
Tea- Code of Practice for Planting and Harvesting.



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Tea – Code of practice for planting and Harvesting

1 Scope

This Code of Practice specifies the Guidelines for Planting and Harvesting of Tea Plant (*Camellia sinensis* (L.) O. Kuntze). It applies to farmers and handlers to ensure availability of quality and safe tea leaves throughout the year. It excludes processing of tea.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

3 Terms and definitions

For the purpose of this Standard, the following shall apply:

3.1.

cuttings

branches severed/removed from tea plant for propagation

3.2.

decentering

cutting away of unwanted branches or removal of central branch of plants at a given height to enhance proper growth and nourishment in tea plantation

3.3.

hardening

period after planting the cuttings. Two or three months is allowed to check root development

3.4.

nursery

place where seedlings are cultivated for transplanting

3.5.

plucking

process where the young shoots, buds and stalks are harvested from the matured tea bushes or mother plant

3.6.

pruning

cutting down of bushes to enable young shoot sprout and keep the plants in ideal shape

3.7.

skiffing

very light pruning operation whereby the bushes are cut across within maintenance foliage layer using a pruning knife

3.8.

tea plant

ever green flowering plant (shrub or small tree) of the species *Camellia sinensis*

3.9.

tea propagation

act and science of increasing or multiplying the available tea plants

3.10.

tipping-in

three (3) successive harvest of the desired leaves (new shoots) after pruning

4 Tea Propagation Methods

4.1 Sexual Propagation

This Propagation method involves the use of tea seeds;

- a) Viable tea seeds should be collected.
- b) Collected tea seeds should be soaked in clean water that complies with the relevant standard
- c) The sank/soaked seed should be removed within the first 24 hours to a germinating area.
- d) Seeds that did not sink after 24 hours should be left further for 48 hours to sink. The sank seed at this time should be kept separate from the earlier ones.
- e) All floating seeds after 72 hours and those that appear black and sticky or having fungal growth should be discarded.
- f) All sinkers should be placed to direct sunlight but avoid drying by sprinkling with water where necessary until they crack.
- g) As soon as they crack, they should be planted in nursery.

4.2 Asexual Propagation

This Propagation method involves the use of vegetative parts e.g. cuttings

- a) The branch to be cut from a healthy tea plant should be identified
- b) All identified branches should be wrapped in wet sacking. Branches with poor spread foliage should be avoided
- c) Vigorous young shoots between five (5) and seven (7) months old should be used when making cuttings
- d) All cuttings should be taken early in the morning before sun set in
- e) All cuttings should be done under the shade and kept shaded at every stage
- f) The very soft tips and the very hard lower parts of the branches should not be used for cuttings but discarded
- g) The cut should be made about 2 inches below a leaf node that has an axillary bud forming.
- h) Each cutting should consist of a leaf and an auxiliary bud forming.
- i) Sharp knives/pruning shears should be used for cuttings.
- j) Cuttings should be soaked immediately they are prepared in containers with the fungicide solution for about 30 minutes before planting, to prevent fungal infections.
- k) Cuttings with damaged leaves should be avoided.

5 Procedure for Planting Cuttings

- a) The leaf or bud should not touch the soil (plant cuttings in the sleeves so that the bud is just above the soil level).
- b) Finger should not touch the top or bottom cuts of the stem during planting as the sweat from fingers may affect survival.
- c) The cuttings should be kept moist during planting by frequent watering early in the morning.
- d) Where the cuttings leaves are naturally deflexed (bending backward instead of upward), the stem should be inserted into the soil at an angle so that the leaves are clear of the soil.
- e) A clear polythene sheeting (250–500 gauge) taut should be stretched over hoops and buried 1ft deep into the soil to exclude any exchange of air.

- f) Tea cuttings should be checked for roots by giving it a gentle tug at the end of eight (8) weeks. If resistance is felt like the cutting is anchored into the soil medium, the roots have started to form. The cutting should be allowed to remain in the planting medium until new growth is noticed.

