SOME POSSIBLE CAUSES FOR FAILURES OF YOUNG TEA IN NEW CLEARINGS

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When one considers the possible causes for failures of young tea in new clearings one should not forget that at least some of them are a result of improper nursery techniques adopted previously. Very often lack of conformity to nursery procedures could unwittingly lead to weakening of nursery plants which when planted in the clearing would be the ones that would pack up for the first signs of adverse weather conditions. By this time it is far too late to even remember the nursery technique that was found wanting at that time. Adoption of simple nursery techniques which have been planned well ahead and timed properly would go a long way in producing a batch of healthy plants which would not be problematic in the clearing.

Apart from causes for failures in new clearings arising as a result of improper techniques failures could also arise from causes related to the new clearing itself. For whatever reason plants die, it would cause serious dislocation in the replanting programme and would put the affected areas out of gear with the rest of the tea in that clearing. Most of these deaths occur in the first two years of their field planting and one has to start all over again incurring heavy losses. Careful advance planning in the nursery and adoption of proper practices in the clearing should go a long way to mitigate some of the losses that are within our endeavour to control.

Causes that could arise in the nursery stage

Sources of planting material:

There are several sources from which cuttings are procured and all sources do not produce equally good cuttings. If shoots for propagation are obtained from mature clonal fields, from young tea in new clearings, from mature bushes in plucking by resting them, from tipping fields or purchased from outside sources, the cuttings obtained from them would be far from satisfactory and is the stage when we would have commenced weakening the plants. Since each of the above sources are unsatisfactory, the cuttings obtained from them would be weak, and one cannot expect them to respond to all other cultural operations in the nursery. These plants would somehow grow but one should remember that they are inherently weak and once planted in the new clearing, which is an alien atmosphere to the young tea during the initial stages, most casualities would occur among this category of plants. Since nursery plants are needed continuously in a plantation it is best that a multiplication plot comprising of four to five clones are maintained for the supply of healthy shoots regularly after the mother bushes are given a proper prune.

Age of shoots:

Suitable shoots for propagation can be obtained only after pruning mother bushes and allowing the shoots to grow for 6 to 8 months in the up country and 3 to 4 months in the low country. Often very old shoots are taken for propagation leading to the planting of over-mature cuttings in the nursery which causes serious setbacks to growth. Such cuttings retard early rooting resulting in over callussing. Further, such cuttings are also prone to flower delaying vegetative growth. Since they are over-mature and cause a delay in growth they are not likely to go to the clearing in time and though an undesirable practice, many nurseries

retain them for another year and these plants are planted when they are too old. Until field planting they remain in their nursery bags where root growth will be severely cramped up and due to over crowded condition they would not branch out properly. Even when planted when they are approximately one year old, being plants raised from over-mature cuttings, one cannot expect a healthy plant and with this initial setback to growth these plants may succumb to adverse conditions in the clearings.

Type of soil used for propagation:

If the soil used for propagation is of a clayey nature it would impede drainage and under these conditions satisfactory root growth cannot be expected. When plants in this condition are planted in the clearing, the roots being restricted in growth cannot tap the water from the deeper layers of the soil and during times of moisture stress would be the ones which pack up early.

Method of filling polythene bags with soil:

While filling the bags, the soil should not be rammed in hard as root growth will be again impeded and casualties may arise in the clearing for the same reasons given above.

Fertilizer application to nursery plants:

There are at present several different dosages of T 65 nursery fertilizer mixture that is applied in nurseries. It is very often not realised that if less fertilizer other than that recommended is applied the plants would be starved of their nutrient requirements and this could produce weak plants which when planted in the clearing would succumb during adverse weather conditions. For most of the recommended clones T 65 could be safely applied at 1 oz T 65 in 1 gal. water once a fortnight for about 100 plants from the time of rooting of cuttings. As growth increases

(4 to 6 months old plants) this dosage could be increased to 2 oz T 65 in 1 gal. water once a fortnight for about 100 plants.

Use of eelworm-free water in the nursery:

Even if the soil has been fumigated, nursery plants have been found heavily infested with eelworms and this could be traced to the water used for irrigation. In several tea nurseries, the water used for irrigation is ravine water that courses through infested fields. Irrigating tea plants with such infested water without sedimenting the water would invariably result in the plants being infested and there is always the danger of such plants carrying infestations to hitherto uninfested areas causing failures in clearings.

Planting cuttings in the nursery bags:

When planting cuttings these should be driven straight down into the soil up to the node at which the mother leaf arises. In many cases cuttings are just struck in in such a manner that only about half the length of the internode goes into the soil and as a result the cutting is not well anchored. This would consequently lead to poor rooting as the cutting will be swaying for the wind. When such plants are planted in clearings they would cause problems as their rooting is not that deep.

The above are some possible causes that arise in the nursery stage itself that may be contributory factors for the failures in clearings.

Causes that could arise in the new clearing stage

Establishment of shade:

It is imperative that some form of temporary shade is established by the time the tea is planted. This is a very important requirement as the young tea

when planted in the new clearing has to face an hostile environment and many failures can be attributed due to lack of low shade during vulnerable times. A simple expedient is to plant *Sesbania* species at a spacing of 8' x 8' or 10' x 10'. This is a quick grower and casts a fine shade till the permanent shade takes over. It is emphasized that provision of temporary shade is a must especially with recurring droughts.

Establishment of wind breaks:

In wind swept areas wind breaks must be established well ahead. When there is no wind break the young plants would sway to and fro resulting in bark damage and usually a cavity develops around the plant which being compact does not allow water to flow down resulting in localised water logging. It serves no purpose to become alive to the fact that a wind break should have been erected to protect the young tea, after field planting as it will be far too late. Establishment of wind breaks must be done well ahead as it is a simple matter to find out whether a field is wind prone or not. You do not have to obtain confirmation that the wind, in fact, is affecting your young tea. As a precautionary measure the young plants must be protected with baskets or secured in position by two stakes on either side of them. Wind also causes severe defoliation of leaves.

Planting in water logged areas:

In new clearings it would be prudent to avoid those patches which are prone to water logging. In certain plantations there have been deaths caused by water logged conditions which could have been avoided as previous experience and observations would have indicated that such areas suffer from poor drainage.

Thatching of plants in new clearings:

During the early stages of growth, the young tea has to face harsh conditions and if no palliative measures are adopted with time these plants would pack up or become susceptible to diseases such as stem canker. It is of paramount importance that all exposed inter-rows are thatched adequately to conserve soil moisture during the onset of the dry weather. But what is of even greater importance is that once the thatching material has decayed the exposed areas should be re-thatched. Many casualties in clearings arise as thatching is not done at the proper time and re-thatching is not always undertaken in all instances. When replanting is to be done one could easily envisage the amount of thatching material needed and this should be adequately provided for.

Deep planting:

If the nursery plants are planted deep in the new clearing i.e. below the original level in the nursery bag, it could lead to the development of collar-rot and may result in death of the plants.

Planting in shallow soil:

If planted in shallow soil which has a slab rock close to the surface the roots will not be able to penetrate the soil and in times of moisture stress could cause casualties. This could have been overcome earlier by cutting soil profile pits of the approximate dimension of 4' x 4' x 4' at random throughout the field.

It is not suggested that failures in new clearings arise only due to the above causes. In fact, there are several other causes as well. However, the causes outlined above are some of the possible factors which if one is alert enough could be avoided by adopting timely remedial measures to minimise casualties in new clearings.

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