

RESEARCH NOTE

Characterization and Evaluation of Bush type of *Centella Asiatica* L.

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Centella asiatica L., vernacularly known as "Gotukola" is found in many parts of Sri Lanka. Its edible qualities, pleasing taste and medicinal properties have rendered it popular as a green leafy vegetable in the diet of Sri Lankans. Gotukola is found either as a creeper or as a bush. Owing to its ease of cultivation and harvesting, the bush type is fast becoming popular, especially among commercial growers. There is therefore a need to select better bush type cultivars to increase the production of this leafy vegetable. However there are no information on the choice of characters which are important in varietal evaluation of gotukola.

In order to select suitable traits for characterization a number of morphological and agronomic characters were studied using three accessions G1, G2 and G3 of bush type of *C. asiatica*. Ramets (individual plantlets belonging to a clone) of the bush type are closely intact and separating them into individual ramets is difficult and an extremely tedious process. Therefore the effect of number of ramets per planting hole on the different characters was also studied. The experiment was a split-plot design with the 3 accessions in the main plots and 3 number of ramets per hole (1, 2 & 3), in the sub plots. Visual observations were made on characters such as leaf size, colour, texture, nature of leaf margin and petiole thickness. Leaf length, leaf width and petiole diameter were measured when the crop was ready for harvest. Other characters such as bush height, bush width, number of leaves and number of ramets per bush were recorded at 40, 70, 100 and 160 days after planting (DAP). First harvest was taken at 100 DAP while subsequent harvests were taken at 60-day intervals.

Morphological characters such as colour, texture and leaf size and petiole thickness varied among the 3 accessions. Though differences of these characters were observed during early growth stages they were more distinct at maturity. Leaves of G1 were large in size, dark-green in colour and of a thicker texture compared to those of G2 and G3. Marked differences were noted in petiole diameter and leaf area (length $\times$ width) that give quantitative measures of petiole thickness and leaf size respectively. Petiole diameter of G1 was greater than that of G2 or G3; but differences between G2 and G3 were small. Accession G1 had the highest leaf area and G3 the lowest. Accession G1 was easily given cultivar status based on the above morphological characters. Moreover clear-cut differences seen in quantitative characters such as the number of ramets, number of leaves, bush width and height, and green leaf yield (Figs. 1 and 2; Table 1) confirmed its (G1) status as a distinct cultivar.

Accessions G2 and G3 have some overlapping morphological features and hence caused some difficulties in separating them by examination of morphological characters only. However the quantitative characters measured throughout the growth period made it evident that these two accessions were different. The magnitude of the differences observed in bush height and width (Fig. 1) and mean yield of G2 and G3 (Table 1) were high. These differences were similar and significant during both seasons suggesting the importance of these agronomic traits in cultivar identification of bush type of *C. asiatica*.

The accuracy of the assessment of quantitative characters depend on the time of evaluation. Growth pattern of this crop showed that it was very slow up to 40 DAP, rapid between 70 and 100 DAP and gradual thereafter (Figs. 1 & 2). Though significant difference in bush width was found at early growth stage (40 DAP), significant differences in other quantitative characters such as bush height and number of leaves/ramets per bush were observed only later (100 DAP or later). This suggests that crop establishment requires nearly 40 days and that cultivar assessment at an early growth stage could lead to incorrect conclusions. Thus it is desirable to evaluate agronomic traits of gotukola cultivars at 100 or more DAP.