



REPUBLIC OF KENYA



MATURITY INDICES FOR AVOCADO



1

light green

Very firm. Ready to eat in about 5 days.



2

medium green

Firm. Ready to eat in about 3 days.



3

breaking

Somewhat firm. Ready to eat in 24 hours.



4

pre-ripe

Somewhat soft. Ready for slicing.



5

dark ripe

Softer. Ready for all uses.

Introduction

Crop maturity is a stage at which the crop can be harvested or fruit detached from the mother plant and is ready for market and utilisation. Maturity indices are signs which determine whether a crop is ready for harvest or not. Avocado, assessment of fruit maturity should be simple and easily performed in the field and using simple equipment.

Types of Maturity


- ❖ Horticultural maturity: In this type of maturity, the produce has attained characteristics that can be used by consumers for certain purpose
- ❖ Physiological maturity: In this type of maturity, the produce continues to develop even after it is detached from the mother plant

Importance of Maturity Indices

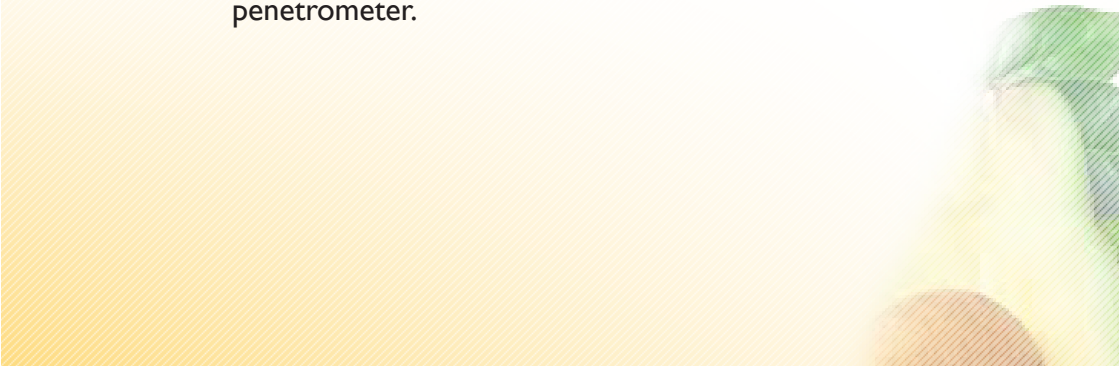
- ❖ Ensures nutritional value as well as sensory quality (flavor, colour, fragrance and texture)
- ❖ Ensures an adequate postharvest shelf life
- ❖ Facilitates harvest and packaging operations scheduling
- ❖ Enable telemarketing or online marketing before actual ripening

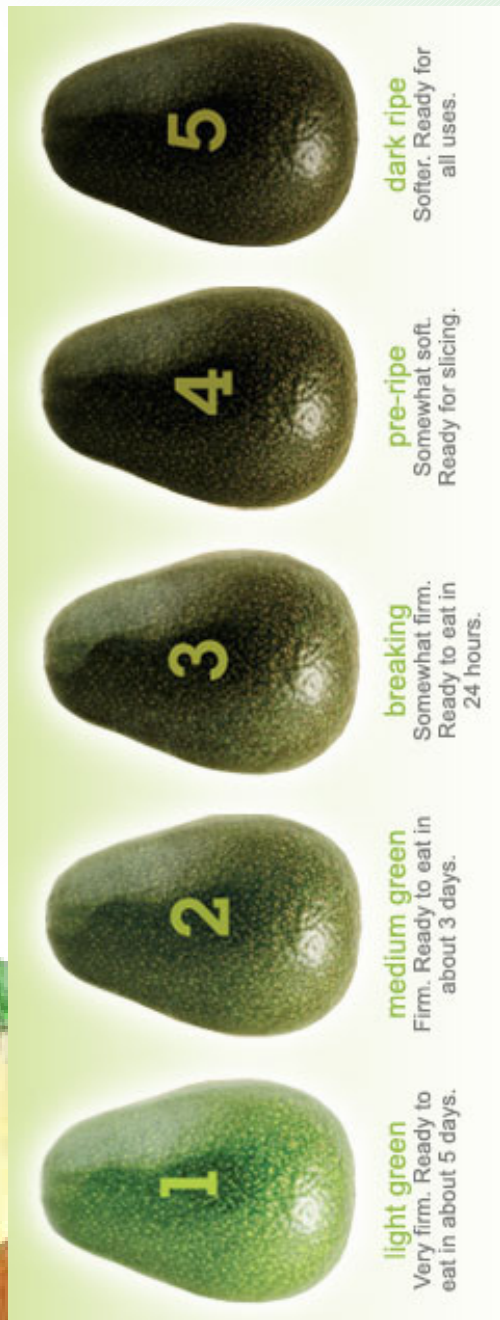
Avocado Harvest Maturity Indices

The methods used to determine maturity can be classified as physical, chemical, physiological, computational and electronic. Maturity varies across varieties and strains of fruits. These variations may be evaluated by establishing harvest criteria. Maturity can be determined as follows:

