Manipulating Grain Protein in Soft Wheat: Late-Season Nutrition Management. (S04-grove120246-Poster)

Authors:

- A.A.Marchi* - *University of Kentucky*
- J.H.Grove - *University of Kentucky*

Abstract:

Protein is an important component to grain quality in soft winter wheat (Triticum aestivum L.) production. In moist rain-fed environments, applications of fertilizer N near heading can lead to improved grain protein, but the response needs to be predictable to avoid unneeded or excessive N fertilization. Grain protein response to at-flowering N application was related to the at-flowering flag leaf chlorophyll as estimated by the chlorophyll meter (SPAD) in an experiment conducted over four site-years in 2001 and 2002. The experimental design was a factorial combination of early greenup fertilizer N rates (84, 118, and 151 kg N/ha) and at-flowering fertilizer N (0, 22 and 45 kg N/ha). In 2001, grain N was positively related to both early and late fertilizer N rate. The increment of grain N response to late fertilizer N declined with greater early season N availability. At-flowering flag leaf SPAD readings were negatively related to the increment of grain N response, and that relationship was stronger (-0.268 gN/kg grain DM/SPAD unit) and more predictable (R2= 0.90) where 45 kg N/ha was applied than where 22 kg N/ha was applied (-0.139 gN/kg grain DM/SPAD unit; R2=0.60).

Corresponding Author Information:

John Grove
University of Kentucky
Agronomy Department
Lexington, KY 40546-0091

phone: 859-257-5852
e-mail: jgrove@uky.edu

Presentation Information:

Presentation Date: Tuesday, November 12, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 1441

Keywords:

wheat nutrition, grain protein, nitrogen nutrition, chlorophyll meter