NITROGEN RATE AND APPLICATION TIMING EFFECTS ON WHEAT YIELD AND GRADE
2002-03

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Location: Edisto Research and Education Center, Barnwell Co. SC, Field D-13 C.

Design: RCB with five replicates; plot size 8 rows (8" spacing) x 40'

Soil Type: Varina loamy sand.

Rotation: 2002 strip-till corn; 2001 peanut, fallow; 2000 strip-till corn; 1999 peanut, fallow

Planting Date: Nov 26, 2002

Seeding Rate: 24 seed / row foot

Herbicide: 0.30 oz Express 75DF was applied 10 Feb.

Fungicide: 6 oz Headline 2 Apr

Treatments:

14 Dec (pre-emergence)	15 Jan (GS 2.1)*	19 Feb (GS 2.3)
30	0	0
30	0	60
30	30	30
30	30	60

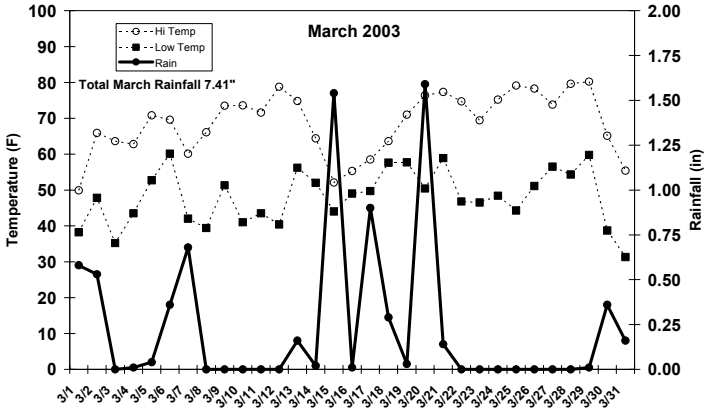
*** 55.6 3 leaf tillers / m.**

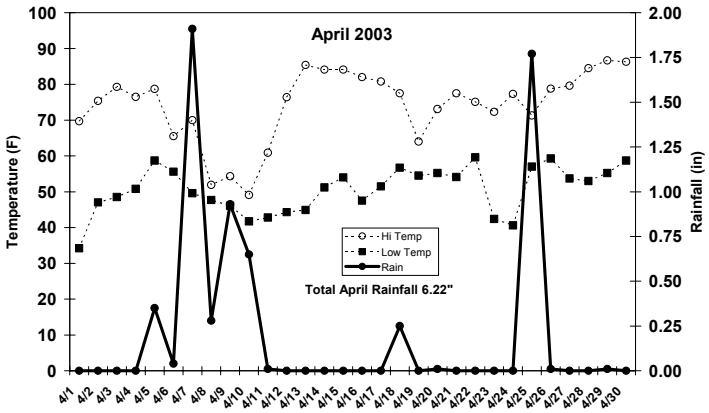
Methods: Test area was disked then deep-tilled (13-14" deep) perpendicular to the plots with a Terra Max Worksaver prior to planting. 14 Dec N was applied with a three point hitch FMC sprayer delivering 20 gallons per acre (gpa) through Tee Jet 8003 flat fan tips. All other N applications were applied with a tractor-mounted CO_2 pressurized sprayer delivering 20.0 gpa @ 40 psi through Tee Jet 11003 flat fan tips. The boom was shielded with Red Ball broadcast hoods to prevent drift. N solution was diluted such that one pass would deliver 30 lbs N / acre. 60 lbs / acre rate was accomplished by treating plots twice. The inner six rows of each 8-row plot were harvested 1 June with an Almaco plot combine. Yield samples were weighed on an electronic balance. Test weight was taken by funneling a sub-sample of grain through a Seedburo No. 151 filling hopper and weighing one dry pint of grain on an electronic scale. Grain moisture content was measured with a Burrows DMC-700 moisture meter. All yields were adjusted to 13.5% moisture before analysis.

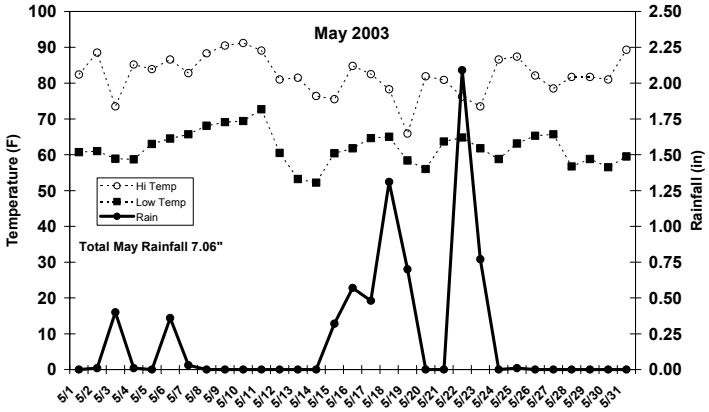
Analysis: ANOVA, using SAS PROC GLM.
Fisher's protected LSD was used for mean separation (P=0.05).

Notes: No weather delays in harvest.

The following charts are temperature and rainfall recorded for March – June 2003.







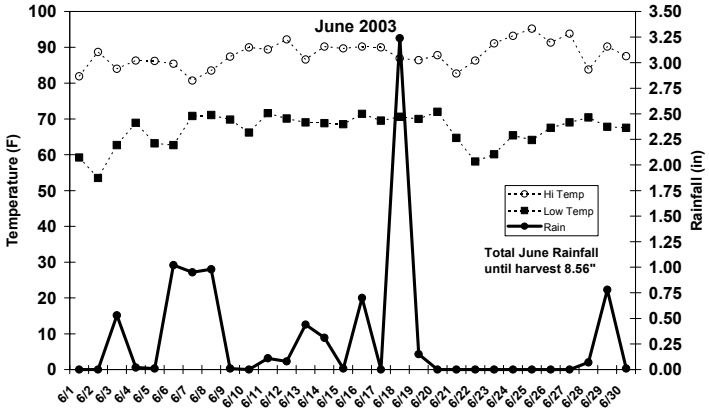


Table 1. Nitrogen rate and application timing effects on wheat yield, and test weight, Blackville, SC 2002-03.

N Treatment (lb/ac) 14 Dec - 15 Jan - 19 Feb	Yield (bu/acre)	Test Weight (lbs/bu)
30 - 30 - 30	69.1 a	60.3 ab
30 - 0 - 60	66.9 a	61.0 a
30 - 30 - 60	65.8 a	59.7 b
30 - 0 - 0	65.2 a	60.7 ab

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AGS 2000 planted 26 Nov 2002; harvested 1 June 2003.
Means followed by the same letter are not significantly different, Fisher's protected LSD (*P*=0.05).

Notes: Early season (Dec-Jan) growth was delayed by abnormally cold temperatures (data not shown). Lodging could have affected high N (30-30-60) yield. Even in a year with high rainfall, residual N was apparently available in the clay subsoil (note 30-0-0 yield).