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- I. Visual indices (size, shape, colour and drying of the plant body)
 - II. Physical indices (peel/fresh firmness, specific gravity, abscission, fruit retention strength, surface morphology, juicy content, peel/fresh colour)
 - III. Chemical indices (Total Soluble Solids (TSS), Titratable Acidity (TA), solid to acid ratio, starch content, oil content and, sugars)
 - IV. Computation/calculated indices (days from bloom to harvest, calendar date, mean heat units, T-stage)
 - V. Physiological indices (respiration rate and ethylene evolution rate)
 - VI. Other methods (optical methods, acoustic and vibration tests, electromagnetic methods, electrical properties, near infrared reflectance)

The key parameters used in determining avocado fruit maturity are:

- ❖ Visual, involving skin colour and texture
 - ❖ Change feel, involving skin texture (as shown below)
 - ❖ Feel, measured by gentle hand squeezing of the fruit and a penetrometer.
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Avocado Maturity Stages as indicated by Color change of the skin – the color changes from light green to dark ripe

Source: Charity Gathambiri, KALRO




Determining Avocado Maturity

Maturity in avocado has a strong influence on the sensory acceptability, ripening characteristics, and incidence of rots and disorders.

A mature avocado:

- Will ripen with acceptable flavor and texture identifiable with a particular variety
- Will not shrivel and become rubbery and discolored when ripened

Table I. Avocado Maturity Stages as indicated by Skin color and texture Changes

Maturity stage	Description	Photo
1	Very smooth and shining skin (ready to eat in 20 days)	
2	Smooth skin (ready to eat in 10-15 days)	
3	< 50% skin is rough (ready to eat in 8 days)	

4

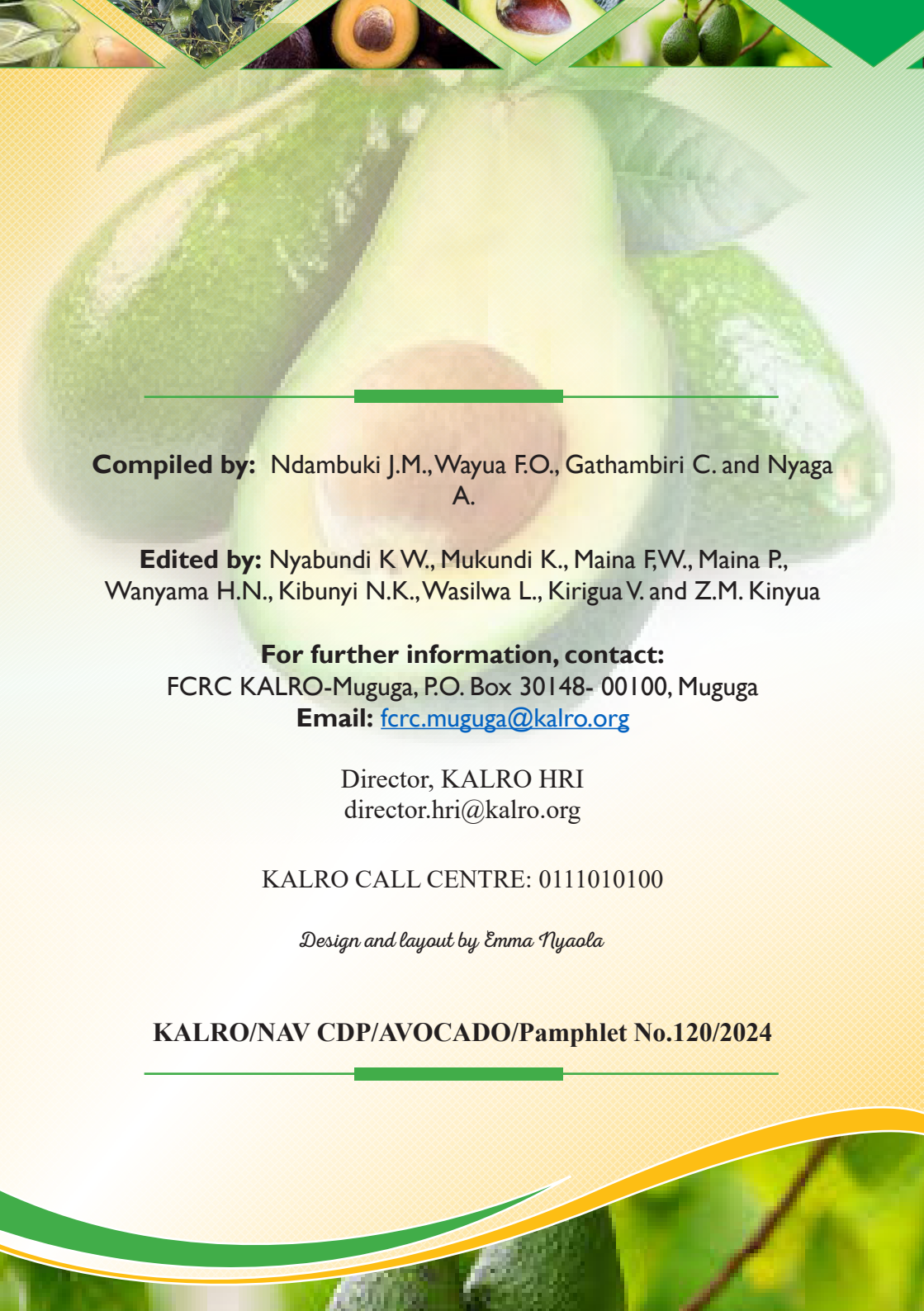
> 50% skin is rough and dull green skin (ready to eat in 3-5 days)



Source. Charity Gathambiri, KALRO







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