



# Avocado Orchard

Establishment and Management

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## Planting materials

It is important to plant well grafted seedlings because they mature quickly (3 years) compared to non-grafted ones that take more than 6 years to mature.



*Grafted Avocado seedling*

## Quality of Seedlings

- ◆ Must be grafted
- ◆ Have at least six dark green leaves.
- ◆ Free from pests and disease

## Land preparation

- ◆ Fertile, well-aerated, sandy-loam and well drained soils preferred.
- ◆ Removal of shrubs, tree stumps and big stones.
- ◆ Deep Ploughing (30-40) cm and harrowing or use herbicide to clear perennial weeds
- ◆ Plant an annual crop a year before establishing the orchard.
- ◆ Wind breaks to minimize breakage.

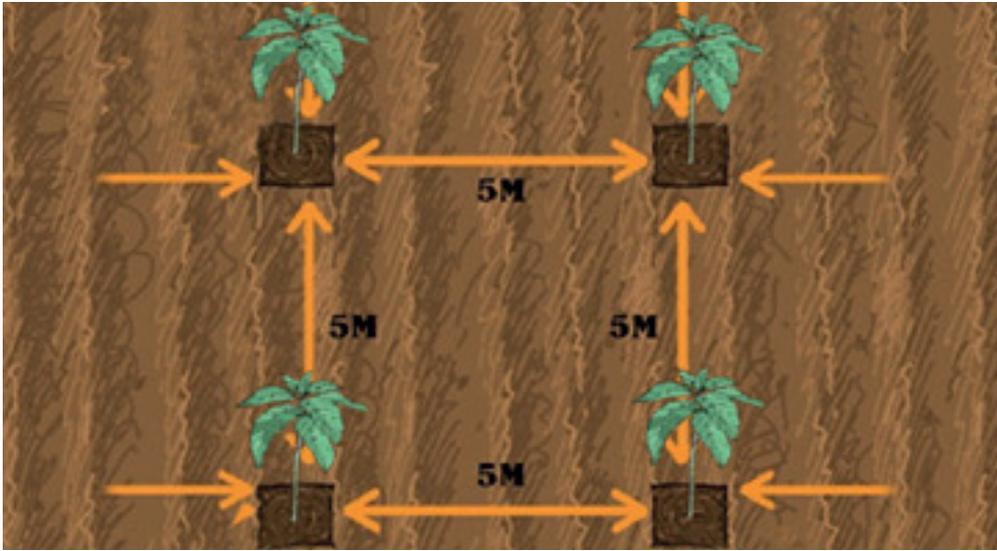


## Orchard layout

The most common orchard layouts are; Square, Rectangular, quincunx and Contour.

### (i) Square Planting

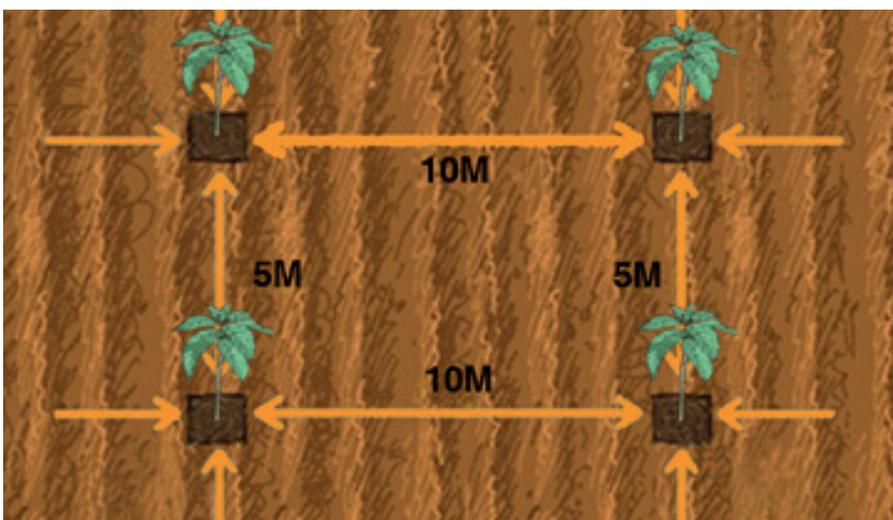
High plant population.



