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Propagation Techniques in Sponge Gourd

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ABSTRACT

The sponge gourd is native to Indian sub-continent. The fruits of sponge gourd are having smooth and black seeds. It is commercially propagated by seeds. Inadequate germination of seeds is one of the important constraints in sponge gourd. The seeds should be soaked in water for one day before sowing enhances germination. An average of 1.5-2.0 kg of seeds is required for one acre area. At present, the seedlings are raised in plug trays for transplanting. Foliar spraying of Ethrel @ 250 ppm at 2-4 leaf stage favours the production of female flowers. Generally, the seed yield will be 25 g/fruit during the summer season and 10 g/fruit during the rainy season. The certification procedures issued by seed certification department should be followed. The fully developed fruits are harvested at 65 days after anthesis and the seeds are separated by opening the pods. Fruits may be stored as such till next sowing. The dried fruits are cut for collection of seeds. These seeds are dried for one or two weeks in a cool, dry and dark place. The seeds can be viable up to four years.

INTRODUCTION

Sponge gourd (*Luffa cylindrica* roem syn. *aegyptiaca*) is raised during spring, summer and rainy seasons. This is indigenous to Indian sub-continent. It is an annual climber with 30-60 cm in

length, cylindrical in shape, soft rind with interior white mesocarp. The small young fruits are used for cooking and preparation of soup or stew. The over matured fruits developed fibre, these fibres are exposed to colour removal and dried for further utilization. This fibrous sponge is used for cleaning of bathrooms, packing material for delicate items, preparation of handicrafts and filters. These spongy materials are used in marine steam engine filters, door mats, table mats, mattress, or shoulder pad stuffing and for absorbing sound. These fruits dispersed smooth and black seeds. Sponge gourd is commercially propagated by seeds.

NURSERY

Inadequate germination of seeds is one of the important constraints in sponge gourd. The seeds should be soaked in water for one day before sowing enhanced the germination (Davis, 1996). The seeds exposed to the temperature ranged between 30 to 35°C to break the seed dormancy. Then seed coat is damaged by scarification treatments and this will improve the germination. The wet sand is very much suitable medium for better germination. The seeds are directly sown on the ridges. The ridges are enriched with well decomposed farm yard manure for supplying wide range of nutrients. The spacing between two rows will be 5 feet to 10 feet and distance between one to another plant in the row is 2 feet to 3 feet. An average of 1.5-2.0 kg of seeds is required for one acre area. Normally 2-3 seeds are sown per pit. At present, the seedlings are raised in plug trays. Coco-peat is commonly used as a growing medium. The fibrous roots of protray seedlings are not damaged during transplanting (Singh *et al*., 2007). Two to three leaved seedlings are transplanted in the main field.

AFTER CARE

Well drained deep sandy loamy soil is ideal for cultivation of sponge gourd. Trellises with a height of 1.8m are required for the climbing vine. Staking was done by using vertical strings at 0.9m to 1.2m spacing. The flowering and fruiting initiated at 40-45 days after sowing. For increasing fruit set, bee hives are installed in the field during flowering phase. The fertilizers should be applied based on soil test values. Foliar sprays of ethrel @ 250ppm at 2-4 leaf stage favours the production of female flowers. Weekly irrigation may be given during spring - summer season. Generally, the seed yield will be 25 g/fruit during the summer season and 10 g/fruit during the rainy season.

FIELD AND SEED STANDARDS

The off types should be uprooted before flowering to avoid any cross-pollination. The certification procedures issued by seed certification department should be followed. The seed standards are fixed at 99% genetic purity, 60% germination (minimum) and 7% moisture content for both foundation and certified seeds respectively (Wehner and Wellington, 1997). Shape, colour, stripe, neck etc., are the main features used for effective rogueing of mixtures.

SEED EXTRACTION AND HANDLING

The matured dry fruits are collected at 65 days after anthesis, at that time the seeds rattle inside the shell. Seeds are separated by opening the pods. Fruits may be stored as such till next sowing (Rajan and Markose, 2007). Under dry method, the dried fruits are cut from one side and the seeds come out of the fruit (Davis, 1996).

STORAGE

The extracted seeds should be dried for one to two weeks in a cool, dry and dark place. The viability of the seeds is maximum four years.

CONCLUSION

Foliar application of growth regulator Ethrel @ 250ppm at 2-4 leaf stage improves the female flower production. The certification procedures laid out by the licensing authority should be followed without any deviation to get good quality seeds.

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