

SELECTING HIGH YIELDING TEA BUSHES

A. Kathiravetpillai

*(Plant Physiologist, Tea Research Institute
of Sri Lanka, Talawakele, Sri Lanka)*

In the early years of tea planting in Sri Lanka, seed was obtained indiscriminately from various sources with the result that the plants obtained from them consisted of a varied mixture with a high proportion of low yielding China type of tea. Later introductions of seed were, however, superior and gave rise to some of the higher yielding teas with close affinities to the large leaved Assam jat. With the development of the vegetative propagation technique in the late thirties, some effort was made towards the selection and the establishment of clones.

When the selection programme got underway in the early stages there were over 200 approved clones but only 40 were being used for replanting as the majority did not perform well. However, of these, only 10 to 15 clones were being widely planted and over 95% of the replanted clones represented the TRI clones. From this it is apparent that the number of superior clones available is small and thus there is an urgent need for a greater number of high yielding clones possessing desirable characteristics. The large scale replanting of few clones is fraught with the danger of extinction in the event of an outbreak of unforeseen strains of pests or diseases and hence the need to select a diversity of clones to minimize the heavy reliance that is placed on few clones.

In this respect plantations could by themselves make valuable selections from their seed tea and help to augment the existing list of clones.

From yield records maintained in the plantations, one should identify those fields which have been consistently giving high yields and with a good jat of tea. Having identified high yielding fields and in order to commence selecting bushes one should walk along a row observing about two to three rows of bushes on either side till one comes to the end of the field and then resume observations in another row and in this manner cover the entire field leaving

out the poorer sections. While selecting, the following types of bushes should be rejected:

(1) Those found near vacancies, roadsides, drains, etc. as their favourable growth could be due to the absence of competition.

(2) Bushes with an open plucking table. Select bushes having a high density of plucking points.

(3) Upright bushes with a poor spread. It is preferable to select a bush that is a natural spreader with strong frames and healthy foliage.

(4) Those with small leaves and shorter internodes.

(5) Those which tend to become dormant frequently and flower freely.

(6) Those having fewer maintenance leaves.

(7) Those showing poor recovery after pruning.

(8) Those susceptible to pests, diseases and drought.

A desirable type of bush may be said to be one that is not found in any favourable location and has, *inter alia*, large leaves with a spreading habit and a large number of plucking points that do not become dormant frequently and those which are relatively free of pests and diseases, etc.

If selection of bushes that exhibit a marked tolerance to adverse conditions like drought, pests and diseases, etc. are desired in addition to reasonably high yields, these should be undertaken during the height of a drought or in areas where there is a heavy incidence of pests or diseases, selecting bushes that continue to yield in spite of adverse conditions.

Since visual observations may be misleading it is essential that the yield of each bush be recorded individually over a period of time. It has been found that recording

of yields over 12 consecutive plucks give a fairly satisfactory estimate of the yield potential of a bush. Once bushes have been selected in the above manner the TRI will be happy to help in evaluating the yield potential of bushes. Based on such yield records it will next be necessary to calculate the grand average yield of that population of selected bushes and all those bushes whose mean yield over 12 consecutive plucks that are less than this grand average are rejected as poor yielders.

Since rooting is an important criterion in the establishment of clones, the selected bushes must be evaluated for their rooting performance. For this purpose, the bushes identified as high yielders should be pruned and 100 cuttings from each of them should be laid out in the nursery and after about 4 to 5 months time select only those bushes which show a high percentage of rooting. In order to test their field performance about 25 to 30 plants from each of these good rooting selections should be planted in a new clearing for field evaluation.

In this article a brief outline is given of the steps taken in the selection of high yielding tea bushes upto field evaluation in order to help estates who wish to do their own field selection.