**Note: Callus formation takes up to two (2) weeks after which root formation occurs.*

6 Nursery

6.1 Low shade nursery

Nursery which is 1.8 meters (6ft) wide x 4.3 meters (14ft) long x 1.2 meters (4ft) height (per unit plants of 1,200).

A ventilation of 1ft(0.3meters) is allowed at the top.

6.2 High shade nursery

Nursery with height of not less than 1.5 meters (5ft). Width and length depend on the number of beds desired.

1ft (0.3 meters) between bed and the shade structure is allowed.

6.3 Bed construction

Dimension of 1.8 meters (6ft) x 3.7 meters (12ft) (per unit of 1,200 plants)

- a) For marking of beds, cut pegs of 45cm, drive 15cm into the soil (leaving 20cm above the surface) at 60cm (2ft) intervals.
- b) Tie fits on the pegs 15cm from the ground.
- c) Arrange hoops at 60cm (2ft) intervals.
- d) Hoops should leave a space of 20–25cm above the top of the sleeves.
- e) Sleeves should be arranged in the nursery bed such that 200 sleeves occupy 2ft x 4ft (stacking).
- f) Use sleeves of 150-gauge polythene with a width of 10cm (4 inch) or diameter of lay-flat 5.25cm (21/2 inch) and 25cm (10 inch) long.
- g) Spot seal the sleeves or staple once in the middle of the bottom edge to allow drainage.
- h) All roots, hard soil lumps and stones should be removed from the soil used to fill sleeves.
- i) Eight (8) wheelbarrows of sub soil/top soil mixture should be mixed with 1/4kg of Di Ammonium Phosphate (DAP) (for 1,200 sleeves).
- j) Sleeves should be filled to a depth of 17–17.5cm (3/4 of sleeve) with sub soil/top soil and fertilizer mixture and the remaining depth of 8–8.5 (1/4 of the sleeve) should be filled with sub soil only.
- k) The soil should be packed fairly firm and not loose nor should it be packed hard and be damped at all times.

**Note: The roots are extremely sensitive to dry soil. Planting medium should therefore not be allowed to dry out or the cuttings will die.*

6.4 Establishment of Nursery

- a) Polling pot of about nine (9) inches with perforations in it and three (3) types of soil; black soil, medium soil and red soil should be used.
- b) The nursery should be near a permanent water source.
- c) Nursery should be well sheltered from prevailing wind.
- d) The soil in the nursery should be free draining and friable.
- e) The soil pH should be between 5.0–5.8.
- f) Low laying areas which become very wet during the rains or which get frost during dry months should be avoided.

6.5 Maintenance of Nursery

- a) All beds should be inspected at least once a week.
- b) The beds should be regularly checked for weed growth, insect pests and diseases and treated as necessary.
- c) All weeds should be hand pulled always.
- d) The soil around the polythene should be kept damped during dry weather.
- e) After planting, beds should be watered 21 days later or when sheet is noted to be dried.
- f) Shade should allow 60% of day light.

7 Planting

Young plants that have been carefully nurtured in nurseries should be re-planted in specially prepared fields or on specially prepared terraces to help irrigation and to prevent erosion.

The plants should be planted 1 to 1.5 meters apart

8 Hardening

Gradually preparing the plants for field conditions;

- a) After planting the cuttings, the polythene should be loosened at both ends of the bed and be left loosened on the ground after 3–4 months of planting (new shoots are about 20cm/8 inch).
- b) One week later, the polythene should be rolled up at both ends and left like that for circulation of air
- c) After another week, the polythene sheeting should be rolled up 30cm (1ft) at each end and a week later rolled up 120cm (4ft) at each end
- d) Weekly increase opening of 120cm (4ft) should be done until the whole bed is uncovered
- e) The soil in the sleeve should never be allowed to dry up during hardening off period
- f) Fertilizer application should begin after complete removal of polythene sheets which should be done at the rate of 10g in 10 litres of water.

9 Farm Maintenance

9.1 Pruning

- a) This should commence after 5 years of transplanting, at this age tea bushes are considered matured.
- b) Bushes pruned during sunny weather should be covered immediately after the pruning.
- c) Pruning should be done parallel to the slope of the ground.
- d) Each individual cut on the branch/stem should slope slightly to allow runoff of rain water to prevent die back and rotting.
- e) Prune should be done when there is still adequate moisture in the soil.
- f) Only pruning knife, sharp edge cutlass or pruning machine should be used to carry out this operation.

