



Grain Crops Update

May 22, 2009

Erick Larson and Larry Oldham

Assessing Topdress Nitrogen Priority

Determining nitrogen deficiency visually or through tissue analyses may not be very useful for quickly assessing corn nitrogen needs, because soil saturation has been the dominant factor limiting corn growth (and nutrient uptake) the past several weeks. Please refer to last week's newsletter for assessing N loss due to wet soils: http://msucares.com/newsletters/grain/2009/may14_2009.pdf.

Excessively wet conditions prevalent this entire spring will dictate non-traditional nitrogen application on numerous acres to provide intended nutrients or supplement anticipated loss. We suggest prioritizing application to fields with little nitrogen applied, particularly if the plants are one foot tall or larger. Although small corn nitrogen needs are relatively slight, compared to corn in rapid vegetative stages, prolonged nitrogen deficiency will stunt vegetative growth and potential yield. Furthermore, corn taller than one foot is entering rapid vegetative stages, which is when nitrogen demand is highest, so it is imperative to have some nitrogen available. Thus, cases where little or no nitrogen have been applied are definitely high priority.

Figure 1. Sunny, dry weather is the foremost priority for saturated corn fields. Supplemental nitrogen fertilizer may be applied when soils dry, relative to crop need and size.



Corn growth stage will also influence relative need for supplemental nitrogen application. Topdress application should generally commence before tassel stage, so rainfall or overhead irrigation can incorporate the nitrogen into the soil and plants can use it and improve their health, before kernel development begins. Thus, corn in intermediate vegetative growth stages (3 – 5 feet tall), where intended rates were applied, but need supplemental nitrogen to compensate for anticipated loss, have some application timing latitude. Another important factor for determining nitrogen topdress timing is soil moisture. Soils must be dry enough to absorb moisture for rainfall to incorporate the nitrogen, if rainfall occurs immediately after application - otherwise, your expensive nitrogen is going to leave the field with runoff water. This does not necessarily suggest the soil surface absolutely must be crusted or completely dry for nitrogen application, especially when imminent rainfall is forecast (which will incorporate the nitrogen into the soil). However, do not apply nitrogen fertilizer when soils are completely saturated, flooded or ponded.

To add your address to the Corn and/or Wheat email list, please send a request to:
elarson@pss.msstate.edu



MISSISSIPPI STATE
UNIVERSITY[™]

EXTENSION SERVICE



Copyright 2009 by Mississippi State University. All rights reserved. This publication may be copied and distributed without alteration for nonprofit educational purposes provided that credit is given to the Mississippi State University Extension Service.

Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or veteran status.