

## THIRD SESSION

### VEGETATIVE PROPAGATION OF TEA

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#### Methods of vegetatively propagating tea

*Camellia sinensis* X *assamica* vars. differ in all tea producing countries of the world, each of which has developed techniques which are influenced by local conditions which may not occur elsewhere. Individual concerns within these countries have further developed their nursery techniques to suit their particular requirements. The following is a brief outline of one such method which was developed from the general recommendations of the Tea Research Institute of East Africa.

**Nursery beds.** These consist of 150 gauge polythene sleeves, stapled or spot sealed at the base and perforated in the lower half to assist drainage, stacked upright in beds of 2 to 4000, 10 cm lay-flat tubing being used for plants required for new extensions and 15 cm lay-flat tubing for the larger plants needed for infilling vacancies in mature fields. Sleeve length is 25 cm in the former case and 30 cm in the latter. Over each bed a tent or hoop shaped framework is constructed on which polythene sheeting is stretched following planting of the cuttings. The whole nursery is covered with a high shade of bracken supported by poles, wire stretchers and chicken wire.

**Rooting medium.** The sleeves are filled to approximately 7 cm from the top with forest soil of high humic content to which is added 600g of single superphosphate per cubic metre of soil. The sleeves are then topped up with sterile, grit free subsoil. Both the forest soil and the subsoil are checked to confirm an acidity of pH 4.8 to 5.3.

**Cuttings.** Internodal cuttings with a single whole leaf are taken from the regrowth made by bushes pruned about six months previously. Material is removed from the mother bush when soft and green and during a period of vigorous growth. Cuttings are 3.5 cm in length below the node, being trimmed off immediately above the node. Following preparation, the cuttings are immersed in water for 30 minutes before being planted in the sleeves. It is standard practice to add a copper fungicide to this water as a prophylactic against damping-off (*Pythium* sp.) The cuttings are pushed into the sleeves at a slight angle from the vertical so that the leaf does not touch the soil and the node is immediately above soil level. Following a final watering the beds are covered with polythene sheeting which is sealed around the sides with earth from the paths between beds. Shade density is checked by taking temperatures at soil level in sample beds daily, at

noon, for a week when they should average 27° C. Under normal conditions the beds may then be left for about three months by which time roots averaging 7 cm in length will have formed and the polythene sheeting can be removed. This is done by opening the ends of the beds for two hours per day in the early morning for a week, followed by a complete removal for two hours per day for a further week after which the polythene is removed completely. Polythene sheeting is used only once. Attempts to use it for a second time have led to poor results possibly due to the rapid oxidation of polythene in the intense solar radiation at high altitudes on the Equator.

As soon as the polythene is removed the young plants are fed with a weekly application of NPK 25 / 5 / 5 at the rate of 120g in 120 litres of water per 30 metres of bed.

**Shade.** Once the plants have made about 20 cm of top growth the shade is gradually thinned over a period of two months and the plants are then hardened off for a further period of two months before being planted out in the field. The whole operation takes from 9 to 15 months depending upon the size of plant required.

**Conclusion.** Bearing in mind the lack of skilled nurserymen this simple method produces cheap and acceptable results in the range of 80 to 90% utilizable plants. The cuttings are handled only once and the presence of fertile soil in the lower part of the sleeve enables the plants to be grown on without the need for transplanting or other operations requiring even a modicum of skill. The nursery manager would need to inspect the beds once per week for aphid or damping-off during the time the plants are under polythene and check that the watering and shade are correct once the plants lose the protection of the polythene. The comparatively expensive costs of transporting plants to the field can be offset to a certain extent by siting nurseries as close to the area of development as possible.

## THE VEGETATIVE PROPAGATION OF CORYLUS

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This subject was chosen for a short talk to this meeting because it is an extremely good example of a group of plants which, although fairly easily propagated by traditional means, can nowadays be produced more intensively by sophisticated, modern techniques.

**Layering.** This system of propagation is a particularly useful method of propagating small numbers of plants but it is extensive in its use of land and stock material. The parent plants should be planted in