9.2 Skiffing

Bushes that developed a domed surface due to poor plucking should be removed.

Heavy pest infestations that have defoliated the bush and shoots that have suffered die back should be removed.

***Note:** Skiffing hastens fast recovery from severe hail or frost damage and prevent branch die back

9.3 Tipping-in

This should be done at 10cm (A") above pruning height.

It should be carried out using tipping stick to maintain uniform height of the bushes.

Knife should not be used for tipping-in.

9.4 Decentering

This should be done by the use of knife.

10 Application of Fertilizer

- a) The field should be kept clear of weeds.
- b) Other crops grown in the tea should be provided with fertilizer separately at their recommended rates.
- c) Commonly used fertilizers may include NPK and Urea
- d) Application should start at about six (6) months or six (6) weeks after transplanting for stump plant and sleeved plants respectively.
- e) It should be repeated at about every eight (8) weeks (2 months) interval for both stump/sleeved plants.
- f) Fertilizers should not be applied during periods of very heavy rainfall.
- g) Fertilizers should not be applied immediately after pruning.
- h) Fertilizers should be applied not less than four months before pruning if server nutrient deficiency is detected before pruning.
- i) Fertilizers should be applied by broadcast or by ring methods.
- j) Algal blooms in ponds within the farm should be investigated as this is an indication of nutrient leakage to surface water
- k) Fertilizer application record indicating date, location, type and quality should be maintained

11 Management/Application of Pesticides

- a) The use of pesticides on a matured tea should be avoided
- b) Care should be taken on application of pesticides as careless application of pesticides may kill natural enemies of pest and allow epidemic to develop
- c) Pesticides should not be used if workers are not trained, proper use procedures are not in place, or appropriate application equipment and protective equipment are not available.
- d) Pesticides should be stored in a safe and secured store(s) and appropriate protective equipment and handling procedure used.
- e) If pesticides are used, their application should be restricted to those products recommended by approved National Institution with the mandate for Tea research and Codex Pesticide Residues in Food online Data Base / Codex Maximum Residue Limits (MRLs), (Primary Food Commodity of Plant Origin)

12 Weed Management

12.1 Chemical weeding

If herbicides use is necessary, it should not be applied without access to appropriate herbicides, application equipment and Personal Protective Equipment (PPE).

Instructions for application should be read very well before application.

Ultra-low volume or similar technology should be used to minimize discharged chemical level.

Chemicals should not be applied under cloudy weather or rains.

Spot spray should be done with proper targeting of the weeds and spraying areas unnecessarily should be avoided.

The nozzles of the knapsack should always be kept down while spraying.

12.2 Manual weeding

This should involve the use of hand and other simple farm tools including hoes cutlasses amongst others.

13 Irrigation

Irrigation water should be applied to maximize availability to the bush with minimal run off.

For young tea, 5 hours of operation (8-10 days interval), for matured tea, 7 hours (8-10 days interval).

The quality of the water to be used for irrigation should be ascertained and should comply with the requirements of relevant standards.

14 Plucking

14.1 Green Leaves Plucking

The plucking of Green Leaves should be 2–3 leaves and a bud. The plucked leaves should not be exposed to direct sunlight but kept under shed. All plucked leaves should be weighed to ascertain their weight in kilograms (kg) before conveyance to the factory.

The harvested/plucked leaves should be delivered to the factory or collection point quickly with minimal damage.

Foreign matters including leaves from other plants (adjacent trees and wind breaks) should never be present in harvested leaves.

Pesticides residues should never be present in harvested leaves.

Records for harvested leaves should be maintained for traceability.

Bibliography

1. ISO 6078: Standard on Black Tea – Vocabulary
2. CAC/RCP 1-1969, Rev 5-2020 Codex Alimentarius Commission
3. Recommended Code of Practice-General Principle of Food Hygiene.