*Square layout*

### (ii) Rectangular Planting

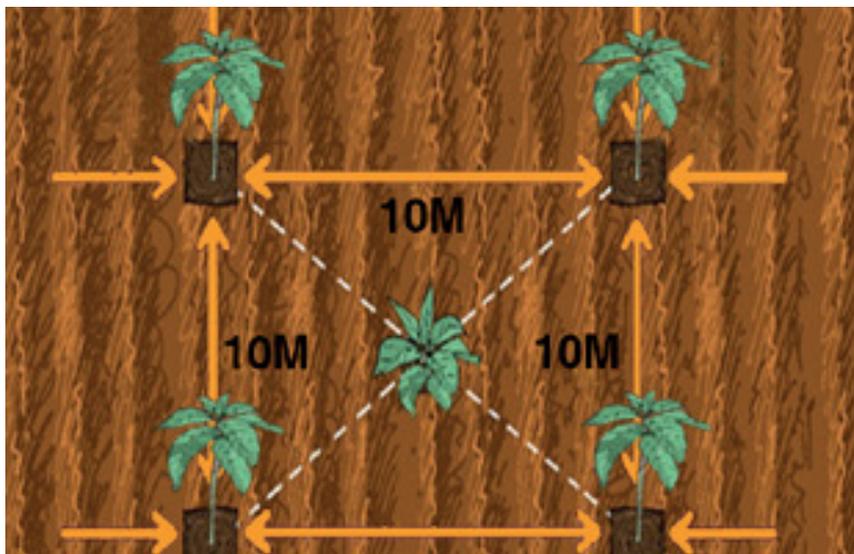
it is easy to layout and mechanize.



*Rectangular layout*

### **(iii) Quincunx (Five Spot)**

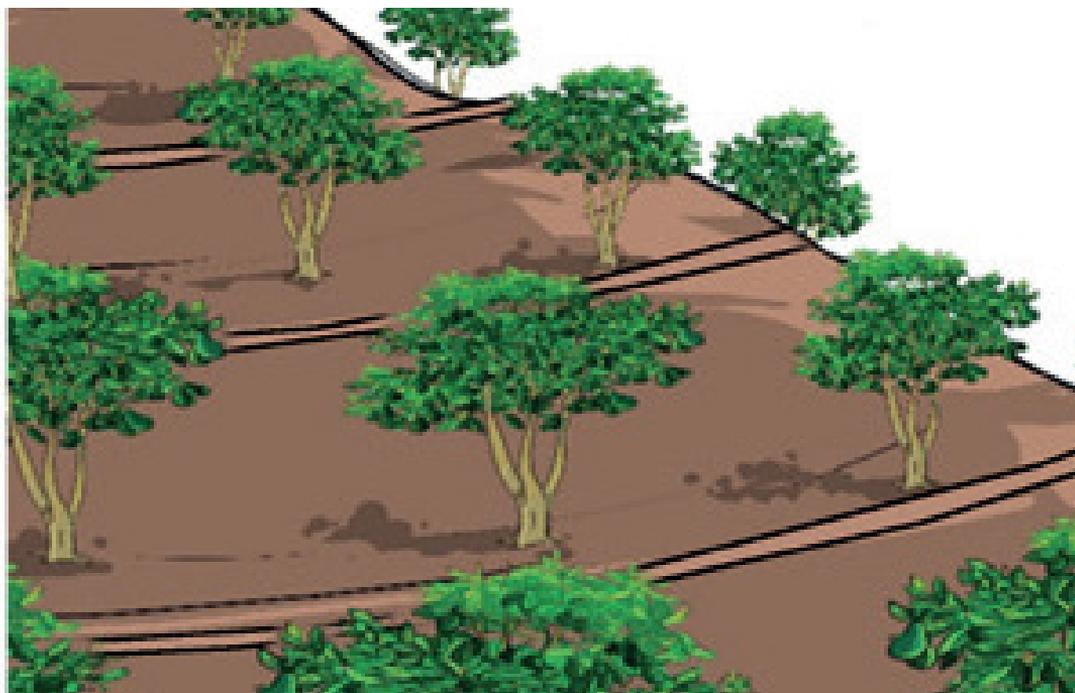
The middle seedling can be removed after a few years.



*Quincunx layout*

### **(iv) Contour system**

Suitable for Hills.



*Contour layout*

## Spacing

The most common spacing variations are; 5x5m, 7x7m and 10x10m spacing.

Table: Recommended spacing

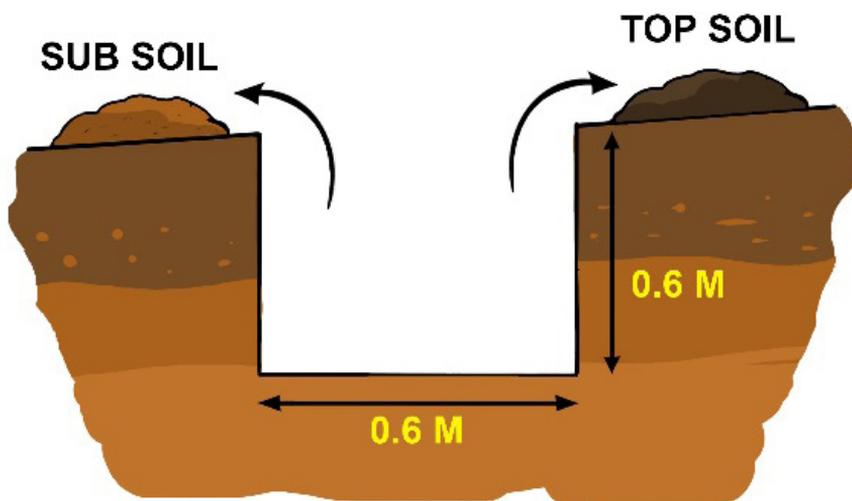
Spacing in meters	*Number of seedlings in an acre
5x5	160
7x7	83
10x10	40

\*It is advisable to buy 10% more seedlings for gap filling.

