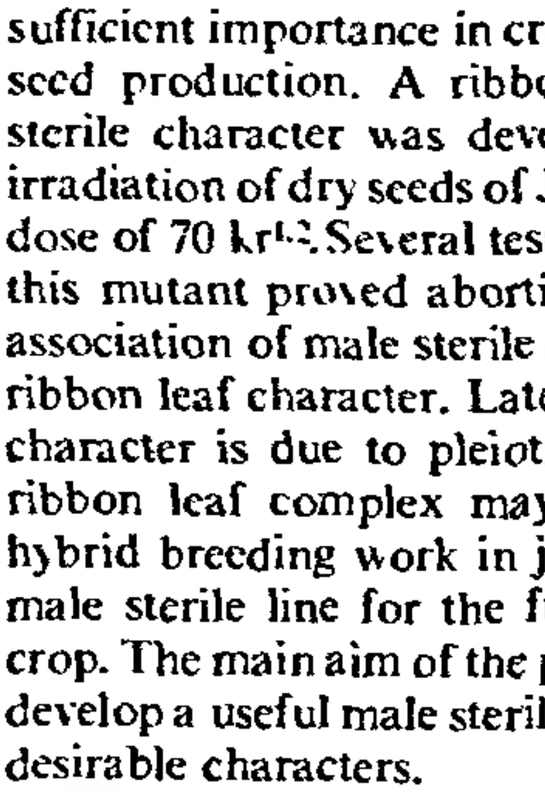
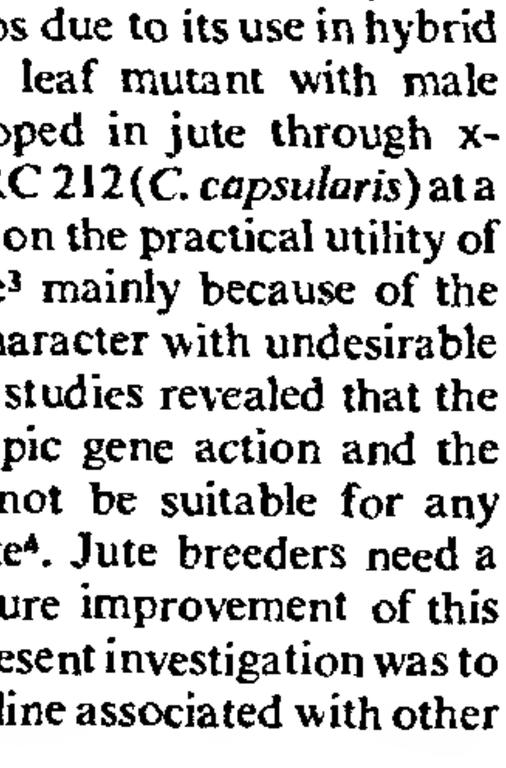
A NOTE ON THE MALE STERILITY IN JUTE (*C. CAPSULARIS* L.)

M. ROHMAN
Jute Agricultural Research Institute,
Barrackpore 743 101, India

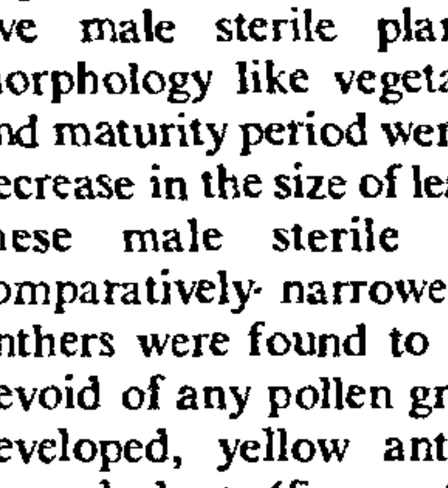
THE character of male sterility has recently gained sufficient importance in crops due to its use in hybrid seed production. A ribbon leaf mutant with male sterile character was developed in jute through x-irradiation of dry seeds of JRC 212 (*C. capsularis*) at a dose of 70 kr[1,2]. Several tests on the practical utility of this mutant proved abortive[3] mainly because of the association of male sterile character with undesirable ribbon leaf character. Later studies revealed that the character is due to pleiotropic gene action and the ribbon leaf complex may not be suitable for any hybrid breeding work in jute[4]. Jute breeders need a male sterile line for the future improvement of this crop. The main aim of the present investigation was to develop a useful male sterile line associated with other desirable characters.

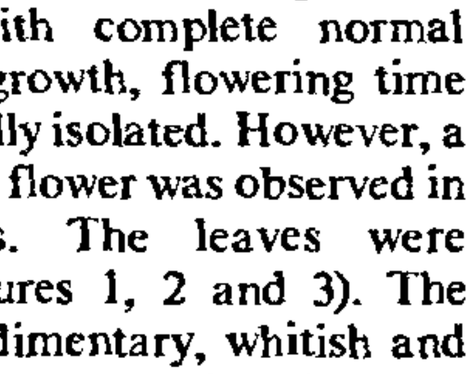
The sun dry F_2 hybrid seeds of the cross between ribbon leaf male sterile and JRC 212 were treated with X-rays at 80 kr and were grown for F_2X_1 and F_3X_2 generation in the experimental farm of this Institute. Efforts were made to locate a desired type from the population of F_3X_2 generation. From this population five male sterile plants with complete normal morphology like vegetative growth, flowering time and maturity period were finally isolated. However, a decrease in the size of leaf and flower was observed in these male sterile plants. The leaves were comparatively narrower (figures 1, 2 and 3). The anthers were found to be rudimentary, whitish and devoid of any pollen grain as compared to the well-developed, yellow anthers with fertile pollen in normal plants (figures 4, 5 and 6). These male sterile plants were again crossed with original parent JRC 212 and the progeny was found to be completely female fertile. Further researches on genetical and other aspects are in progress. In jute, this is perhaps the first report of male sterility associated with desirable characters.

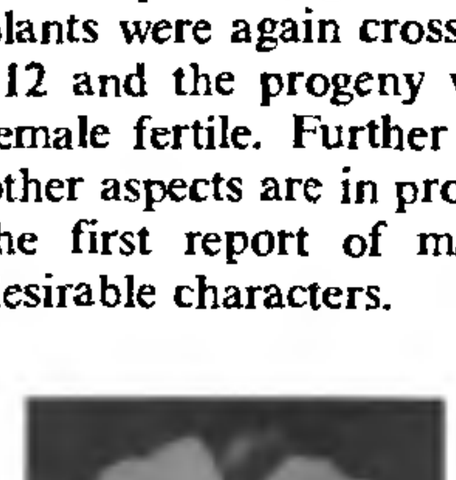




Figures 1–3 **1.** A branch of normal plant of jute. **2.** A ribbon leaf male sterile mutant. **3.** A narrow leaf male sterile plant.







Figures 4–6. **4.** A flower of normal plant, **5.** A flower of ribbon leaf male strile mutant. **6.** A flower of narrow leaf male sterile plant.

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