

HRS wheat protein response to late-season foliar nitrogen, Carrington, 2010. (Greg Endres and Blaine Schatz) The objective of the trial was to compare spring wheat seed protein response among selected late-season nitrogen (N) treatments including N rates and formulations, and application timing. Experimental design was randomized complete block with four replications. The irrigated trial was planted with 'Glenn' hard red spring wheat at 1.25 million pure live seeds/acre (A) on April 28 on soybean ground at the NDSU Carrington Research Extension Center. Soil N was at the recommended amount to achieve a yield goal of 80 bushels/A. Tissue analysis of untreated flag leaves sampled on June 30 indicated high levels of N and sufficient levels of S. Treatments were applied on June 28 (flowering), July 5 (POST anthesis), or July 15 (milk stage) with a CO₂-hand-boom plot sprayer equipped with 8001 flat-fan nozzles to deliver 18 gal/A of fertilizer and water. Flag leaf necrosis was visually evaluated 4 to 7 days after application of N treatments. The trial was harvested with a plot combine on August 17.

Flag leaf necrosis ranged from 0 to 2% with CoRon treatments compared to 5 to 17% with UAN (table). However, yield was similar among all N treatments. Seed protein with the untreated check was 16%, thus providing minimal opportunity to increase protein with N treatments. No protein response occurred among N treatments.

Table.

		N application ¹			Wheat response				
Trt	Treatment	N rate	Product rate	Crop stage	Flag leaf necrosis	Seed yield	Test weight	Seed count	Protein
No.	Name	lb ai/A	gal/A		%	bu/A	lb/bu	seeds/lb	%
1	UAN/UAN	30	5 fb 5	F fb PF	5	63.0	61.6	14129	15.9
2	UAN	30	10	F	7	73.4	62.2	14004	15.6
3	UAN	30	10	PF	16	67.8	61.7	14273	15.7
4	UAN	30	10	M	8	72.9	62.0	13767	15.4
5	UAN+AMS	30+3S	10+3	PF	17	64.9	62.0	13953	15.9
6	CoRoN	5	2	F	0	66.3	61.7	14354	15.7
7	CoRoN	30	12.1	F	2	62.1	61.7	13954	16.4
8	CoRoN	5	2	PF	0	62.7	61.7	13847	16.3
9	CoRoN	30	12.1	PF	2	56.3	61.5	14006	16.9
10	untreated check	x	x	x	0	63.5	61.9	14165	16.0
	mean				6	65.3	61.8	14045	16.0
	CV%				24	12.2	0.9	3.8	3.9
	LSD (0.05)				2	NS	NS	NS	NS

¹Crop stage: F=flowering, PF=post flowering, M=milk.