

Research  
Paper

## Influence of herbal pelleting on physiological and yield attributes in redgram [*Cajanus cajan* (L.) Millsp.]

K. SUJATHA, K. RAMAMOORTHY AND K. SIVASUBRAMANIAM

See end of the paper for authors' affiliations

Correspondence to :

**K. SUJATHA**

Department of Seed Science and Technology, Agricultural College and Research Institute, MADURAI (T.N.) INDIA

Email : sujathakvk@gmail.com

### ABSTRACT

An experiment was conducted to gain information on the field performance of pelleted seeds using botanical viz., vitex and calotropis leaf powder with acacia and maida gum as adhesive in redgram cv. APK 1. Seed pelleting with *Calotropis* (100 g/kg of seeds) using maida gum (15 %) followed by drying recorded higher physiological and yield parameters.

Sujatha, K., Ramamoorthy, K. and Sivasubramaniam, K. (2011). Influence of herbal pelleting on physiological and yield attributes in redgram [*Cajanus cajan* (L.) Millsp.], *Adv. Res. J. Crop Improv.*, 2 (2) : 174-177.

**KEY WORDS :** Botanicals, Pelleting, Dry weight, Adhesive, Relative growth rate, Leaf area index, Redgram

The successful establishment of the crop mainly depends on achievement of desired population through high probability of successful establishment of each seed planted. Seed pelleting is the process of enclosing a seed with a small quantity of inert materials a bioactive substance just large enough to produce a globular unit of standard size to facilitate precision planting. The pelleted material creates natural water holding potential through absorption and provides nutrients to young seedlings. It also reduces the problem of thinning, gap filling and seed dressing chemicals are required in low quality. Redgram is raised mostly under rainfed condition. Poor fertility status and inadequacy of soil moisture can adversely impact productivity. To overcome these environmental and management crisis, which delay or prevent germination and establishment of seedlings, pelleting provides opportunity to package effective quantities of required materials so that they can positive influence the seed or soil at seed- soil interface. Against this background, the present study was, therefore, aimed to identify the efficacy of using herbal powders for pelleting on growth and yield parameters in redgram.

### RESEARCH PROCEDURE

Air dried (3 days) leaves of calotropis (*Calotropis gigantea*. L.) and vitex (*Vitex negundo*) herbs were

powdered and sieved through 60mm sieve and used for seed pelleting. Fresh acacia gum (10, 20 and 30 %) and maida (5, 10 and 15 %) were used as binding agents.

Graded seeds (12/64 round perforated sieves) of redgram cv. VBN 1 obtained from National Pulses Research Center, Vamban, Pudukottai, Tamil Nadu were pelleted. For every 100 g of seeds, 10 g of dry herbal powder in each of *Calotropis* and *Vitex* separately was used for coating with acacia and maida gum using different concentrations and the pelleted seeds were shade dried. The field experiment was carried out at Agricultural College and Research Institute, Madurai (90°5' North and 78°5' East and altitude of 147 MSL). A spacing of 30 x 10 cm was adopted with other recommended crop management practices in a randomized block design replicated thrice. The experiment was conducted during *Kharif* and *Rabi* season, 2008 with a plot size of 2x2 m<sup>2</sup>. Observations on dry weight (g) (drying at 80° C for 16 h), leaf area index, leaf area duration (Power *et al.*, 1976), relative growth rate (Williams, 1946), pod weight plot<sup>-1</sup>(g), grain yield per plot<sup>-1</sup> (g) and grain yield (kg ha<sup>-1</sup>) were recorded on 60 days after sowing. Individual observations, ten plants per plot taken at random were pooled. Mean data were analyzed statically after Snedecor and Cochran (1961).