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Variation in morphological traits of turmeric rhizomes collected from different districts of Sri Lanka

A L S Dharmaparakrama*, I G M Rajapakshe and C L Thilakarathne
Central Research Station, Department of Export Agriculture, Matale

In order to investigate the variation in morphological traits of turmeric (*Curcuma longa* L.) rhizomes, forty eight turmeric samples were collected from twelve districts in Sri Lanka. These samples were grown at the Export Agriculture Research Station, Matale under the completely randomized block design with three replicates. Three rhizomes were randomly selected from each sample for characterization. As the morphological traits, length, diameter, shape, number of rhizome branches for left and right sides separately, number of nodes in mother rhizome, length of the longest rhizome branch and colour of the mother rhizome were measured. Fresh weight and dry weight of the three rhizomes were measured separately. The same set of samples were used for characterization and wet / dry weight calculations. The wet weight ratio was calculated as the fresh rhizome yield per 1 kg of fresh rhizome grown. There was large variation of turmeric rhizome in terms of length, number of nodes and diameter of mother rhizome. Total number of branches on mother rhizome and magnitude of wet weight ratio varied among the samples tested. In many of the samples, 20 out of 48, mother rhizome length ranged from 6.0 – 7.49 cm. Number of nodes on the mother rhizome ranged from 9.0 – 13.49. However, 23% of samples showed 10.50 – 10.99 nodes on an average. Diameter of mother rhizome ranged from 1.10 – 1.99 cm and 71% of samples were under 1.3 – 1.69 cm. Many of the samples (62.5%) showed the number of branches as 3 or 4. Wet weight ratio varied from 1 – to 18.99. From the tested samples, 44% showed a wet weight ratio below 5 whereas a few samples (for instance samples collected from Monaragala District) showed a wet weight ratio over 15. Colour and shape of turmeric rhizome varied among the tested samples where colour and shape were categorized into four and two groups respectively. It can be concluded that turmeric samples collected from different districts were differed with regard to morphological characters of rhizome such as length, diameter and number of nodes, colour and shape of mother rhizome. Length of the mother rhizome was well associated with the dry weight ratio which can be taken as a key yield related trait for selection of turmeric rhizomes. However, further investigation of relationship of curcumin content and colour of turmeric powder form is important in future research.

dharmaparakrama@yahoo.com Tel: 071-2805032