

# Harvesting

- To many people, *mature* and *ripe* mean the same thing when describing fruit
- However *Mature* is best defined as “the sufficient stage of development acceptable to the ultimate consumer.”
- Maturity can also be described as the attainment of a particular size and stage after which ripening takes place.
- Two types of maturity are distinguished:
  - physiological maturity and
  - commercial (horticultural) maturity.

# Harvesting cont.

- Harvesting in avocado starts at 3-4 years from planting but a good yield is obtained from the 6th year onwards.
- To produce the best quality fruits in terms of size, colour, flavour and shelf life, harvesting should be done at optimum maturity.
- In Kenya avocado is harvested between April and September.
- The fruits are ready for harvesting at 5-10 months after flowering. Which is dependent on the variety and the ecological conditions of the region.
- Harvesting should be done when fruit is cool and cooling the fruit as soon as possible promotes quality and shelf life.
- Maturity indices are important for deciding when a given fruit should be harvested.



# Harvesting cont...

- Avocado can only start the ripening process after it has been picked.
- One of the best ways of storing the fruit is to leave it on the tree.
- But prolonged storage can have a negative effect on production in the following season.
- The variety and the producer country concerns are to be taken into consideration to judge the optimum stage of maturity.
- Useful information on maturity can be obtained from Visual appraisal,
  - fruit weight and diameter
  - the number of days after flowering

This may however not be very accurate



# Harvesting cont.... The maturity indices

## Fruit skin colour change as indicator of maturity

- This is applicable to varieties that change colour at maturity.
- For instance; dark-colour varieties - when they start to turn from green to dark colour,
- Green-colour varieties become smoother, may develop corky spots, and a yellow tint to skin and stem.
  - For the Fuerte variety, the fruit remains green after maturation but glossy shine appearance disappears. The skin is smooth at the blossom end.
  - For Hass variety, the fruit turns from green to purple and the skin gets rougher with cork-like spots on the peel.
- Assessment of the correct harvesting time is important
  - it directly affects fruit quality,
  - storage and shelf life.
- Harvesting of the fruit before reaching an optimal point can lead to deficient ripening and quality.
- On the other hand, when the harvest of the fruit is carried out after the optimal point, its post-harvest life could be diminished.



# Methods of determining Maturity index for harvesting

## Floating test method:

- Fruits that float on the surface when immersed into water are usually mature
- Immature avocados sink or float below the surface.

## Sample at room temperature method:

- Harvest a sample and keep at room temperature. If they soften within 7-10 days without shrivelling then the fruit of that age are ready for harvesting.

## Other methods

- Dry matter testing involving the oil content in avocado and near infrared spectroscopy (NIS).
  - Determining the matter content—strongly correlated with the oil content—is the most commonly used method - at least 20% dm & > 8% oc.
  - Appraisal of the stage of maturity is completed by analysis of enzyme activity,
  - electrical conductivity,
  - aromatic compounds or precursors or
  - Organoleptic tests when the fruits have ripened.

## Avocado harvesting plan for different avocado growing regions in Kenya for Fuerte and Hass Avocados

COUNTY	MONTH												
	Jan	Feb	15th	Mar	April	May	June	July	Aug	Sept	Oct	15th Nov	Dec
Kirinyaga	X	X	√	√	√	√	√	√	√	√	√	√	X
Meru	X	X	√	√	√	√	√	√	√	√	√	√	X
Murang'a	X	X	√	√	√	√	√	√	√	√	√	√	X
Machakos	X	X	X	√	√	√	√	√	√	√	√	X	X
Uasin Gishu	X	X	X	√	√	√	X	X	X	X	X	X	X
Kakamega	X	X	X	√	√	√	X	X	X	X	X	X	X
Trans Nzoia	X	X	X	√	√	√	X	X	X	X	X	X	X
<b>KEY</b> √ - Approved for harvest X – Not approved for harvest													

(Horticultural Crops Directorate, 2016)

# Record keeping

Observing and keeping records are two important things for a farm.

- They are essential for good planning and use of limited resources.
- Without proper understanding of record keeping, it is difficult to succeed in today's business world.

Some records to be maintained will include:

- **Field operation records:** For example, pruning thinning, weeding fertilizer application for the trees. Crop name
  - Field pest scouting records
  - Pesticide application records
  - Fertilizer application record
- **Inventory Records:** These include records of consumable goods
- Marketing records
- Master roll records.



**THANK YOU**