RESEARCH PAPER

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Correlation studies in mesta genotypes with respect to biophysical, biochemical and yield parameters contributing to fibre yield

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Eleven genotypes of mesta were evaluated for correlation studies of biophysical, biochemical and yield parameters with fibre yield during *Kharif* 2002, at Main Agricultural Research Station, Dharwad. Significant correlation of above parameters was found with fibre yields. Fibre yield had significantly positive correlation with stomatal frequency on abaxial and adaxial surface, RWC, LIR, chlorophyll (a, b and total), plant height, stalk yield and fibre equivalent yield at harvest. Basal stem diameter, days to 50 per cent flowering, fibre recovery and seed oil per cent had positive and non-significant association with fibre yield. Whereas, phenols, tannins, sugars and seed yield had significantly and negative correlation with fibre yield. It could be concluded that stomatal frequency, RWC, LIR, leaf chlorophyll content may be considered as selection parameters for higher fibre yield in mesta genotypes.

Key words : Mesta, Genotypes, Biochemical, Fibre, Correlation

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INTRODUCTION

Mesta (*Hibiscus* spp.) is one of the important fibre crops and stand next to jute in production. Mesta cultivation is widely scattered in eastern, northeastern and southeastern states of India. It is the nearest alley of jute and plays an effective role in supplementing the short supply of raw material in jute industry. It is also used as raw material in the paper industry as a substitute to bamboo and eucalyptus (Sheshadri *et al*., 1987). Though, this crop is well suited and adopted to northeastern parts of the country, it is capable of growing luxuriantly even under adverse and wide range of soil and climatic conditions (Sinha and Shaha, 1980). Hence, there is a scope to extent its cultivation in the non-traditional areas.To findout the dependable parameter for yield improvement among the larger variable parameters correlation study helps to findout the direct and indirect causes of association (*Wright, 1921*). Therefore, a study was conducted to findout the association of different parameters with fibre yields in mesta genotypes.

RESEARCH METHODOLOGY

Field experiment was conducted at Main Agricultural Research Station, University of Agricultural Sciences, Dharwad during *Kharif* 2002 under rainfed condition. Soil was medium deep black with pH 7.1 and EC 0.21 dS m^{-1}. The experiment was laid out in a randomized block design with eleven mesta genotypes (AMV-1, AMV-2, AMV-3, AMV-4, AS-73 CP-560, HS-1, HS-2, HS-4288, HS-7910, HC-583 and AMC-108) replicated thrice. The seeds were sown in the spacing 30 10 cm and fertilizer was applied 40:20:20 kg NPK per ha. Routine cultural operations were attended to keep the plot free from weeds. The observations on biophysical and biochemical were recorded at 40, 80, 120 DAS and at harvest by using standard procedure. The yield and yield parameters were recorded at harvest, statistically analysed and correlation coefficients with fibre yield were estimated.

RESULTS AND ANALYSIS

The data on correlation coefficients of different biophysical, biochemical and yield parameters recorded at different stages of growth with fibre yield as presented in Table 1. Among the biophysical parameters, significantly positive correlation was observed for stomatal frequency on either of the leaf surface, relative water content and light interception ratio recorded at all stages of growth