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Research Article

ETHYL AMINE INDUCED TALL MUTANTS IN JUTE

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ABSTRACT

Presoaked seeds of jute (Corchorus olitorius L. Variety JRO-632) were treated with 1% Ethyl amine for 6 hours. Tall mutants were screened in M3 in contrast to the normal plants. Tall mutants otherwise looked normal excepting the nature of palmate leaf habit. A number of yield component growth parameters were recorded like plant height, basal diameter, plant spread, root length, pod per plant, seeds per pod, pod length/ breadth ratio, number of primary branches per plant, number of secondary branches per plant, leaf angle, branching angle, first flowering date, 100% flowering date, total duration, % of pollen sterility and weight of 100 seeds which were found to vary from the control plant. Chromosome analysis revealed a number of aberrations like stickiness, fragmentation, clumping, polyploidy, and laggard and bridge formation etc. at very low frequency. This tall mutant plant gives more fiber yield than the control plants with superior quality.

Keywords: Ethyl amine, *Corchorus olitorius* L., Tall mutant, 6 hours, chromosome.

INTRODUCTION

Jute (*Corchorus olitorius* L. Variety JRO-632) is one of the very important fiber yielding cash crops with great demand in International market. A number of mutants in jute were reported through genetic manipulation by application of ionizing radiations (Kundu, 1944, Ghosh, 1969, Hossain, 1970 and Basu, 1967).However. Chemical mutagenesis in jute is still lacking although considerable worked has been done on this line in other commercial crops, the present work was therefore, undertaken to investigate the potentiality of host chemical substances to induce mutation in jute.

MATERIALS AND METHODS

Jute seeds (*Corchorus olitorius* L. Variety JRO-632) obtained from Jute Agriculture Research Institute, ICAR, Barrackpore, W.B. were presoaked in distilled water for 24 hours and then treated with 1% Ethyl amine for 6 hours. The seeds were thoroughly washed with distilled water and then sown in the field directly with equal spacing for raising M1 generation. The individual M1 plants were harvested separately for growing M2 generation in progeny rows. The tall mutants were screened and again harvested for raising M3 generation. The mutants were screened in M3 generation. A number of essential yield components were recorded. Cytological anomalies and pollen sterility were recorded as per schedule techniques.

RESULTS AND DISCUSSION

The present investigation indicates that some tall mutants were screened after M3 generations. The tall mutants otherwise looked normal plants like. Variation of yield component growth parameters was recorded. The segregation behavior in M2 generations was fitted to a ratio 3:1.In M2 almost

all the plants were tall mutants excepting one or two cases of normal plants. No much noticeable variation in chromosome anomalies was recorded. Segregation behavior indicates that this is due to a single gene of recessive nature and pollen sterility was also recorded.

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