## Pit preparations

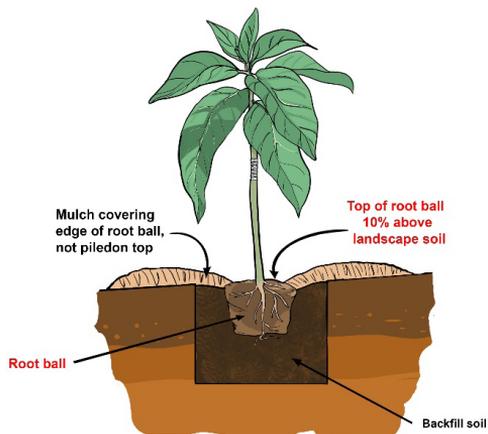
The most common spacing variations are; 5x5m, 7x7m and 10x10m spacing.

- ◇ Dig pits of 2feet (0.6 M) long by 2 feet wide and 2 feet deep.
- ◇ Mix the top (black) soil with well decomposed manure at 1:1 ratio.
- ◇ Fill the pit with soil-manure mixture.
- ◇ For better results, allow pit to rest for at least 2-weeks before planting.



*A well dug pit*

## Planting



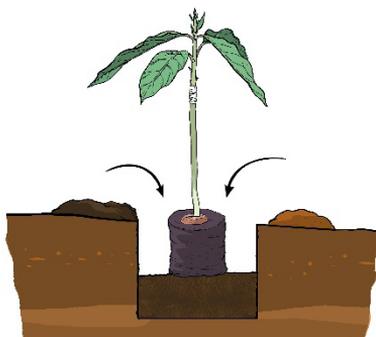
*Well planted seedling*

- i. Remove the seedling from the potting bag before transplanting.



*Removal of the pot.*

- ii. Place the seedling in the middle of the hole on top of the soil-manure mixture.



*Seedling placement.*

- iii. Add the rest of the mixture up to the collar of the seedling and compress the soil around with hands.



*Planting of seedling*

**Note:** Do not plant the seedling deeper than the level at which it was while in the polythene bag. After planting, water the seedlings immediately (10-15 liters) daily until the first shoots appear.

## Staking

Stake the seedling immediately after planting to protect the graft union.



*Staked Seedlings*

## Detaping (removing grafting tape)

Remove the tape with a sharp razor a month after planting if present

## Fencing

The young orchard should be protected against livestock, wild animals and trespassers.

## ORCHARD MANAGEMENT

### Soil and water management

- ◇ Irrigate in dry spells especially when seedlings are still young and after fruit set.
- ◇ Mulch to conserve water and control weeds.
- ◇ Use trenches on slopes to reduce soil erosion



*Mulching seedlings*

### Weed control

- ◇ Hand weeding
- ◇ Slashing and spot weeding
- ◇ Intercropping or mulching
- ◇ Use herbicides

## Intercropping

- ◇ Before the canopies are fully formed, intercrop with over crops like legumes and vegetables
- ◇ This can also help to make Nitrogen available in the soil.

## Herbicides

Herbicides can be used where the labor cost is expensive. Systemic herbicides are preferred. Care should be taken to avoid destroying the avocado trees.

## Pruning

Pruning is important to encourage branching. It also keeps allow sunlight into the canopy to encourage flowering and fruit set.

**Note:** Remove all branches originating from below the graft union, without fail.

## Soil fertility management

- ◇ Booster doses of fertilizer or manure should be applied before flowering. Carrying out

proper soil testing helps one to decide which fertilizer to apply.

- ◇ The most common deficiencies are due to lack of macro-nutrients like Nitrogen, Phosphorus and Potassium (NPK).
- ◇ Nitrogen deficiency: Leaves become small, narrow, pale causing stunted growth. Use NPK with high N ratio or Urea
- ◇ Phosphorus deficiency: Irregular, interveinal, necrotic spots on older leaves and Bronze color on new leaves. Use NPK with high Phosphorus ratio, MAP or DAP
- ◇ Potassium deficiency: Small, narrow leaves with light brown spots and dark spots in the fruit. Use NPK with high Potassium ratio

**Note:** Some micro-nutrients deficiencies look like diseases, first consult an expert.

### NATIONAL AGRICULTURAL RESEARCH ORGANISATION

"NARO is working in partnership with trained nursery operators to disseminate quality avocado seedlings."

QUALITY HASS AVOCADO SEEDLINGS ARE AVAILABLE AT SUBSIDISED PRICES AT:

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