

Passion Fruit Farming

Introduction

Passion fruit is amongst the Kenya's top export fruits and a popular fruit in the domestic market. The fruit is a vigorous perennial climbing plant and can grow 15-20 feet per year. The crop is very rich in Vitamins in high demand by processors for making juice blends. Although the fruit is labour intensive and susceptible to pests and diseases, it is one of good venture which gives high returns to farmers under good management.



Varieties

The there are two major Passion fruit species widely grown in Kenya:

Yellow passion fruit - Does well at altitudes of 0-800 m and is used mainly for the fresh fruit market. It can also be used as a rootstock for grafting of the purple variety

Purple passion fruit - Grows best in higher altitudes, cooler areas above 1000 m, ranging 1200-2000 m.



Yellow passion variety



Purple passion variety

Others include Sweet passion, Banana passion and Giant passion. They prefer coolers parts with higher altitudes above 1500 m.



Sweet Passion



Banana passion



Giant passion

Ecological requirements

The following are the best conditions for the establishment of passion fruit:

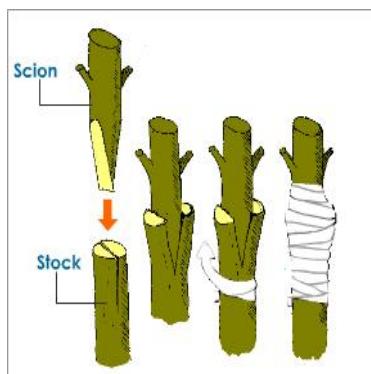
- Heavy well drained and fertile sandy loams soils with a pH of 5.5 - 7. If the soil is too acidic, apply agricultural lime. Good drainage and aeration are essential to minimise the incidence of diseases.
- A well distributed rainfall 900-2000mm but when rainfall is low supplement with irrigation.
- Optimum temperatures range of between 18-25°C for the purple variety and between 25-30°C. for the yellow variety.

Propagation

Passion fruit is generally propagated from seed, cuttings and grafted.

When propagating seeds: the seeds should be rubbed clean of pulp and dried in the shade then you sow in pots with soil or a ready nursery. Germination takes place after 2-4 weeks. Raise seedlings in polythene bags ready for transplanting after 2 months.

You can also graft yellow passion variety which is a good rootstock variety with purple passion. The seedlings will be ready for transplanting after 3-4 months and with a height of 15-25 cm.



Graft a scion and the root stock. For seedlings, transplant after 3-4 months when 15-25cm tall

Planting

1. Select a site with a good shelter cover. The vines require sheltered locations without extreme temperatures.
2. Plough land deeply 2- 3 months before planting
3. Dig planting holes 2 ft by 2ft by 2ft at least 3 weeks before transplanting. Separate topsoil and the subsoil. The recommended spacing for holes is 2 m between rows and 3 m within rows.
4. Add 1-2 debes of manure and 2 handfuls of planting fertiliser e.g DAP/TSP to each hole and mix well.
5. Plant a healthy seedling in each hole and firm well with soil
6. Water well and mulch

Field management practices

1. Pruning - Start to prune plants as early as after they are transplanted so that more branches can sprout to produce more fruits

Weed carefully to avoid injury to the plant

Mulch along the rows or around the base of the plants to kill weeds and protects the roots

2. Training - Train vines to get them on the wires of the trellis as quickly as possible.

Erect stakes on the ground beside each plant and attach them to the wire to support. When vines start to grow, prune to leave two strong shoots as leaders. Tie loosely on sticks and twine it in position.



Erect stakes close to plants and twine stems in position

3. Trellising - As the plant is growing, build a trellis using stakes. Support stems with sticks placed at a spacing of ten meters from each other to allow the climber plant tree spread, and for the fruits not to touch the ground. When the vines reach the wire, train in opposite directions along it. Allow emerging laterals stems to hang down freely.



Trellis to support stems and make harvesting easy

4. Fertilization - 4 weeks after planting, apply a handful of CAN per plant. Repeat every 3-4 weeks until the tips of the stem meet with the wire. Also apply manure every 3 months for optimum yields.

5. Pruning - Remove dead stems and unproductive shoots. Also, cut off secondary shoots reaching the ground. If laterals do not emerge in time, they can be forced to leaf out by pinching off the shoot tip. After every pruning, disinfect with detergents to avoid spread of viral diseases.

6. Intercropping - **Intercrop passion fruit with** vegetables especially vegetables like beans, cabbages and tomatoes. You can also inter-crop with crops like potatoes, beetroots, carrots, spinach, strawberries, eggplants, peppers and onions. This will provide good compost and help control erosion.

Do not intercrop with Cucurbits family e.g cucumbers, pumpkin, and squashes. They share same pest and diseases. Also, do not intercrop with maize, cowpea, sorghum and Okra.

Pests and diseases

Pests

Red spider mite - Common during hot dry weather and cause scarring and discolouration of maturing fruits. Control with insecticides e.g Vapcomic



Leafminer - It causes stippling with white marks on leaves and under heavy attack, leaves may drop off.



Aphids - It sucks plant sap causing curling. It is also a vector of woodiness virus.



Diseases

Woodiness - It is a viral disease carried by Aphids. It causes fruit to have a very hard rind and small pulp cavity and cause fruits to burst. To control, use grafted varieties, rotate your field and spray with fungicides e.g Score, Wetsulf.



Leaf spot - It is a fungi which causes brown spots on leaves. Treat with fungicides e.g Score



Fusarium wilt - It causes yellowing of leaves with the collar region of affected plant at soil level turning brown and vertically cracks and vines wilt



Brown spot - The symptoms of brown spot are appear tiny spots, which enlarge into sunken circular spots with brownish centers. Eventually the rind around the diseased area becomes wrinkled and the fruits shrivel.



Harvesting

Passion fruits are ready for harvesting 6 months after planting. This is about 75 days after flowering. This is when the fruits begin changing colour from green to red or yellow depending with the type. Harvest by cutting or clipping the fruit off the vine to leave a small stem using a sharp secateur. Pack the fruit in mesh sacks to ensure adequate ventilation.