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Teff Grass Response to Nitrogen Fertilization

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Teff Grass Response to Nitrogen Fertilization

Abstract

Teff, a warm season annual grass native to Africa, is gaining popularity as a forage crop in the United States. Little information regarding nitrogen fertilization is available for teff grass production. This field experiment was conducted to evaluate teff grass response to varying nitrogen fertilization rates under dryland conditions. There was no yield response to increasing nitrogen rate or nitrogen source applied.

Keywords

teff, annual forages, nitrogen fertilization, soil fertility

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Teff Grass Response to Nitrogen Fertilization

J. Holman, D. Min, and S. Maxwell

Introduction

Teff, a warm season annual grass native to Africa, is gaining popularity as a forage crop in the United States. Little information regarding nitrogen fertilization is available for teff grass production. This field experiment was conducted to evaluate teff grass response to varying nitrogen fertilization rates under dryland conditions.

Procedures

A field in north-central Ford County was selected as the study location. Initial soil tests indicated 23 lb of available N was located in the top 24 in of the soil profile. On June 20, 2014, the plot area was seeded at 12 lb/acre of 'Tiffany' teff grass seed using a no-till grain drill. The plot area was a dryland field that had been no-till for the past 10 years. The experimental design was a randomized complete block, replicated 4 times, and individual plot size was 5 ft wide by 30 ft long. Six rates of nitrogen from 2 sources were used as broadcast applications at planting time. Rates applied included 0, 25, 50, 75, 100, and 125 lb of N/a using urea and ESN as the 2 sources. A forage biomass sample was harvested from a 1-meter square area within each plot on August 19 and September 11, 2014 to determine yield response to the nitrogen applications.

Results

There was no yield response to increasing nitrogen rate or nitrogen source applied. Urea treatments averaged 2,500 lb/a, which was 500 lb/a more than ESN (Figure1). Higher yields with irrigation or lower initial soil nitrogen levels may have resulted in a significant nitrogen rate response.

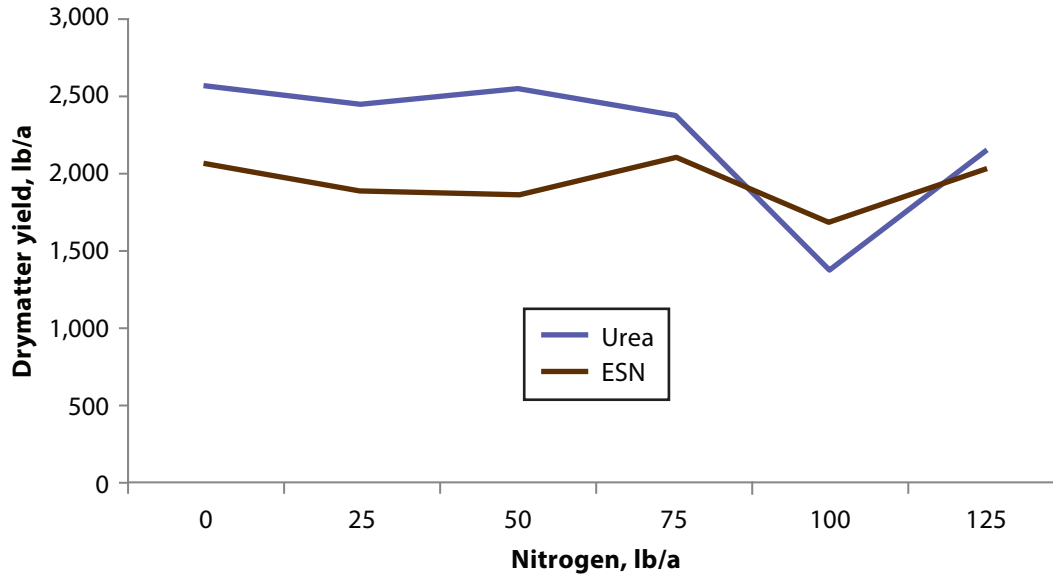


Figure 1. Teff response to varying rates of nitrogen.