

SPIDER PLANT FARMING GUIDE



About Spider plant

Spider plant is one of the most important traditional vegetables in Kenya and is particularly popular in Western Kenya, the Rift Valley region and the coastal area. People used to find Spider plants near cattle places and old homes. Nowadays, we grow it more in our farms, but demand is bigger than what we have. The crop can grow to produce more leaves with use of irrigation. The leaves grow on long stalks, usually divided into 3, 5 and 7 leaflets. Flowers are white or pink, growing on a long, much-branched inflorescence. The fruit is a long-stalked capsule splitting to release small rough grayish black seeds.

Local names

Mgagani (Swahili), Thageti (Kikuyu), Tsisaka (Luhya), Alot-dek or Akeyo (Luo), Saget (Kalenjin), Chinsaga (Kisii), Mwianzo (Kamba), Jjobyu (Luganda), Yobyu (Lusoga)

How Spider Plant is Used:

The soft leaves, young shoots, and sometimes the flowers are eaten. They are cooked in soup, stew, or as a side dish.

It's even cooked with milk or other veggies like cowpea leaves, amaranth, or nightshades.

In some places, the leaves are just boiled and then drained of water. In many countries, they add peanut butter, milk, or cream to make it taste even better.

Other Benefits

- The leaves, seeds and roots are used medicinally.
- Spider Plant seeds thrown in water can kill fish, which then float to the surface.
- The glands on the stems and leaves have insect repellent properties. Cabbages and related crops intercropped with spider plants suffer less from diamondback moth larvae.
- Similarly, French beans intercropped with spider plant, the beans are less affected by flower thrips and are therefore of better quality for export.

- The seeds are used to feed birds.
- It is also a source of edible oil and livestock feed.
- Its' oil is an ingredient in the manufacture of detergents.
- It can be produced for sale and has the potential to generate income for rural communities.
- It requires minimal management.
- Beneficial to Pregnant and Lactating Women(Spider Plant's Special Powers).In some places, it helps mothers have babies faster and with less pain. After having a baby, mothers eat it to get strong again and make more milk. It also brings back the blood they lost, 'cause it has lots of iron.

CLIMATIC AND SOIL REQUIREMENTS

- The crop grows well during the warm season under irrigation.
- Spider plants do not do well in cold areas and when temperatures drop below 15 degrees Celsius, your crops will not do well.
- It needs direct sunlight and does not do well in the shade. Long dry times during the early growth stage make it flower early, meaning you will get less harvest.
- It can handle a bit of dryness (drought), but too little water in the soil makes it grow old fast. You will harvest very few Spider plant leaves, making less money because of the dry conditions or lack of water.
- Spider plants can grow on different types of soil, mostly on sandy to clay loam. The soils should be deep and allow water to flow easily, with pH 5.5-7.0.
- It does well in soils with high organic matter and enough mineral reserves.

CROP MANAGEMENT

Land preparation

- Before planting Spider plants, make the land soft and smooth by digging using a jembe or ox plough or tractor . This helps tiny seeds and delicate roots grow well.

Manures and Fertilizers

- The soil should have enough organic materials which adds nutrients to the soil and make the soil layout better. This way water will flow easily through the soil layers and be able to hold more water for the plant. Well composted cattle manure is applied at 3 kg per square meter when broadcasting, or 1 kg per meter when sowing in rows. When planting, Put manure in the planting hole or along the planting rows. This will provide more food for your crops and they will grow better.
- If poultry manure is used, use only half of the amount as when using cow manure.
- Compound fertilizer 10-10-20 is then applied in the row.
- Fertilizers and manure should be applied on infertile soils to improve their productivity.
- Before flowering, top dress with manure and CAN fertilizer. This will help delay the onset of flowering ensuring a longer harvesting period and higher yields.

Seed rate and Sowing

- Plant the crop straight into the soil. No need to transplant. Just put the seeds in the ground. Easy!
- Plant spider plant seeds when the rain starts. This way the plants will have enough water while they grow. Good for a healthy crop!
- The seed is mixed with sand or dry soil in the ratio of one to ten (1:10) for even distribution while sowing. Mix seeds with sand or dry soil. When planting, mix 1 kg of seeds with 10 kg of dry sand. This makes sure they spread out evenly.
- The seed rate is about 2 kg of seed/soil mixture per acre. The seed should have lasted at least 6 months after drying to ensure higher germination percentage. To plant on one acre, use about 2 kg of mixed seeds and sand. Make sure the seeds have been dried for six months before planting. This helps more seeds grow into plants.
- Planting the seeds directly in rows. This way you will :
 - Have optimum densities which are easier to establish and the crop looks neat. It's easier to make the right plant spacing, and it looks tidy.
 - It's much easier to remove weeds, topdress the crops, control pests and diseases and even during harvesting .
 - The method is less wasteful in seeds and manure. Less seeds and manure is wasted during planting .
 - Use a stick to make shallow furrows (lines), 45 cm apart from one furrow to the next.
 - Put the seed mix on these lines evenly.
 - Gently cover with a rake or broom.
 - Don't plant too deep; it stops seeds from growing.
 - Keep the soil moist for seeds to sprout the same. Plant when the soil is wet or it has rained.

Thinning

- Seedlings emerge after 4-8 days.
- Thinning is done 3 weeks later starting with the tall plants.
- The uprooted plants form the first harvest and can be consumed, sold or transplanted (but transplanting is only possible at a very early stage because young seedlings have a tap root system with very few lateral roots).
- Thinning is continued over the early growth period until a spacing of 15cm between the plants is attained.
- After 4-8 days, little plants will pop up from the soil. 3 weeks later, start removing the tall ones first. These can be your first harvest. Eat, sell, or transplant them if young and healthy. Later, keep thinning until plants are 15 cm apart. This gives them space to grow well.

