

Annexure C: How to take leaf and soil samples

AVOCADO SOIL AND LEAF SAMPLING PROCEDURES

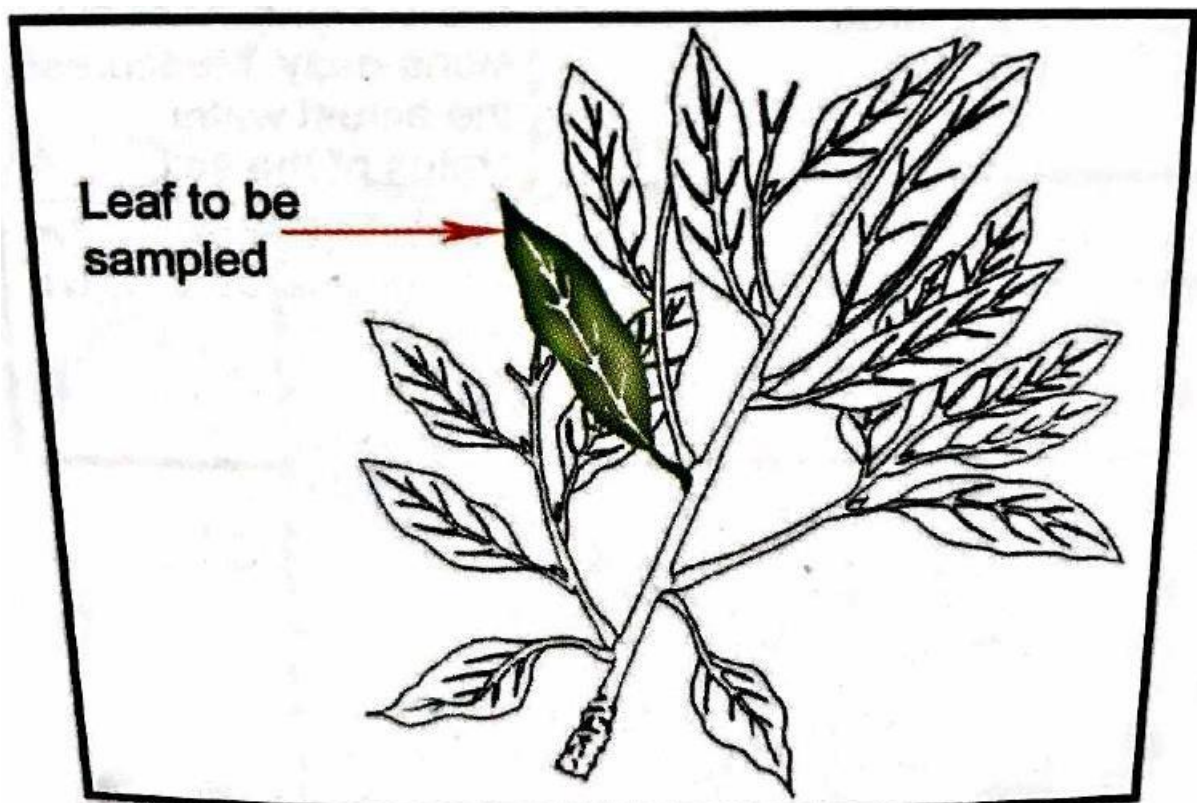
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Reference: R. A. Abercrombie. 2011. "Fertilization" *In*: The cultivation of avocado. Ed. E. A. de Villiers & P. H. Joubert. ARC-Institute for Tropical and Subtropical Crops, p. 142-144.

A soil analyses is vital to avocado management as it gives an indication of the available nutrients and a leaf analysis gives an indication of the current nutrient status of the tree.

Protocol for taking a leaf sample

Schematic illustration of the location of the leaf sample:



1. Healthy, fruit bearing trees should be sampled separately from stressed, non-bearing trees.
2. Sample trees should represent an area with homogenous soil type and microclimate.
3. Take leaf samples from terminal, non-bearing branches that do not show signs of a new flush and leaf samples should preferably been exposed to direct sunlight.

4. Collect 6 - 8 month old leaves (see illustration).
5. Sample in the morning after dew has dried off.
6. Mark sample trees clearly and use the same marked trees year after year and also for taking soil samples.
7. Collect 4 leaves per tree at shoulder height so that there are roughly 80 leaves per sample representing a block that is not larger than 3 ha.
8. Sample randomly (across the orchard) in the block from 20 trees on ≤ 3 ha.
9. Sample different soil types, tree ages and cultivars separately.
10. Keep the sample cool and send it to the laboratory within 24 hours of sampling.
11. Place leaf samples in a paper bag or perforated plastic bag that is clearly marked with the farm name, reference to the orchard, sample number and sample date.
12. Take the leaf samples to the same laboratory every year and send it in for analyses as soon as possible.

Protocol for taking a soil sample

1. Take soil samples at the same time as leaf samples (Feb - April) from similar soil types in the orchard.
2. Do not take soil samples within a week of fertilizing.
3. Have the fraction sand, silt and clay analyzed for every different soil type on the farm.
4. Soil samples should be taken at the same indicator trees as where the leaf samples are taken.
5. Use the same tree to take samples every year.
6. Mark the sample trees clearly.
7. Clear the soil from any mulch or fertilizer before the sample is taken.
8. Take the soil sample midway between tree trunk and canopy drip line at a depth of 15 - 30 cm deep (topsoil) and 35 - 55 cm deep (subsoil).
9. Subsoil samples are only important if acidity is suspected. Always keep topsoil and subsoil samples separate.
10. Combine at least 10 samples (from underneath 10 of the 20 leaf sampling trees) into a ± 1 - 2 kg strong, clean plastic bag.
11. Keep the sample cool and marked clearly with the farm name, reference to the orchard, sample number and sample date.
12. Take the soil samples to the same laboratory every year and send it in for analyses as soon as possible.