

Effect of seed treatment with gibberellic acid and maleic hydrazide on growth, seed yield and quality of okra cv. PARBHANI KRANTI

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ABSTRACT

An experiment was conducted in randomized block design with four replications, in all there were eight treatments *i.e* 50 ppm, 100 ppm and 150 ppm of gibberellic acid, 20 ppm, 40 ppm and 80 ppm of maleic acid, distilled water soaking and control or without soaking, seeds were soaked for 24 hours and sown directly in the field at 45cm x 30cm spacing. Regarding germination and vegetative characters, *viz.*, plant height, number of internodes and length of internodes, seed treatment with gibberellic acid at 50 ppm concentration exhibit statistically maximum value amongst all other treatments. Whereas in respect of number of branches and number of leaves per plant, seed treatment with maleic hydrazide at 80 ppm exhibit significantly maximum number over remaining all other treatments. As concerned to reproductive and quality parameter *viz.*, length of dried pod, weight of seeds per pod, yield per plant and yield per plot and weight of 100 seeds, the treatment GA at 50 ppm showed significantly superior performance over remaining all other treatments.

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Okra is one of the most important and popular vegetables in Indian diet. The demand of okra is increasing day by day being a short duration, high yielding, and more profitable crop. Use of plant growth regulators has become one of the most important tools in the hand of horticulturists to produce maximum yield. Recently wide range of techniques of applying plant growth regulators are in practice. Among them, seed treatment with plant growth regulator is one of the most popular method and has been claimed as the effective tool for improving rate of germination, increase in growth of shoot and root, increasing vegetable growth and seed yield. With this aspect of view, the present investigation was conducted.

MATERIALS AND METHODS

The experiment was laid out in Randomized block design with four replications. In all these were eight treatments.

The details of treatments is given in Table 1.

The experimental field was ploughed once with mould board plough and harrowed thrice to pulverize the soil. The field was then cleaned and levelled. Well decomposed FYM @ 20 cart load per hectare was applied before preparation of beds and it was incorporated uniformly in the soil. All recommended fertilizer doses were applied before and after sowing. GA solution of required concentration was prepared by dissolving weighted quantity of GA in little quantity of 95% ethyl alcohol and

Table 1 : Details of treatments

Sr. No.	Treatments
1. T ₁	Soaking of seeds in 50 ppm GA solution for 24 hours
2. T ₂	Soaking of seeds in 100 ppm GA solution for 24 hours.
3. T ₃	Soaking of seeds in 150 ppm GA solution for 24 hours.
4. T ₄	Soaking of seeds in 20 ppm MH solution for 24 hours
5. T ₅	Soaking of seeds in 40 ppm MH solution for 24 hours
6. T ₆	Soaking of seeds in 80 ppm MH solution for 24 hours.
7. T ₇	Soaking of seeds in distilled water for 24 hours.
8. T ₈	Untreated seeds (without soaking)

GA- Gibberellic acid; MH- Maleic hydrazide

then making the desired volume by adding distilled water to obtain a solution of 50, 100 and 150 ppm strength.

MH solution of required concentration was prepared by dissolving weighed quantity of MH in desired volume of distilled water to obtain the solution of 20, 40 and 80 ppm. These solutions were kept in different beakers for soaking seeds. The seeds of okra were dipped in beakers containing 50, 100 and 150 ppm GA solution and 20 ppm, 40 ppm and 80 ppm MH solution and distilled water. The beakers containing seeds were kept in dark chamber for 24 hours. The seeds were then removed and dried for few minutes on clean cloth. The treated and untreated seeds were immediately sown in main field at a spacing of 45 cm x 30 cm on 25th June 1999. All intercultural operations were carried out as and when needed. The observations on germination of seed, plant height, number of leaves, number of branches, number of internodes, length of internodes, days required to first flowering,