



NATURE MANAGEMENT SERVICES

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Independent Environmental Agency.

Inspection of Honey bush tea seedlings at Sassenheim Nursery.

Introduction:

This report is done at the request of Eco-Route Environmental Agency.

The purpose of the investigation is to determine the condition of the 170,000 Honey bush seedlings in planting trays at Sassenheim nursery.

Methodology:

Mr. Moat (landowner of the intended Honey bush tea plantation) and Mr. Therblance, farm manager) was met on the Sassenheim nursery site.

They supplied information relevant to the investigation and explained the reason for the request to assess the seedlings.

Seedling trays situated in two locations on the Sassenheim nursery were inspected visually. Samples of the seedlings were removed from the plant trays and inspected visually for root condition.

Seedlings were also inspected for signs of stress or disease.

Photographs were taken of plants and root balls for later reference.

Report:

a.Seed

Mr. Moat informed writer that the seed was obtained from "The Heights Tea farm" in the Langkloof and that there were three species of *Cyclopia* involved in the plantings.

Cyclopia longifolia

c.subternata

c.Intermedia

b.Seedlings:

Altogether about 170 000 seedlings is being reared at Sassenheim.

It was also mentioned that there would not be so much seed available again in the near future.

The seedlings vary in age, but they are between three and five months old.

Most of the seedlings, grown in planting trays are healthy and growing well. The trays are kept under shade netting while the larger group is kept inside a hothouse under moderate temperature conditions.

Some of the seedlings looked stunted and showed signs of stress. I was informed that the stressed plants were planted in different media as an experiment.

Some trays displayed a more bushy appearance due to pruning of the primary buds in an effort to slow down growth.

Honey bush belongs to the group of plants (Fabaceae) that can form beneficial associations with soil micro-organisms. It is a process that needs to take place early in the development of the seedling.

It was noted that some of the seedlings displayed evidence of root-nodules indicating that the seedlings were inoculated with a commercial bacterium culture. Each terroir will have a unique soil microbe population profile. It will thus be to the advantage of the future health of the tea plants, that they form associations with resident populations of microbes as soon as possible.

Pictures of seedlings:

Seedling trays.

Experimental trays with weak seedlings



Normal seedlings.



Pruned seedling.



Seedling Root ball showing root nodules.



d. Financials:

The owner, Mr. Moat has invested a large sum of money to purchase the farm where the proposed tea plantation is going to be planted. Further expenses include the purchase of seed and the costs of establishing the seedlings in the nursery. Current seed price, nursery costs and other expenses brought the estimated cost of the seedlings to an amount of between R 8.00 and R11.00 per seedling.

At this cost, the investment in seedlings can be between R1 36 000 and R1 870 000 for the 170 000 seedlings as they stand.

Conclusion:

It is quite clear that the seedlings cannot be kept in the present trays for much longer than one to two months before becoming pot-bound and stunted due to the limited root space of the planting tray plug size.

There are three clear options to go forward from this point.

1. Retain the seedlings in the present seed-trays
2. Re-pot the seedlings into larger containers.
3. Plant the seedlings into the soil in the proposed tea plantation

1. Retaining the seedlings in the present seed trays can only continue for a maximum of two to three months before losses will start accumulating due to the small space for root growth in the seed tray plugs. Risk of too much or too little water in the trays can cause stunting or drowning of seedlings.

2. transplanting into larger containers always carry the risk of losses due to contamination and damage to plant stems.

Transplanting into larger containers will also set back growth of the plants for several weeks after the re-potting.

Re-potting, apart from the abovementioned issue, carry additional costs, adding to the eventual costs of establishing the plantation.

3. Establishing the plants directly into the eventual plantation is the optimal choice. Plant-plugs can be planted directly into the previously prepared soil in the plantation, thus minimising the opportunities for losses during re-potting, as well as the possibilities of losses due to plants getting pot bound in the smaller containers.

Recommendation:

Taking into consideration the cost and availability of seed, the substantial costs of establishing the tea farm as well as the risks of losses in the nursery, it is submitted that the most efficient way to prevent significant losses, would be to allow the planting operation to proceed directly into the soil of the proposed plantation as soon as possible. Delaying planting for more than a month for the older seedlings, will have a significant negative influence on the first harvesting season.

Peet Joubert.