



## Influence of clipping and PGR's on seed yield and its quality in Cluster bean cv. PUSANAVBAHAR

B.N. SATODIYA, H.C. PATEL, A.D. PATEL, M.Y. SAIYAD AND H.N. LEUA

See end of the article for authors' affiliations

Correspondence to:

**M.Y.SAIYAD**

Department of Horticulture  
B.A. College of  
Agriculture, Anand  
Agricultural University,  
ANAND (GUJARAT)  
INDIA

### ABSTRACT

A field experiment was conducted to find out the influence of clipping and PGR's on seed yield and its quality on cluster bean cv. Pusa Navbahar with three decapitation treatments and three plant growth regulators each at two concentrations with water spray as control in factorial randomized design with three replications at Main Vegetable Research Station, Anand Agriculture University, Anand during summer seasons of 2008-09 and 2009-10. The results observed that clipping of terminal bud at 70 DAS significantly recorded maximum seed yield parameters and seed yield with better quality. Plant growth regulators treatments also recorded significant results. Application of thiourea 500 mg/l at flowering stage recorded maximum yield parameters as well as seed yield (1030.36 kg), which was at par with GA<sub>3</sub> 20 ppm. Combinations of clipping at 70 DAS and spraying of thiourea 500 mg/l registered significantly higher values for all seed quality parameters except germination percentage.

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Cluster bean [*Cyamopsis tetragonoloba* (L) Taub.] locally called as guar is an important annual legume vegetable crop. It can be grown on soils of low fertility as well as drought prone arid and semi- arid area of the tropics and sub tropics. Cluster bean is grown for its young tender green immature pods, which are used as a nutritive vegetable. It is also used as a nutritive fodder for cattle and as a green manure it improves soil fertility status and texture. In Gujarat cluster bean is grown about 27715 ha of land with the production of 219244 MT green pods during the year 2009-10 (Anon, 2010). Pusa Navbahar is most popular variety for vegetable purpose. Pods are about 15 cm in length, tender, green in colour and are of better quality. It can be cultivated during both summer and rainy seasons. Due to the wide spread cultivation and nutritive important in our daily life demand for seeds requirement is increasing day by day but availability of pure and good quality seeds is not satisfactory. However, the seed yield of cluster bean is low. Various attempts have been made to increase better quality seed but results are not satisfactory.

The present study was aimed to improve the seed yield with better quality by clipping and spraying of plant growth regulators.

### MATERIALS AND METHODS

An experiment comprising 3 levels of clipping (no-clipping, clipping at 70 DAS and at 85 DAS) of shoot up to 5 cm and 3 growth regulators each of two concentrations (NAA- 20 and 40 mg/l, GA<sub>3</sub> 20 and 40 mg/l and thiourea 500 and 1000/l) along with water spray as a control in Factorial Randomized Block Design replicated thrice was conducted at Main Vegetable Research Station, Anand Agriculture University, Anand during summer season of 2008-09 and 2009-10.

The yield parameters were measured at harvest by randomly selecting five plants from each net plot. Seed yield from each net plot was weighed and then, it was calculated for hectare. For quality parameters viz., 1000 seed weight was measured by counting the 1000 seeds at random and weighing them in electronics balance. Seed germination percentage and seedling vigour were assessed as per the ISTA procedure (Anonymous, 1985) at 10<sup>th</sup> day.

### RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :