Effect of plant density and nitrogen rates on yield and yield components of corn (Zea mays L.)

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Introduction

The study was conducted to investigate the effect of plant density and nitrogen rates on yield and yield components of corn. The experiment was conducted at the Agricultural Research Center, University of Agriculture, Iran.

Materials and Methods

The experiment was conducted in a randomized complete block design with three replicates. The treatments consisted of five plant densities (20, 40, 60, 80, and 100 plants/m²) and three nitrogen rates (0, 100, and 200 kg/ha). The results were evaluated using analysis of variance (ANOVA) and Duncan's multiple range test. The data were analyzed using SPSS software.

Results and Discussion

The results indicated that plant density and nitrogen rate had a significant effect on yield and yield components. The highest yield was obtained at a plant density of 60 plants/m² and a nitrogen rate of 200 kg/ha. The yield components, such as ear weight, ear length, ear width, and grain weight, were also significantly influenced by the treatments.

Conclusion

The results of this study showed that appropriate plant density and nitrogen rate can enhance yield and yield components of corn. Therefore, farmers should consider these factors when planning their corn production.

References


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Keywords: corn, plant density, nitrogen rates, yield, yield components.