
Propagation Techniques for Cluster Bean

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ABSTRACT

Cluster bean is cultivated for vegetable, extraction of cum, fodder and green manure in the dry tracts of India. Being a self-pollinated crop, hybrid seed production is not followed in cluster bean. Sexual propagation by seeds is the only method followed in cluster bean. Sowing of seeds during July - August is most ideal for seed production. The routine cultural operations followed in commercial vegetable production also applicable to the seed crop. However, the standards recommended by regulating agencies should be followed. The plants infected with bacterial blight should not be removed periodically to get disease free quality seeds. From, one hectare area, ten quintals of seeds will be obtained. The harvested seeds should be graded by using prescribed sieves and graded seeds should be treated with fungicides and botanicals. These treated seeds can be stored up to two years in moisture proof containers with eight per cent moisture.

INTRODUCTION

Cluster bean is botanically known as *Cyamopsis tetragonaloba* L. Taub. and belongs to the family Fabaceae, which is grown in several dry tracts of Indian sub-continent. Cluster bean is cultivated for immature fruits as vegetable. In some places, it can be raised to enrich soil nitrogen status as green manure crop. Certain varieties of cluster bean are suitable for gum extraction. The green fruits are having more amount of protein as similar to French beans

(Choudary, 2000). Basically, cluster bean is an autogamous plant and hybrid seed production is not possible. The seed propagation is the only option followed in cluster beans.

SEED EXTRACTION AND HANDLING

The cultural operations for raising seed crop are almost same for the crop sown for commercial crop cultivation. The *kharif* season is ideal for seed production in cluster bean. The seeds are treated with Carbendazim 50% WP @ 2 g/kg to manage the fungal infections on seeds. Around, ten kilograms of seeds is required to sow in one hectare area. The field must be ploughed by 3-4 times and FYM @ 25 t/ha is incorporated at the time of last ploughing. Usually, the seeds are dibbled @ 2 seeds / hill on the edges of the ridges at a spacing of 45x20 cm. The shallow hoeing should be given by 2-3 times to manage the weed population. Earthing up of the plants can be combining with top-dressing and irrigation. A basal dose of 25:50:25 kg NPK/ha is applied during prior to sowing and top dressing will be done with 25 kg N/ha. Foliar application of DAP at two per cent is sprayed during 50% flowering. The land should be irrigated immediately after sowing of seeds and life irrigation should be provided at three days after sowing. Subsequently, the crop is irrigated once seven to ten days depends upon soil and climatic conditions.

From one hectare area, 1000 kg of seeds can be produced under rainfed situations. The dried fruits are not split at any cost. Hence, one time harvest with complete uprooting of whole plants is recommended and same may be threshed to separate the seeds. Perfect way of threshing should be followed to maintain the quality and viability of the seeds (Parthasarathy, 2003). The seeds are graded by using 10/64" round perforated metal sieve or BSS 6 x 6 wire mesh sieve (4.2 mm). The seed certification standards prescribed by certification agencies should be followed to get good quality seeds.

CROP PROTECTION

Need based plant protection measures should be carried out. The most serious limitation in cluster bean production is the blight caused by the bacteria *Xanthomonas cyamopsidicola*. This disease is seed and soil borne. Mostly this disease incidence is high in irrigated humid tracts. During early stage of infestation, minute translucent water soaked spots developed on leaves. Subsequently, the interveinal tissues are turned to yellow and infected tissues were dried to various sizes and shapes. Continuous incidence of this blight leads to brown discolouration of the vascular system on the stems and the plant may break in this region. The seeds should be collected from disease free plants are used for seed production. Crop rotation should be followed with disease resistant varieties of cluster bean to manage this disease.

STORAGE OF SEEDS

The seeds are dried at eight per cent moisture and mixed with a combination of carbendazim 50% WP and halogen formulation (bleaching powder + CaCO₃ + Arappu leaf powder @ 5:4:1) @ 3 g/kg of seed in water proof bags stored for two years.

CONCLUSION

Seed production in cluster beans is one of the best ventures to get more profit under rainfed situations duly following the field and seed standards recommended by the certification agencies.

REFERENCES

Choudhary, B. 2000. Vegetables. National Book Trust, New Delhi, India.

Parthasarathy, V.A. 2003. Cluster bean. In: Vegetable crops. Eds. Bose, T.K., J. Kabir, T.K. Maity, V.A. Parthasarathy and M.G. Som. Naya Udyog, Kolkata. p. 251-262.