

Effect of different levels of Nitrogen and row spacing on growth and yield of Mustard.

Objective: To find out the best combination of nitrogen & spacing to enhance the growth & yield of Mustard crop.

Introduction:

Indian mustard (*Brassica juncea* L.) is one of the most important winter oilseed crop and India is the third largest mustard producer in the world after China and Canada with 11.12% of world's total production. Mustard is the second most important oilseed crop in India after soybean and



accounts for nearly 20-22% of total oilseeds produced in the country. Mustard seed is grown with a different consumption pattern in the country. Indian mustard is mainly used for extraction of mustard oil while black mustard is mainly used as a spice. Improved varieties play a crucial role in raising the seed yield of the crop. Development of HYV's of mustard has been one of the major concerns of the scientists because use of the improved varieties alone accounts for 15-20% increase in productivity. This is probably because of their altered morphology which results into efficient utilization of water, nutrients and radiation. The fertilizers have played a prominent role in increasing the oil seed production, balanced fertilization is the key to achieve higher production and increase nutrient use-efficiency.

Use of optimal dose of primary, secondary and micro nutrients ensure better and sustainable yield, while correcting some of the nutrients deficiencies.

Treatments:

Crop : Mustard
Variety : VNR 506
Experiment Layout : RBD
No. of Replications : Three
Plot size : 5.0 m X 2.4 m
Date of Sowing : 30/01/2023

Treatment details:

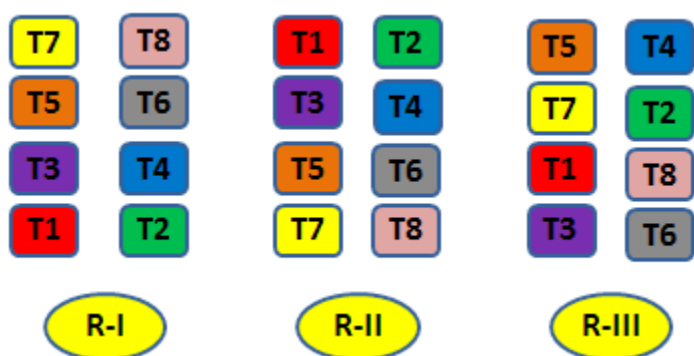
Treatment		Treatment combination
T1	N1D1	30 kg N per ha + 30 x 10 cm
T2	N1D2	30 kg N per ha + 45 x 10 cm
T3	N2D1	60 kg N per ha + 30 x 10 cm
T4	N2D2	60 kg N per ha + 45 x 10 cm
T5	N3D1	90 kg N per ha + 30 x 10 cm
T6	N3D2	90 kg N per ha + 45 x 10 cm
T7	N4D1	120 kg N per ha + 30 x 10 cm
T8	N4D2	120 kg N per ha + 45 x 10 cm

Methodology:

A field experiment was carried out to find out the best combination of Nitrogen & spacing to enhance the growth & yield of Mustard crop during *Rabi* season of 2022 at ASPEE Foundation, Tansa Farm, Palghar, Maharashtra. Four different Nitrogen doses along with two spacing were tried in Randomized block design with three replications.

As per treatments application of Nitrogen doses were applied. Observations of plant height, number of branches per plant, number of siliquae per plant, length of siliquae, no. of seeds per siliquae, test weight and seed yield were recorded periodically.

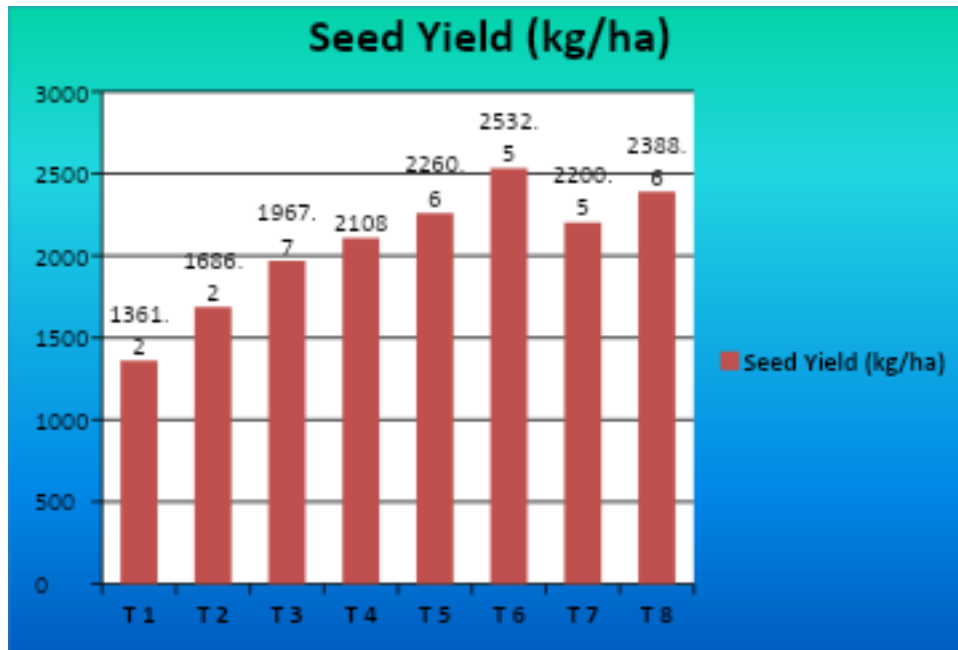
Layout:



Results

The plant growth parameters viz., plant height (108.11 cm) and no. of branches per plant (10.5) were markedly influenced by treatment T6 applied in Mustard. This treatment also shows the higher value for yield parameters like no. of siliquae per plant (21.7), length of siliquae (4.5 cm), no. of seeds per siliquae (14), test weight (6.78 g) and seeds yield (2532 kg/ha).

Graph



Conclusion

From the study of different combination of nitrogen doses and spacing it was confirmed that mustard with variety VNR 506 gave higher returns under north konkan coastal zone of Maharashtra. From the data it is very clear that treatment T6 (90 kg N per ha + 45 x 10 cm) recorded higher mustard yield with variety VNR 506.