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Research Article

INDUCED CRUMPLE LEAF MUTANT IN JUTE (*Corchorus olitorius* L.Variety-JRO-632)

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Abstract: *Presoaked seeds of jute (Corchorus olitorius L.Variety JRO-632) were treated with 2% Ethylamine (EA) for 24 hours. Crumple leaf mutants were screened in M3 in contrast to the normal looking fruit plants. A number of yield component parameters were recorded including plant height, basal diameter, plant spread, root length, pod per plant, seeds per pod, pod length/breadth ratio, number of primary branches, number of secondary branches, leaf angle, branching angle, first flowering date, 100% flowering date, total duration, percentage of pollen sterility, and weight of 100 seeds which were found to vary from the control plant. Chromosome analysis revealed aberrations like stickiness, fragmentation, polyploidy, clumping, laggard and bridge formation etc. Multiple cropping has been possible with the availability of irrigation water and a number of early maturing varieties have introduced in case of various other crops. There should be a suitable crumple leaf mutants of jute also to be best fitted in the multiple cropping patterns. With this objective in view the work on induction of mutation with chemical mutagen Ethylamine (EA) was initiated.*

Keywords: *Corchorus olitorius* L., chromosome, crumple leaf mutants, Ethylamine, 24 hours. Concentration 2%.

1. 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 was reported through genetic manipulation by application of ionizing radiations (Kundu, 1944, Ghosh, 1969, Hossain, 1970 and Basu, 1967, Chatterjee and Jana, 1974, Nayar, 1979). However. Chemical mutagenesis in jute is still lacking although considerable work 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.

2. 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 2% Ethylamine for 24 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 crumple leaf 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.

3. RESULTS AND DISCUSSION

The present investigation indicates that some crumple leaf mutants were screened after M3 generations. The rosette leaf 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 crumple leaf 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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