

Research  
Paper

## Effect of seed invigouration treatments on yield and its attributes of soybean

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### ABSTRACT

Present investigation was undertaken at the experimental farm of Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola to study the influence of seed invigouration treatment on two different lots of soybean of variety JS-335 viz., L<sub>1</sub> and L<sub>2</sub> (72% and 57% germination, respectively) with growth regulators and fungicide on yield and its attributes of soybean. Data revealed that 10 ppm IAA+NAA with 6 hrs hydration (T<sub>1</sub>) significantly increased seed yield ha<sup>-1</sup> and other yield attributes. Treatments T<sub>1</sub> (IAA+NAA, 6 hrs hydration), T<sub>2</sub> (IAA+NAA+Thiram) and T<sub>6</sub> (GA<sub>3</sub> 50 ppm+Thiram) recorded significantly higher number of pods/plant, number of seeds/pod, 100 seed weight and less no. of days for 50% flowering than control under study. Lot L<sub>1</sub> was superior to lot L<sub>2</sub> in respect of above attributes. In the present study all the seed invigouration treatments showed increased seed yield.

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**Key words :** Seed invigouration treatments, Yield and yield contributing parameters, Soybean

## INTRODUCTION

Soybean [*Glycine max* (L.) Merrill] is an important pulse as well as oilseed crop as it contains high quality protein (43.20%) and about 20% cholesterol free oil. It contains 21% carbohydrates, 0.69% phosphorus, 0.0115% iron, 0.024% calcium, vitamin A,B,C,D,E,K and all other essential amino acids (Singh and Saxena, 1986). Total area under soybean cultivation in Maharashtra is 24,400 ha and production is 27,078 tonnes of seed. In Vidarbha area under soybean was 6,431 ha with the production of 7,054 tonnes (Anonymous, 2006). The seeds of soybean, if invigourated before sowing with different growth regulators and chemicals shows better performance with respect to yield and its attributes. Seed invigouration treatments have the beneficial effects in increasing yield due to the stimulating effect of growth regulators on number of pods per plant, number of seeds per pod and 100 seed weight. Seed invigouration treatments also increases physiological efficiency and crop productivity. Hence, present study was undertaken to find out the effect of different growth regulators (10 ppm, 50 ppm) along with hydration on yield and its attributes in soybean.

## MATERIALS AND METHODS

The field experiment was conducted at the experimental farm of Department of Agricultural Botany, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. This experiment was carried out in Factorial Randomised Block Design with three replications and seven treatments of soybean cultivar JS-335 with two different lots viz., L<sub>1</sub> (72% germination) and L<sub>2</sub> (57% germination).

The details of treatment are given below.

T<sub>0</sub>- untreated (control)

T<sub>1</sub>- IAA+NAA (10 ppm, 6 hrs hydration)

T<sub>2</sub>- IAA+NAA+Thiram

T<sub>3</sub>- Hydration for 16 hours+Thiram (2g/kg) dry dressing after hydration

T<sub>4</sub>- Hydration for 6 hours+Thiram dry dressing after hydration

T<sub>5</sub>- GA<sub>3</sub> 50 ppm *i.e.* hydration in GA<sub>3</sub> 50 ppm for 6 hours.

T<sub>6</sub>- GA<sub>3</sub> 50 ppm+Thiram *i.e.* T<sub>5</sub>+Thiram

The treatments were applied to each lot as per the treatment details given above. The seed was immersed in weighed quantity of growth regulators, which were firstly dissolved in small quantity of alcohol, then volume was made up with distilled water in order to get the desired