

ABSTRACT

Presently, the tea industry in Sri Lanka, both in plantation sector and small holdings, mainly in the low country are facing a shortage of labour for harvesting, especially during the heavy cropping season. Harvesting is the most labour intensive agricultural practice in tea growing and labour cost for plucking is about 30 to 40% of the total cost of production. In order to enhance labour productivity, Tea Research Institute has introduced a selective tea harvester. Hence this experiment was conducted at the Tea Research Institute, Low country station, Ratnapura to study the characteristics of tea cultivars amenable for shear harvesting.

In order to study the different shoot growth characteristics, 42 tea cultivars (38 tea selections and 04 tea clones) were chosen for the study and among these 15 cultivars were selected for assessing the impact on growth, yield and quality of harvested crop. Manual and shear harvesting were tested on these 15 cultivars separately. In this study, shoot characteristics such as inter nodal length, leaf angle (apical and basal angle), leaf length, leaf area, active and dormant shoots in the plucking table, plucking area of the bush, shoot density and percentage of the dormant shoots in the plucking table were used to identify suitable cultivars for shear harvesting.

Results showed that, total yield was not affected by method of plucking. Of the shoot characteristics identified selections with longer inter nodes showed higher yield. Selections with short leaf length showed lower percentage of dormant shoots left after plucking and selections with wider basal angles incurred minimum damages and gave soft leaf pieces under shear harvesting. Therefore, of the studied selections LVP 58-12, LVP 57-142, LVP 57-49 and LVP 57-133 are suitable for shear plucking and long inter nodal length, short leaves and wider leaf basal angle can be used as key criteria for identifying cultivars suitable for shear harvesting.