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Studies on the effect of methanol treatment on seed germination and yield component of mesta

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SUMMARY

A field experiment was conducted during *kharif* season of 2004 with a view to study the effect of methanol treatments for different hours of seed imbibitions having six varieties of mesta, a fibre yielding crops. Results reveal that the yield attribute was significantly positive correlated with plant height verses basal diameter of stem. It has been found that plant height is directly correlated with positive increment in each treatment. When the treatment was made and duration of imbibitions was more, correlation value was higher. The germination of seeds show a great problem in case of mesta. To overcome this germination problem in mesta seeds a series of methanol treatment (70%) was applied for 1hr, 3hrs, 5hrs, respectively. Four treatments including control set out of six varieties *i.e.* total 24 treatments were allowed for the purpose. Various metrical characters like plant height, number of leaves, basal diameter, number of branch, fiber weight, days to 50% flowering were studied. Co-relation and co-efficient of six cultivars was estimated in this experiment so that we could obtaine a satisfactory result on it.

Key words : Methanol, Yield component, Correlation and coefficient, Seed germination, Mesta.

Mesta (*Hibiscus cannabis* L) is grown for its soft fiber chiefly in Thailand, Mexico, U.S.S.R, Cuba, and other African countries. But it is very much neglected in India, Pakistan and other Asiatic countries. But it has been grown in its native habitat of Thailand, India and Pakistan since ancient time. After discovery of its commercial utilities in paper industries Indian Council of Agricultural Research has under taken this crop in India. The annual production of Kenaf fiber is nearly 10,00000 metric tons in the world.

Kenaf, sometimes called bimli-jute is a member of family Malvaceae (Harrer, A.E. 1952). The plant grows up to 12 feet or more with deeply lobed leaves. The yellow flowers with red centers open for 6 to 8 hrs. and then close. The petals drop off later. The flowers are largely self-pollinated. Kenaf is a short day annual plant (Walker and Sierra, 1950) and most varieties bloom and produce seed only when the day length is less than 12.5 hrs. Some varieties are photo-sensitive (Day neutral).

Kenaf is harvested for fiber when the first flower opens with a harvested- ribboner equipped with crushing roller. The retting work is done in trunks where bacterial action frees the fiber from adhering substance. The ribbons of long bast fiber is then cleaned in burnishing machine and dries (Byron and Whitemore, 1961). Fiber yields as high as 2,000 pounds per acre obtain under good growing conditions.

The seed requirement for Mesta plantation is 8 pounds per acre in rows. Seed requirement may be reduced if the seed germination is assured. The present investigation was to standardize the seed germination and to assess the effect of methanol treatment in cultivars of Mesta.

MATERIALS AND METHODS

The experiment was conducted at the Crop Research Farm under the Department of Botany, university of Burdwan, West Bengal, India during the month of May 2004 to January 2005.

Six genotypes (AMV-1; AMV-2; AMV-3; AMV-4; HS-4288; HS-7910) of Mesta were procured from the Central Research Institute of Jute and Allied Fibre (CRIJAF), Nilgunge, Barakpore, Kolkata..

Before sowing the seeds of six genotypes were superficially sterilized with 0.01% Mercuric Chloride ($HgCl_2$) for 10 minutes followed by rinsing through distilled water. This was performed on 28th May, 2004. There after each genotype was treated with methanol for 1hr, 3hrs, 5hrs, respectively.

The sterilized seed materials followed by respective seed soaking treatment of each genotype was sown in the field following Randomized Block Design (RBD) layout with four replications having plant spacing 20 x 50 cm. Proper uniform agronomic care was taken for the experimental crop.

In each replicated plot 30 plants were sown for individual treatment. The crop was harvested in January, 2005. Desired metrical characters were studied and data

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