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Morphological marker characters between male and female plants of Kakrol (*Momordica dioica* ROXB)

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A study was conducted at Horticultural College and Research Institute, Venkataramannagudem, W.G Dist during kharif season of 2010-11 to differentiate morphological marker characters between male and female plants and these characters will be helpful to identify the male plants at an early stage and to plant new female plants in that space. The male and female plants were, observed for distinct morphological characters. The differences were evaluated between sex forms and the results were analysed through two sample t-test. Plant height, internodal length, leaf margins, number of lobes, leaf shapes and days to appearance of first male and female flowers were found to be significant. The plant height of male and female plants measured at regular intervals revealed that the growth of male plants was faster when compared to female plants. Similarly the internodal length was more in male plants. The number of lobes in leaf was more in female plants. Male flower appear earlier than female flowers. The leaf shape of female plant was mostly mapple like where that of male plant was cordate and mapple. The characters like leaf length, leaf width, petiole length, tendrill length, leaf area were found to be non significant. The lobe tip of female leaves was 80 % acuminate where as in male leaves the lobe tips were 50 % acute and 50% acuminate. The marker characters giving distinct difference between male and female sex forms were leaf margin, leaf shape and number of lobes.

Biography

P Ashok has completed his PhD at the age of 26 years from Indian Council of Agricultural Research, Pusa, New Delhi. He is working as Scientist in AICRP on Tuber Crops, HRS, Dr. YSRHU, Venkataramannagudem. He has published more than 25 papers in reputed journals.

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Relationship among the grain yield and some of the index parameters associated with drought tolerance in rabi sorghum

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The experimental material consisted of five lines and twelve testers and sixty hybrids developed by crossing five lines with twelve testers by line x tester fashion. The experiment was conducted during rabi 2006-07 at the sorghum research unit, Dr. PDKV, Akola (MS). The interrelationship among grain yield per plant (g) and six index parameters associated with drought tolerance viz., chlorophyll stability index (%), harvest index (%), drought index (%), dry matter stress index (%), plant height stress index (%) and stomatal index (%) in rabi sorghum was studied by calculating the Genotypic and phenotypic correlation coefficients. Harvest index denotes the partitioning of dry matter into economic parts. At genotypic level, it was correlated positively and significantly with drought index and grain yield per plant. Positive and significant association of harvest index and grain yield resulted into higher dry matter per plant which was translocated more efficiently through the stem into developing cobs for proper filling of the grains. Drought index exhibited positive and significant association with dry matter stress index and grain yield per plant both at phenotypic and genotypic levels. Dry matter stress index showed positive and significant correlation with plant height stress index and grain yield per plant both at genotypic and phenotypic levels. Stomatal index exhibited negative and significant correlation with grain yield per plant both at genotypic and phenotypic levels. The losses of water from the plants largely occur through the stomata. Therefore, the frequency of stomata and their size are the important factors affecting water turn over capacity of the plants. From the present study it was concluded that in rabi sorghum selection with less stomatal index is preferential for chlorophyll stability and good harvest index. Thus, all the above mentioned index parameters have role in determining the drought tolerance capacity of rabi sorghum and need to be exploited further for the development of the drought tolerant genotypes in rabi sorghum.

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