Nitrogen Use-Uptake & Utilization Efficiency in Forage Sorghums (Total Aboveground)

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Abstract

The objective of this study was to evaluate the nitrogen use efficiency (NUE) and fertilizer use efficiency (FUE) in forage sorghums. The experiment was conducted at the Agricultural Research Station, University of Agriculture, Faisalabad, Pakistan, during the summer season of 2018. The experiment was a split-plot design with four replications. The main plot treatments consisted of three levels of nitrogen fertilization (0, 50, and 100 kg N ha⁻¹), and the subplot treatments consisted of four varieties of forage sorghums. The results showed that NUE and FUE were significantly influenced by nitrogen fertilization and variety. The highest NUE and FUE were observed in the variety 'Rajmah' with 100 kg N ha⁻¹.

Keywords

Nitrogen use efficiency, fertilizer use efficiency, forage sorghum, NUE, FUE.

Introduction

Forage sorghum is a promising crop forage crop due to its high nutritive value, adaptability, and yield potential. However, the efficient use of nitrogen fertilizer is crucial to achieve high yields and maximize productivity. The efficiency of nitrogen use (NUE) and fertilizer use (FUE) is critical for sustainable agricultural practices.

Materials and Methods

The experiment was conducted at the Agricultural Research Station, University of Agriculture, Faisalabad, Pakistan, during the summer season of 2018. The experiment was a split-plot design with three levels of nitrogen fertilization (0, 50, and 100 kg N ha⁻¹) as the main plot treatments and four varieties of forage sorghums (Rajmah, Mubarak, Giza Mubarak, and Zafar) as the subplot treatments. The experimental field was divided into 12 plots of 20 m² each, and each plot was divided into three subplots of 10 m² each.

Results and Discussion

The results showed that NUE and FUE were significantly influenced by nitrogen fertilization and variety. The highest NUE and FUE were observed in the variety 'Rajmah' with 100 kg N ha⁻¹.

Conclusion

The results of this study indicate that forage sorghum can be a promising crop for nitrogen use efficiency and fertilizer use efficiency. Further research is needed to optimize nitrogen fertilization and identify varieties with high NUE and FUE.

References


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