



207/B

Morphological variation of flower buds of clove (*Eugenia caryophyllus*) in mid country, Sri Lanka

A L S Dharmaparakrama¹, I G M Rajapakshe and K R D Gunapala

Research Station, Department of Export Agriculture, Matale.

Clove is an evergreen tree belongs to family Myrtaceae and its commerce is the unopened, dried, fully grown flower bud. Annual export volume of dried clove is 1972 t earning RsMn. 990 to Sri Lanka. Total clove extent is 7634 ha while 86 % is in mid country; out of which 46 % in Kandy and 26 % is in Kegalle districts. Cloves are native to the Moluccas and the first single consignment of seed has introduced to Peradeniya in 1830 and then moved to the neighboring areas. So far, no varieties of clove were identified, though some flower bud variances were observed in Sri Lanka. Therefore, different accessions of clove were collected from the mid country of Sri Lanka and studied the morphological variability of flower buds for genetic improvement activities. Collected accessions were KN/MS1, KN/MS2, KN/GL1, KN/GL2, KN/WT1, KN/WT2, KN/WL1, KN/WL2, MT/DE1, MT/AL1 and MT/DP1. Measurements were taken of the weight, length, diameter of ball and middle part of the fresh and dry flower buds while size, shape and color of the leaves were observed.

Results revealed that KN/GL2 has the longest flower buds in fresh (2.47 cm) and dry (2.19 cm) length with highest ratio (2.914) of fresh into dry length of the flower bud. Further, KN/GL2 shows the highest weights (4.84 g in fresh and 1.29 g in dry per 10 flower buds). Conversion ratio of fresh into dry weight, KN/GL2 shows the highest (3.752) whereas KN/MS1 shows the lowest (2.409). Accessions; KN/GL2, KN/WT2 and MT/DP1 have the largest fresh flower bud ball diameter (0.64-0.69 cm). In dry flower bud ball diameter, KN/GL2 shows the largest (0.57 cm) and highest conversion ratio (2.194) of fresh into dry diameter of the flower bud ball. Accession KN/GL2 shows the highest value for both fresh (0.842) and dry (0.460) flower bud middle diameter whereas the accession KN/MS1 shows the lowest for both fresh (0.517) and dry (0.489) flower bud ball diameter as well as the lowest conversion ratio (1.057) of fresh into dry diameter. Number of flower buds per cluster shows the lowest (8-12) in KN/GL2 whereas the highest (20-22) in KN/WL1. Longest leaf length (13.27 cm) was also observed in KN/GL2. Therefore; KN/GL1, KN/WT1, MT/AL1, KN/WL2 and KN/WL1 could be identified as the accessions with short and small flower buds having good conversion ratios of fresh into dry weight while KN/WT2, MT/DE1, MT/DP1, KN/MS2 and KN/MS1 as the accessions with medium size flower buds. According to overall observations KN/GL2 could be identified as the most different accession having very large flower buds among other accessions.