B-100: Genetic variation among populations of *Cynodon dactylon*

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In Sri Lanka *C. dactylon* occurs in a wide diversity of habitats This study dealt with the morphological differences among local populations in relation to the environmental conditions in their habitats. Populations of *C. dactylon* were collected from three habitat types (roadsides, lawns and paddy-fields) within five climatic zones in Sri Lanka (arid, dry, intermediate, lowland wet and upland wet). No collection was made from paddy-fields in the upland wet zone and alternate collections were made in forest and grasslands. Fifteen genotypes were randomly selected from each population and grown in spaced-plant trials during the Yala and Maha seasons. In each case split-plot design was used with two replicates.

Significant differences were found between populations for most of the attributes (plant height, pseudostem diameter, number of tillers, internode length, number of leaves, leaf length, leaf width, shoot and root dry weight) measured. Univariate and multivariate analyses showed that the largest differences existed between climatic zones. Populations from roadsides and lawns were morphologically different from paddy-field populations.

The soil water level at their site of origin was an important factor determining the performance of populations in the spaced-plant trial. The differences between populations of *C. dactylon* do not seem to be related to the distance between collection sites.

The morphological differences observed in this study were obtained when the populations were grown in a common environment, thus they are likely to be genetically determined. The populations were compared in two experiments, and it seems that those differences were unlikely to be a carry-over effect from the original habitat.