

## Effect of fruit load on quality and seed yield in okra (*Abelmoschus esculentus* L. Moench.) under temperate conditions of Kashmir valley

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### ABSTRACT

Studies were carried out during *kharif* 2005 and 2006 to assess the influence of fruit load in okra cv. PUSA SAWANI on seed quality and yield. Data on fruit and seed characters was recorded. Results of germination and 100 seed weight indicated that seeds obtained from treatment T<sub>3</sub> (retention of first 10 fruit) showed maximum germination and seed weight. The fruit length (17.35) was found significantly higher with treatment T<sub>1</sub> (retention of first 6 fruits). Treatment T<sub>3</sub> (retention of first 10 fruits) recorded highest seed yield 26.35q/ ha which was followed by 23.60 q/ ha which was recorded by control (no removal of fruits)

**Key words :** Fruit load, Okra, Quality, Seed yield

Okra (*Abelmoschus esculentus* L. Moench.) is one of the most widely grown vegetable crops from tropical to sub-tropical and warmer regions of temperate climatic zones of the country. Seed is the most critical input that grossly determines expected returns from all other agricultural inputs. Hence, there has been growing demand for production and distribution of quality vegetables seeds. Ability of seeds to produce more number of normal and vigorous seedlings depends on proper seed filling and maturation because the competition for assimilates between fruits and within fruits distresses seed set and development (Bertin, 1995). The optimum stage of harvest influences the seed germinability and vigour. The stage after physiological maturity at which the seed is harvested affects the per cent germination and vigour of seeds. Usually, distal fruits get less time to mature and often they are subjected to aberrant high temperatures, untimely rains and severe pest and disease infestation, which result in more dead or hard seeds and less vigorous seedlings untimely reducing the overall germinability (Getzin, 1983).

Since available literature on influence of fruit load on seed yield and quality in this region is limited, in the present study, evaluation of yield and quality variation in developing okra seeds due to retention of fruits.

### MATERIALS AND METHODS

The seed crop of okra cv. PUSA SAWANI was taken up at Vegetable Research farm, division of Olericulture SKUAST, Shalimar during *kharif* 2005 and 2006 in 3 replicates. Experiment was laid down in completely

randomized design with five treatments viz., T<sub>1</sub>= Retention of first 6 fruits, T<sub>2</sub>= Retention of first 8 fruits, T<sub>3</sub>= Retention of first 10 fruits, T<sub>4</sub>= Retention of first 12 fruits, T<sub>5</sub>= control (no removal of fruits). Seeds were sown in plot size of 2.4 x 2.1m with the spacing of 45 x 30cm. The observations were recorded from randomly selected 10 competitive plants from each treatment and replication. The observations related to growth and yield were computed as suggested by Panse and Sukhatme (1978) to test the significance. The per cent germination was estimated as per ISTA (1999).

$$\text{Germination percentage} = \frac{\text{Number of normal seedlings}}{\text{Total no. of seeds germinated}} \times 100$$

### RESULTS AND DISCUSSION

The results of the studies depicted clear-cut effect of retention of fruits on germination potential and yield. Fruit length and number of seeds/ fruit were significantly affected by the fruit load. Maximum fruit length of 17.35cm was recorded with treatment T<sub>1</sub> (retention of first 6 fruits) and it was followed by treatment T<sub>2</sub>. Treatment T<sub>2</sub> and T<sub>4</sub> were at par. As far as number of seeds is concerned it was recorded maximum with treatment T<sub>3</sub> (retention of first 10 fruits) 49.77 followed by 47.97 which was recorded by treatment T<sub>1</sub>. Similar results were also reported by Iremiren *et al.* (1991) and Velumani and Ramaswamy (1977). Seed yield per plot and hectare varied significantly with the retention of fruits. Highest seed yield of 26.35q/ ha was recorded with T<sub>3</sub> (retention of first 10 fruits) followed by 23.60q/ ha which