

FUMIGATION OF NURSERY SOIL

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"Sow'd cockle reap'd no corn"—Love's Labour's Lost

Shakespeare knew the consequences of sowing wheat seed infected with eelworms; planting eelworm infected tea clones can have equally undesirable results.

The meadow nematode or eelworm *Pratylenchus loosi* is probably the greatest threat to the replanting programme on up-country tea estates in Ceylon. Nematode infestation in the cleared areas can be controlled by proper soil rehabilitation, but there is no point in controlling eelworms in the field if plants raised in the nursery are infected. *At present there is no suitable alternative to soil fumigation with chemicals like D.D.* There is a tendency for planters to use untreated sub-soil or jungle soil when pressure of work makes fumigation difficult. Recent experience has shown that this is a most dangerous practice and should not be considered.

A summary of the procedure for the fumigation of nursery soil is given below.

1. When preparing a nursery site, the entire nursery, including paths, should be carefully cultivated and weeded. Plant debris should be well rotted before treatment.
2. The entire nursery should be fumigated when the soil is moist, neither too wet nor too dry.
3. The fumigant should be injected to a depth of 6 inches on a one foot grid at the rate of 48 Imp. gallons per acre (5 cc per injection).
4. Immediately after fumigation the soil should be watered lightly, then heavily thatched and left for three weeks when the thatch should be removed and the treated soil thoroughly forked to allow the fumigant to escape.
5. During warm, dry weather the treated area can be safely planted four weeks after fumigation; during wet weather planting should be delayed for five weeks.
6. Strict precautions should be taken to prevent re-infestation from neighbouring untreated soil. Precautions should include the digging of drains around the nursery; drains should be concreted, at least on the upper boundary.
7. Reinfestation of the nursery by nematodes carried in water must also be avoided. The use of settling tanks is the most practical solution to this problem. In still water, nematodes sink at the rate of 6-9 inches per hour. If the water required daily for the nursery is stored for 24 hours before use, all nematodes will have settled on the bottom of the tank. The outlet tap should be placed one foot above the tank base and sludge deposits should be cleaned out periodically. A half acre nursery requires 4,000 gallons of water a day during dry weather.

8. All soil used for basketing, regardless of its origin, must be fumigated. The soil should be stored under cover, preferably on a concrete floor, and for treatment should be spread out, not more than one foot deep, injected with D.D., then another layer added and treated, and so on. Fumigated soil should be turned over twice before use.

9. Polythene bags containing treated soil must not come in contact with untreated soil at any time. The bags should be placed on the surface of fumigated soil or, even better, stored on racks to prevent movement of worms from the sub-soil.

10. Fumigation is only effective for one batch of cuttings and soil should be re-fumigated before being used for a second batch.