Optimizing Nitrate Levels in Sudan Grass: Exploring the Impact of Fertilizer Quantity in Agricultural Practices

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This science fair project investigated the fertilizer application rates on nitrate levels in sudangrass. Four field rows had different rates of nitrogen application. They ranged from 50% to 200% and were marked across the field. Sudangrass planting occurred on June 7, 2023, with a recorded rainfall of 10.94 inches during the growing season. After reaching maturity, the sudangrass was harvested on August 27, 2023. The sudangrass was then processed, dried, ground up into powder, and subjected to nitrate testing using nitrate strip testing. Observations found that the 50% application had 10 nitrate ppm, the 100% had 25 nitrate ppm, the 150% had 50 nitrate ppm, and the 200% had 100 nitrate ppm. In conclusion, the nitrate levels in harvested sudangrass can be affected by the quantity of applied fertilizer and the amount of urea added to the field, with variations observed due to the level of rainfall. These findings can help us understand the importance of carefully managing fertilizer with different application rates to mitigate the risk of nitrate levels in sudangrass.

Awards Won: