Spatial Variability of Winter Wheat Pasture at the Onset of Grazing. (C06-mackown202815-Poster)

Authors:

- C.T.MacKown - *USDA-ARS, El Reno, OK*
- B.K.Northup - *USDA-ARS, El Reno, OK*
- J.A.Gressett - *Redlands Community College, El Reno, OK*

Abstract:

Wheat (Triticum aestivum L.) pastures are the primary source of cool-season forages available for millions of stocker calves in the southern Great Plains. Quality of wheat is considered excellent, but little or no weight gain may occur in the first 3 wk of grazing. To better understand forage factors that may affect stocker adaptation to wheat, spatial distributions of forage and soil traits in a 2-ha wheat pasture were measured at onset of fall grazing. Samples were collected from 212 points distributed in a modified grid pattern with most spaced 5-m apart in eight rows spaced 15-m apart. Biomass ranged from 71 to 3980 kg/ha (mean = 1790 kg/ha, RSD = 35%) and had uniform protein level of 261 g/kg (RSD = 4%), but nitrate-N levels varied from 0.5 to 8.4 g/kg (mean = 4.9 g/kg, RSD = 31%). Plant traits were unrelated to available soil N in the top 25 cm of soil, which ranged from 35 to 358 kg/ha (mean = 152 kg/ha, RSD = 40%). Biomass was unrelated to soil pH (4.44 - 7.08), Mehlich III extractable P (22 to 135 mg/kg), and KCl extractable Al (1 to 32 mg/kg) in the top 10 cm of soil. Interpolated maps depicting distribution of traits across the wheat pasture demonstrate local scale variability and poor replication among map patterns. Producers should evaluate their pastures for variability in forage availability to insure stocking rates do not lead to excessive grazing and consumption of potentially high nitrate wheat stems.

Corresponding Author Information:

Charles MacKown
USDA-ARS Grazinglands Research Lab, El Reno, OK
7207 W. Cheyenne St.
El Reno, OK 73036

phone: 405-262-5291
e-mail: cmackown@grl.ars.usda.gov

Presentation Information:

Presentation Date: Monday, November 11, 2002

Presentation Time: 4:00-6:00 pm
Poster Board Number: 830

Keywords:
winter wheat pasture, spatial variability, soil available nitrogen, forage nitrate