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Fibre yield and fibre weight of mesta varieties as influenced by spacing and nutrient sources

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ABSTRACT

Mesta is one of the important crops which provide fibre, forage and paper pulp. Field experiment was conducted at 19E block at field unit GKVK, University of Agricultural Sciences, Bangalore which is located at a latitude of 12058' north, longitude of 7703' east and at an altitude of 930 m above mean sea level in Eastern dry zone (zone 5) of Karnataka to study the fibre weight and fibre yield of mesta as influenced by varieties, spacing and nutrient sources. The fibre weight per plant differed significantly due to different plant spacing, varieties and nutrient sources. Among the varieties, variety HS-108 recorded significantly higher fibre weight per plant (3.54 g) than variety AMV-4 (2.99 g). Significantly higher fibre weight per plant was recorded under 45 cm x 10 cm spacing (3.40 g) than 30 cm x 10 cm (3.13 g). Further, application of 5 t of FYM per ha along with 40:20:20 kg NPK per ha fertilizer registered higher fibre weight per plant (3.68 g) compared to 100 per cent N equivalent through FYM (2.83 g). The fibre yield differed significantly due to different plant spacing, varieties and nutrient sources. Among the varieties, variety HS-108 recorded significantly higher fibre yield (948 kg/ha) than variety AMV-4 (850 kg/ha). Significantly higher fibre yield was recorded under 45 cm x 10 cm spacing (923 kg/ha) than 30 cm x 10 cm (875 kg/ha). Further, application of 5 t of FYM per ha along with 40:20:20 kg NPK per ha fertilizer registered higher fibre yield (962 kg/ha) compared to 100 per cent N equivalent through FYM (803 kg/ha). The interaction effects between varieties, plant spacing and nutrient sources were found to be significant

Key words : Mesta, Variety, Nutrient, Fibre, Spacing

INTRODUCTION

Mesta is one of the important crops which provides fibre, forage and paper pulp and has broadened our agricultural diversity to reduce pressure on forest resources. It is one of the important bast fibre crops which stand next to jute in production. It is the nearest ally of jute and plays an effective role in supplementing the short supply of jute industry. In recent years, this crop is gaining the attention of research workers since it is also used as a raw material in the paper industry substituting bamboo and eucalyptus whose supply is becoming scarce day by day. Mesta fibre is used as an alternative to jute fibre or for blending with jute in the manufacture of jute goods *viz.*, cordage, sackings, hessains, canvas and rough sack cloths. It is also used for making ropes, twines, fishing nets etc. The stalks are used in making paper pulp, structural boards, blends with wood pulp and for thatching huts. In recent years, it has been proved that the crop could be allowed to grow upto seed setting stage and the sticks after seed collection can be utilized for pulp production to manufacture all types of paper including newsprints. Its seed contains 18 to 20 per cent oil, which can be directly used in soaps and other industries. The crop possesses fleshy red calyces, which are used for preparing natural dyes, jam, jellies, pickles etc. and the leaves for preparing pickles and also as leafy vegetable. It also acts as a natural fibre substitute for fibre glass. It serves as raw material for automobile dash boards, carpet padding and is also used in moulded plastics.

MATERIALS AND METHODS

The experiments was conducted in 19E block at field unit GKVK, University of Agricultural Sciences, Bangalore which is located at a latitude of $12^{0}58'$ north, longitude of $77^{0}3'$ east and at an altitude of 930 m above mean sea level in Eastern dry zone (zone 5) of Karnataka. The soil of the experimental site was red sandy loam. The soil was near neutral in pH with low organic carbon content. The soil was also found to be medium in available nitrogen, available phosphorus, and available potassium content.

The experiment comprised of 16 treatment combinations consisting of two varieties, two spacing trails and four nutrient treatments.

Treatment details:

Replication : Three
Design : Split-split plot design
Main plot treatment: varities (V)
1) AMV-4 (V_1)
2) HS-108 (V_2)
Sub plot treatment : Plant spacing (S)
1) 30 cm x 10 cm (S_1)
2) 45 cm x 10 cm (S_2)
Sub-sub plot treatment: N sources (N)
1) 40:20:20 kg NPK/ha (N_1)

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