Genetic variability and association of late leaf spot resistance and productivity in groundnut (*Arachis hypogaea* L.)

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INTRODUCTION

The low productivity in groundnut is attributed to several production constraints among which the widespread occurrences of foliar diseases are the major factor. Three major foliar diseases viz., late leaf spot (*Phaeoisariopsis personata* (Berk. and Curt.) V. Arx), early leaf spot (*Cercospora arachidicola* Hori) and rust (*Puccinia arachidicola* Speg.) are most destructive, causing yield losses up to 70 per cent (Subrahmanyam *et al.*, 1980). Over 50 per cent less in pod and fodder yield has been estimated due to late leaf spot disease in Karnataka (Reddy, 1984). The present study aims at determining the genetic variability and association of late leaf spot resistance and productivity parameters.

MATERIALS AND METHODS

To generate the experimental material, four groundnut genotypes were used. Two widely cultivated Spanish bunch varieties but susceptible to late leaf spot disease (TMV2 and JL 24) were used as ovule parents and two resistant germplasm lines (RMP 12 and PI 393516) were used as male parents (Table 1) [9]. The crossed material is generated using different mating designs like single, back, three-way and double crosses and the segregating material was advanced from *S₁* to *S₃* generation under different selection schemes.

Observations were recorded on yield/productivity parameters like pod yield per plant (PY), shelling percentage (SP) and hundred seed mass (HSM) and foliar disease resistance components viz., defoliation percentage (DF), leaf area affected (LAA) and remaining green leaf area percentage (RG).

The statistical analysis for data on each character was carried out using individual plant observations. Phenotypic coefficient of variation (PCV), broad sense heritability (H), genetic advance over mean (GAM), phenotypic correlation co-efficient(r) were computed by using appropriate equations. The number of