Weeding

- The crop does not form a dense leaf cover so it should be kept free from weeds especially during the first six weeks of growth.

DISEASES AND PESTS



Aphids



African bollworm



Flea beetle

Aphids

Outbreak of aphids on the spider plant is common during drier weather spells when they form masses of soft, green clusters on the underside of leaves. Infected leaves become yellowish, and rough and shoot becomes dwarfed.

Control:

- Encourage conservation of natural enemies (ladybird, parasitic wasps)
- Use mulch on soil to disorientate the pest
- Botanical Indigenous Technical Knowledge (ITK) as chillies and Mexican marigold
- Spray AMPLIGO with severe infestation observing recommended PHI (preharvest interval)
- Drench the field with MIDA.

Flea beetle

Control:

- Spray with garlic
- Treat initial patches with pyrethroid pesticide.

African bollworm

Among the spider plant pests, this pest is a major threat on sagets, feeding on the leaves, flowers and also the pods/fruits. Attacked leaves are rendered unattractive at the market. When flowers are attacked the pest causes flower abortion and even on stems promote decaying as secondary infection.

Control:

- Scout for larva before it bores into fruits where it destroys the seeds.
- Tilling early to expose pupae to be killed by hand, sunrays and natural enemies.
- Hand picking larvae and pupae.
- Destroy weeds that act as alternative hosts.
- Spray neem or pyrethrum based pesticides or Bt products immediately larvae is sighted [Achook, Pyerin}

Birds

Control:

- Scaring
- Hanging tapes in the farm

Plant Diseases:

Damping off

Control:

- Seedbed planted with the african leafy vegetables should not be sited on field previously planted with african leafy vegetables
- Solarise the soil using clear polythene papers.
- Thin the seedlings to allow free air circulation.
- Practice crop rotation.
- Avoid excessive watering during irrigation
- Sow seeds thinly.
- Drench the field with RIDOMIL from Syngenta.
- Drench field with copper oxychloride

Grey mold

Control:

- Avoid initial damage by bollworm which creates avenues for pathogens.

HARVESTING AND YIELD

- The thinnings uprooted at three weeks after planting at a height of 15 cm make the first harvest.
- When adequate space has been created between plants, the top shoots from the remaining plants are picked, allowing new side shoots to develop.
- The shoots are harvested when they are about 25 cm long. This process of ratoon cropping can be repeated several times.
- Cumulative leaf yields of up to 30 t/ha per season may be attained.
- Weekly leaf yields increase up to 7th week of growth and then start to decline. By the 10th week yields have declined by about 90% and the harvest is stopped. The leaf bitterness increases with age.
- The Spider plant fruit or “pods” attain a yellow colour when mature. The pods must be harvested at this stage to avoid shattering or damage by birds.
- To extract seed, the pods or the inflorescences are picked, dried by spreading on polythene sheets or gunny bags, threshed and winnowed and the seed stored in air-tight containers.
- A healthy crop in which two or three pickings if shoots have taken place may yield up to 500 kg of seed per ha.

- The seeds can remain dormant for 2-3 months but dormancy reduces greatly by the sixth month. Seeds can remain viable for up to three years.

First harvest: Uproot thinnings 3 weeks after planting, 15 cm high. Then, pick top shoots from others when they're 25 cm long. This way, side shoots grow. Repeat this for more harvests. You can get up to 30 tons of leaves per season.

Leaves grow well till week 7, then slow down. By week 10, it's 90% less. Stop harvesting then. Older leaves taste more bitter.

For the fruit (pods), pick when yellow. This keeps them safe from breaking or birds. To get seeds, pick pods, dry, thresh, and keep in sealed containers. A good crop can give 500 kg of seeds per ha. Seeds can wait 2-3 months to sprout, and can last 3 years.

Post harvest handling

- Hygiene at harvesting must be observed (e.g. washing of hands before harvesting the vegetables).
- When not uprooting whole plants, leaves should be picked by cutting at the leaf stalk and not at the stem joint to avoid injuring the plant. When not pulling out whole plants, cut leaves at the stalk, not at the stem joint. This way, the plant stays healthy.
- At the market, the vegetables should be spread on a wetted gunny bag or cotton cloth under shade, or tied in bunches which are then placed in a basin or bucket with water to keep them fresh. At the market, put veggies on a damp cloth in the shade, or tie them in bunches and put them in water to stay fresh. This keeps them nice for buyers.
- The leaves can be preserved by blanching and drying under shade.
- The leaves to be preserved should be separated from the stems then blanched (placed in water at just below boiling point (80-85 °C) for 2-3 minutes), then placed on a gunny bag or cotton cloth on a raised platform under shade for 2-3 days depending on environmental conditions (temperature, humidity, wind).
- The dried vegetables are then stored in air-tight and water-proof containers such as plastic tins, polythene bags, and can keep for up to six months.
- The dried vegetables are soaked in water for 2-3 minutes to reconstitute them before cooking.

Harvest with care – wash hands first. Cut leaves, not stems, to avoid hurting the plant. At the market, keep veggies wet or in water to stay fresh. To save leaves, blanch and dry in the shade. Separate leaves, blanch (dip in hot water), then dry under shade for 2-3 days. Keep dried veggies in sealed plastic or bags. They last 6 months. Soak them before cooking.