Jute :- 302 - Nacem PB.Gr sb (1 Sohil Sulman

Jute is the cheapest and the most important of all the textile fibres next to cotton and is used extensively in the manufacture of different types of packaging materials for various agricultural and industrial products. It was a monopoly crop for India till it was divided.

Early History :-

Jute fibre is obtained from the barks of the two cultivated species of the genus "Corchorus" viz., C. capsularis and Corchorus olitorius of the family Tiliaceae. Jute is commonly called "pat" or "nalita" in the central and western regions of Bengal. In English, Jute is known as "Jew's mallow"

The tender shoots of both species of Jute, particularly of C. olitorius are known to be used as vegetable or pot-herb in Syria, India, Egypt and other places since very early time. The origin of wild jute is not definitely known.

Distribution of Species of Corchorus :-

The genus Corchorus includes more than 40 species. These species are mostly in the tropical regions of Africa, America Australia, China, India, Ceylon, Japan, Java etc. The larger no. of species found in Africa. In India only eight species are found. Only two species are cultivated while the remaining are wild species.

Regarding origin of two cultivated species, according

To Vavilove, there are 12 main centres of origin of plants and the centre of greatest diversity is the centre of origin of a cultivated species.

It has been found that the two cultivated species of jute C. capsularis C. olitorius do not cross, showing that they are not closely related. Unfortunately, in the genus Corchorus, the chromosome number of the most of the species have not yet been determined.

Discription of two cultivated species:-

Though the two species from which jute fibre of commerce is obtained are similar in general appearance, the leaf of C. olitorius has a shining upper surface and a rough under surface and almost tasteless, when chewed. The leaves of C. capsularis contain a bitter glucoside and taste bitter on chewing. The flowers of C olitorius are larger than those of C. ~~olitorius~~ capsularis. The fruit of capsularis is roughly globular while that of C olitorius is cylindrical. Olitorius seeds are smaller than those of capsularis. C olitorius also tends to grow taller (10-15 feet) than C. capsularis (5-12 feet). In C. capsularis, seeds 7 to 12 in two rows in each locule, 35 to 50 in each fruit, while in C olitorius, Seed 25 to 40 in single row in each locules, 127 seeds in each fruit.

The quality of fibre:- The fibre of olitorius is frequently finer, softer, stronger and more lustrous than that of capsularis. The fibre of capsularis is whitish and therefore, called

Jute. The obtained fibre is either yellowish, reddish grayish colour depending upon the nature of retting water.

Breeding :- Jute Breeding Technique :-

1) Selection :- As jute is a bast fibre crop harvested long before the seeds mature, both of fibre of good quality and seed cannot be obtained from the same plant. If it is harvested at the proper stage of fibre maturity, no seed can be obtained. If fibre extraction is delayed till seed maturity, the plant become dry, does not ret properly & fibre extraction is unsatisfactory. It is necessary to base the criteria for selection on morphological characters. In this connection a no. of plant characters were evalited for selection. Two such character in jute viz. plant height and stem diameter at the base have been found to be very high positively correlated with the yield of fibre. Greater the height and greater the thickness of stem, the larger is the out turn of fibre. Height appears to have higher correlation with fibre yield in olitorius than capsularis. Based on height and stem diameter primary selection are made in the bulk sample plot.

2) Testing of breeding material :- Primary selections are tested in replicated progeny row trials in the first year and 2ndly selections are made in them. For Secondary selections, an equal no. of plants are selected from all the replications on eye judgement. All the plants in the plot, except the selected plants are harvested, retted and fibre extracted from them. The yield performance of the progenies are analysed. In the 2nd

(4) year; the selections are tested in compact family blocks which enable the sister progenies to be grouped together into families. Testing and shifting of selections are continued in the compact family blocks layouts till the genetic variability has fallen low. Then progenies of such families are bulked up as a strain. The promising strains are ready for full-scale varietal trials.