

Sweet Pepper

Open Field Production

Crop group: Solanaceae (sweet pepper, tomato, eggplant)

Crop Rotation

Follow this crop with cucurbits, leafy vegetables, brassicas or sweet corn. Avoid following with sweet pepper, tomato, eggplant.

Climate & Soil

Sweet peppers can tolerate shade conditions of up to 45% and grow at wide range of altitudes with rainfall 600–1250mm. They grow best on well-drained loamy soils with a pH 5.5–6.8. Sweet pepper prefers a warm climate with temperature ranging 18–35 °C.

Land preparation

Clear the area and remove weeds. Measure the desired planting area and plough.

Layout 1m-wide beds with 0.5m-wide canals in between. Raise the beds 20-30 cm high.

Level the bed with a rake, ready for plastic mulching.

Plastic mulching installation:

Unroll the plastic mulch over the plot (make sure that silver color is on top while black is underneath). Clip the plastic mulch on both sides and ends with a bamboo staple every 15–20cm apart/staple. Alternatively, clip the plastic mulch on both sides and ends using bamboo sticks (1.5cm between for 5–10m lengths) and clip with small twigs from hardy shrubs or tree branches every 50cm apart per twig.

To stop hot air accumulating inside the plastic mulch cover, stretch and fit the plastic over the bed. Make a series of openings in the plastic every 50cm in a zigzag pattern using a hot puncher. (A can containing a few hot charcoal beads makes a handy hot puncher).

Organic mulching (optional):

Instead of plastic mulch, you can apply organic mulch about 2.5cm thick on the surface of the soil to minimize evaporation of moisture in the soil and suppress the growth of weeds. Hagonoy weed (*Chromolaena odorata*)



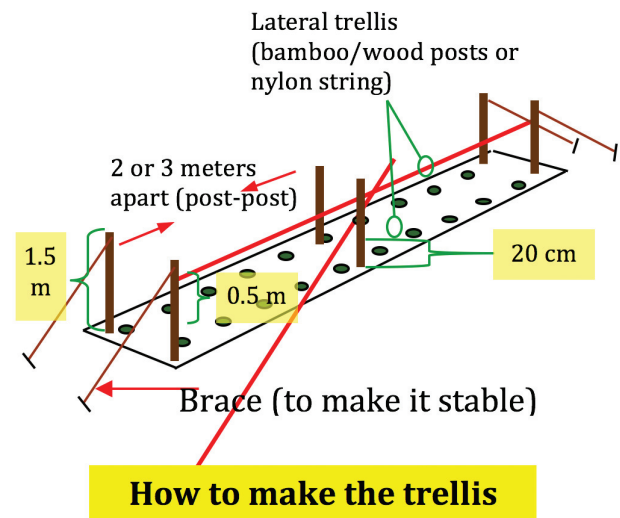
Plastic mulch ready to cut planting holes.

was found in trials to be the best mulching material, and may have some disease suppressive effect. Rice straw, rice hull, and kakawate leaves can also be used.

Seedling Management

Ensure seedlings are healthy, disease- and insect-free before transplanting, and always handle seedlings carefully to minimize injury to the roots. Under good conditions, seedlings will be ready to transplant after 4 weeks, and should have 4–5 true leaves.

A drinking straw wrapped around the stem a day before transplanting, when the seedlings are still on the trays, can help reduce damage caused by crickets or other chewing insects.



Transplanting

Transplant late in the afternoon, or morning – if it's cloudy. Gently press the soil around the plant base to avoid injury of the seedlings, seal the hole with soil.

Water immediately to establish good root-soil contact. Drench around the plants with fungicide as needed.

Trellising

1. Trellis the plants two weeks after transplanting.
2. Construct the trellis using bamboo ipil-ipil poles or stakes on each side of the bed, 2–3m apart and 1.5m high.
3. Attach wires to the bamboo post horizontally at a height of 0.5m and tie stems to the wire using twine or blue string.
4. When the plants are fruiting, maintain all branches in upright position to avoid overlapping that causes insect pests to hide. Tie all droopy branches especially those with many fruits to avoid breaking.

Pruning

Remove all lateral branches below the “V” or the axil where first flower comes out for these branches are not so productive. Re-prune all buds that come out in this portion. To avoid the use of pruning tools that might cause disease transfer, prune regularly when the branches are still young and tender using hand pinch. Regular pruning on newly emerged buds must be done twice a week.

Weed Control

- Cultivate the soil before planting to reduce weeds or stale seedbed
- Practice mulching to control or minimise the growth of weeds
- During the growth of the crop use a bolo to manually remove weeds
- Spray canals and between beds with contact/systemic herbicide as necessary

Harvesting


Harvest fruits intended for market preferences at 3–4 day intervals. Fruit are usually ready to harvest 55–65 days after transplanting (DAT) when they are mature green to 50% green/breaker stage or depending on buyers' preference.

