogen to the soil thereby improving soil fertility.

## Planting/growing guide

Cowpeas will not germinate in cold soil; the seeds can rot in cooler soils. A minimum of 50 seeds should be sown per accession in two 4 metres rows; 40 seeds per row. The rows should be 75 centimetres apart and two seeds are planted in a hole. Holes 20cm apart and 2-3 centimetres deep. For growth control, plant two borderlines of cowpea.

## Harvest

Before the cowpeas develop pods, usually around week four, pull them up or turn under plants. However, as they are meant for vegetables, they should be harvested when young and tender. Leaf picking can start at weeks 2-3 after they are planted. The pods can be harvested green or dry. Once the pods turn yellow, they are mature enough to harvest. However, they should be monitored carefully to avoid shattering, they can be left to be tan and dry on the plants.

## Uses

It may be used when green or when dry. Cowpeas are also used as a green manure crop, for nitrogen-fixing and erosion control. Humans also value them as food; leaves and growth points can be picked and used as a vegetable dish, green seeds can be roasted like peanuts and used as a substitute for coffee. Cowpeas can be planted for hay production for animals and for sale.

It is used to cook for communal labourers (Farming, roofing, and cementing of a household compound.

## Common advantages

- Cowpeas are a multi-purpose legume.
- They improve soil fertility.
- They are drought tolerant.
- Have high seed production.
- Are highly nutritious and have high palatability.
- They are easy to establish.
- Provide high yields in a short period of time.

## Common disadvantages

- Need well-drained soil.
- They are susceptible to a number of diseases and pests.

# Quick facts

*Vigna unguiculata L. walp.*

QUICK FACTS

**Source**
Ghana.

**Community name**
Yizegu.

## Seed names and multiplications

**Common/English names**
Cowpea.

**Common name**
**(local language and colloquial)**
Tupelli.

**Major variety name**
Cowpea.

**Botanical name**
*Vigna unguiculata L. walp.*

**Method of propagation**
Seed.

**Agronomy & soil requirement**
Sandy and silty loam soils are ideal.

## Seed/planting morphological traits

**Stem colour:** Green or purple.

**Leaf colour:** Early: Green or purple. Maturity: Light green or yellowish-brown.

**Leaf shape:** Heart, oval shape.

**Leaf texture:** Tender, smooth and soft.

**Seed shape:** Kidney shaped.

**Seed coat colour:** White/ cream.

**Flower colour:** May be purple, yellow, pink or blue.

## Seed/planting material availability status

**Abundant:** Dependent on the area it is grown in.

**Endangered:** Rare.

**Extinct:** No.

*Photo credit: Pixabay/ Peggychoucair*

# Pepper

## Traditional knowledge

They are traditionally used to welcome a new soothsayer into the system by putting the pepper powder into the eyes after performing the necessary rituals. Fight flu or cold—relieve joint pain. Promote a healthy heart. It adds taste and flavour to soup.

## Planting/growing guide

Plant peppers in a bed that receives full sun. Provide sandy loam soil that drains well and contains plenty of organic matter. Depending on the size of the pepper varieties planted, spacing should be 12-18 inches apart. Peppers can double as ornamentals, so tuck some into flowerbeds and borders. Add a well-balanced fertilizer such as 5-10-5 or a favourite organic blend and it works well. A nitrogen-rich fertilizer should be avoided. It will promote foliage growth but not pepper production.

## Harvest

Most sweet peppers mature in 60-90 days. They will feel firm and crisp when ready and should not be pulled from the plant but cut with a sharp knife or pruning shears; hot peppers can take up to 150 days.

Hot peppers should ripen fully on the vine to attain their bright red colour and full flavour, then hang to dry. However, keep in mind that the number of days to maturity stated on the seed packet refers to the days after transplanting until the plant produces a full-sized fruit. If left on the plant, peppers turn ripe red and the flesh is sweeter and contains more vitamins.

## Uses

Universal table condiment used to flavour all types of dishes.

## Common advantage

- Growing peppers isn't difficult, but the temperature is an important factor.

## Common disadvantage

- Strictly warm-weather plants.

# Quick facts

*Capsicum annuum.*

QUICK FACTS

**Source**
Ghana.

**Community name**
Langa.

## Seed names and multiplications

**Common/English names**
Pepper.

**Common name (local language and colloquial)**
Nanzuwa.

**Major variety name**
Hot pepper.

**Botanical name**
*Capsicum annuum.*

**Method of propagation**
Seeds (Seeds are nursed and are transplanted to the permanent field).

**Agronomy & soil requirement**
Ideally, loamy soils with pH of 6.5 - 7.5.

## Seed/planting morphological traits

**Stem colour:** Green, purple or orange.

**Leaf colour:** Early: Pale green, Maturity: Dark green.

**Leaf shape:** Fuzzy.

**Leaf texture:** Smooth and soft.

**Seed shape:** Wrinkled shape.

**Seed coat colour:** Dark yellow.

**Flower colour:** White.

## Seed/planting material availability status

**Abundant:** Yes.

**Endangered:** No.

**Extinct:** No.

*Photo credit: Depositphotos/ JohnSarkar*

# Jute

## Traditional knowledge

An important vegetable fibre used in a wide range of agricultural and industrial commodities.

## Planting/growing guide

Jute can be raised on all kinds of soils, from clay to sandy loam, but loamy alluvial is best suited. Jute is propagated by seed. The seed typically requires scarification to begin germination, or seeds may be soaked in boiling water for ten seconds, then planted into raised beds 1 metre wide. If the plant is to be harvested by uprooting, seeds should be planted with a 30-50 centimetres row spacing. Keep the soil moist. Expect seeds to germinate in two to three days, producing small shoots that grow rapidly.

## Harvest

About four months after planting, harvesting begins. The plants are usually harvested after they flower before they go to seed. Jute plants are harvested at the flowering stage. The stems are cut near the ground, tied into bundles and soaked in water for a few days. This method of soaking is called retting. It softens the tissues and permits the fibres to be separated.

## Uses

To make sacks and cloth for wrapping bales of cotton geo-textiles pulp and paper household products non-woven textiles.

## Common advantages

- 100% bio-degradable recyclable and thus environment friendly.
- Natural fibre with golden & silky shine.
- The second most important and widely cultivated vegetable fibre after cotton.
- High tensile strength with low extensibility.

## Common disadvantage

- Laterite and gravel soils are not suitable for this crop.

# Quick facts

*Corchorus olitorius.*

QUICK FACTS

**Source**
Ghana.

**Community name**
Tindang.

## Seed names and multiplications

**Common/English names**
Jute.

**Common name (local language and colloquial)**
Nalta jute.

**Major variety name**
Jute.

**Botanical name**
*Corchorus olitorius.*

**Method of propagation**
Seed.

**Agronomy & soil requirement**
Acidic soil pH is required for the best growth, ranging from 4.8–5.8.

## Seed/planting morphological traits

**Stem colour:** Green.

**Leaf colour:** Green.

**Leaf shape:** Wide, pointed at the tip and serrated.

**Leaf texture:** Young: smooth leaves,
Old: fibrous and woody.

**Seed shape:** Round.

**Seed coat colour:** Greyish brown.

**Flower colour:** Yellow.

## Seed/planting material availability status

**Abundant:** No.

**Endangered:** Rare.

**Extinct:** No.

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Section 9, Mortgage House N0. 60
off OAU Rd, Thika, Kenya
Tel +254 (0)20 26 75 043
+254 (0) 722 923 947
Fax +254 67 22 338
abnsecretariat@africanbiodiversity.org
www.africanbiodiversity.org