Immature or over-mature fruit deteriorate fast therefore it is important to pick at optimum harvest maturity. Harvest early in the morning while the temperature is low to minimize field heat load. Place the harvested fruit immediately under shade, avoid sun exposure.

Method of Harvesting: For harvesting and trimming use sharp, clean tools.

Collect infected or insect infested fruits and dispose of them properly by bagging or burying to minimize pest or disease build-up.

Fertilizer, irrigation, pest and disease management

Sweet pepper growth stages					
	Pre plant	Transplant / Establishment	Vegetative	Flowering/ fruit development	Maturity
					
Fertilizer	Before planting apply fertilizer into each planting hole and mix in with soil. During plant growth, apply fertilizer to each plant an inch away from the base of the plant. Ensure no fertilizer touches the leaf of the plant to avoid leaf burning. Additional application can be applied 2 weeks apart during fruit development and harvest. Use the following rates per plant.				
Timing	At transplanting	1 week after transplanting	2-4 weeks after transplanting	3 weeks after transplanting	Additional applications
Rate	10g complete fertilizer (16-16-16) 1 handful of organic fertilizer per plant.	150g of calcium nitrate (CaNO ₃) dissolved in 8L water- 3, 6 and 9 days after transplanting. Rate = per m ² (check)	10g ammonium phosphate (16-20-0) per whole (week 2 and 4) complete fertilizer (16-16-16) per plant (week 3).	1 tablespoon (10g) of muriate potash (0-0-60) weeks 5,6,8 and 9. 1 tablespoon (10g) complete (16-16-16) weeks 7 and 10. Rates are per plant.	Repeat application further if needed.
Irrigation	Lay out trickle irrigation drip tube along the beds. Use one tube along each planting row. The spacing of drippers in the tube should be about 25cm or closer. The best strategy is to fully wet the soil profile and encourage roots to grow out into the moist soil. Sweet pepper does not tolerate drought conditions but neither does it like too much water; drain fields quickly after heavy rain. To prevent rapid spread of fungal diseases, water only in the morning, not in the afternoon.				
		Water immediately after transplanting until soil profile is fully wet.	Water every 3–4 days for 4–6 hours or until soil is fully wet.	Water every 3–4 days for 4–6 hours or until soil is fully wet.	
Insect Pests	Monitor the crop regularly for pest infestations, look in growing points and on underside of leaves. Approved insecticide should be used as indicated on product labels. Where possible squash eggs and young larvae, prune leaf miner infested leaves and remove caterpillar infested fruit. Bury or bag pruned leaves and removed fruit. Avoid moving from a mite-infested crop into an un-infested crop.				
		Must commence plant protection immediately after transplanting out.	Broadmite, thrips, aphids, whitefly, red spider mite.	Cutworm, fruit worm.	Fruit worm, aphids, white fly leaf miner, fruit fly.
Diseases	Monitor the crop regularly for early disease symptoms. Rogue infected plants showing systemic symptoms and carefully prune away infected parts for localized diseases. Disinfect pruning tools after use on every plant. Bacterial wilt and blight can be transmitted via pruning tools. Preferably carry a container, such as a plastic bag, for pruned plant materials during pruning and immediately place the pruned diseased or infested plant parts inside the bag to minimize dispersal of inoculum to healthy plants. Approved fungicides should be used as indicated on product labels.				
		Damping off.	Leaf and shoot blight, bacterial wilt and blight.	Leaf spots, powdery mildews and blights .	Tomato mosaic virus (TMV), late blight, bacterial wilt, bacterial spot, early blight, powdery mildew, leaf mold and blossom end rot.

Postharvest Handling

Once harvested, the fruits are much more susceptible to deterioration than while they are attached to the plant

1. **Harvest** in the cooler part of the day – early morning or late afternoon.
2. **Place** the harvested fruit out of the sun and in as cool a place as possible.
3. **Remove** and discard any fruit which is deformed or insect damaged.
4. **Grade** the fruit into color and size grades. Keep a premium grade fruit which is the correct size for your market. Grade into green, breaker and colored fruit, and pack separately. Show grade and colour standards. Put the remaining fruit into a second grade category and send that separately from the first grade. This will maximize the price you get for the first grade fruit.
5. **Pack** the fruit carefully in cartons if possible, in a way that will minimize damage to the fruit in transit to the market. Do not sit or stand on top of vegetables.
6. **Deliver** the fruit to market as soon as possible after harvesting. Transport at night or in early morning, if possible. Storage reduces shelf life and quality.
7. **Monitor:** Find out how your fruit arrived at the market and aim to continuously improve the quality of your arriving at the market.

Follow up in the field

The finished crop should immediately be removed and destroyed, and the ground plowed to prevent pest and disease populations spreading to other crops. This is extremely important!



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