


**Table 1.** Evaluation of GreenSeeker™-based N management in wheat (cultivar PBW 343) at Ludhiana, India during 2005-06.

Treatment	Fertilizer N application, kg N/ha					Y <sub>P0</sub> <sup>‡</sup> , t/ha	RI <sup>§</sup>	Grain yield, t/ha	Total N uptake, kg/ha	AE <sup>†</sup>	RE <sup>¶</sup>	PE <sup>#</sup>
	Basal sowing	CRI <sup>*</sup> 1st irrigation	Feekes 5 to 6 2nd irrigation	Feekes 7 to 8 3rd irrigation	Total							
1	0	0	-	-	0			1.52	31.9	-	-	-
2	60	60	-	-	120			4.35	103.2	23.6	59.2	39.9
3	75	75	-	-	150			4.41	110.3	19.3	52.3	37.1
4	60	0	17 *	-	77	3.25	1.16	3.66	73.1	27.8	53.2	52.2
5	80	0	12 *	-	92	3.52	1.11	3.80	87.8	24.8	60.9	40.7
6	100	0	10 *	-	110	3.61	1.09	4.20	95.2	24.4	57.3	42.5
7	40	40	3 *	-	83	4.02	1.02	3.81	88.5	27.6	68.1	40.6
8	50	50	0 *	-	100	4.30	0.98	4.32	98.8	28.0	67.0	41.8
9	60	60	0 *	-	120	4.20	0.99	4.39	105.4	23.9	61.3	39.3
10	60	0	-	29 *	89	2.98	1.30	3.99	94.2	27.8	69.7	39.4
11	80	0	-	24 *	104	3.24	1.24	4.13	97.6	25.1	63.5	40.5
12	100	0	-	21 *	121	3.43	1.19	4.29	102.4	22.9	58.3	39.2
13	40	40	-	18 *	98	3.62	1.15	4.27	100.5	28.1	70.0	39.9
14	50	50	-	12 *	112	3.84	1.10	4.35	108.5	25.3	68.4	36.8
15	60	60	-	15 *	135	3.77	1.12	4.40	115.2	21.3	61.5	34.7
LSD (p = 0.05)								0.37	11.04	3.03	9.52	4.41

\*GreenSeeker™ guided N application; <sup>‡</sup>Crown root initiation stage; <sup>†</sup>AE: Agronomic efficiency of applied N (kg grain/kg N applied); <sup>¶</sup>RE: Recovery efficiency of applied N (%); <sup>#</sup>PE: Physiological efficiency (kg grain/kg N uptake); <sup>‡</sup>Y<sub>P0</sub>: Yield potential with no additional fertilizer N applied; <sup>§</sup>RI: Response index, RI<sub>NDVI</sub>

in yield. This strategy saved total fertilizer N application if compared with the prevalent blanket recommendations. 

Dr. Bijay-Singh, Dr. Jaspreet-Kaur, Dr. Yadvinder-Singh, Dr. Varinderpal-Singh, Dr. H.S. Thind, and Dr. M. Vashistha are with the Department of Soil Science, Punjab Agricultural University, Ludhiana, India. e-mail: bijaysingh20@hotmail.com, Dr. R.K. Sharma is with the Directorate of Wheat Research, Karnal, India, Dr. Raj Gupta and Dr. M.L. Jat are with CIMMYT-India, New Delhi, India, Dr. K.L. Martin is with Southwest Area Extension, Kansas State University, Garden City, KS, USA, Dr. H.S. Khurana is International Agronomic and Technical Support Specialist, Saskatoon, SK, Dr. W.R. Raun is

with the Department of Plant and Soil Sciences, Oklahoma State University, Stillwater, OK, USA.

This paper is adapted from "Assessment of the Nitrogen Management Strategy Using an Optical Sensor for Irrigated Wheat" by Bijay-Singh et al. 2011. *Agron. Sustainable Dev.* 31(3):589-603. Original article link: <http://rd.springer.com/article/10.1007/s13593-011-0005-5>

## References

- Raun, W.R. et al. 2002. *Agron. J.* 94:815-820.  
Johnson, G.V. and W.R. Raun. 2003. *J. Plant Nutr.* 26:249-262.



**Symposium on Modeling the Economics of Fertilizer Applications** ASA/CSSA/SSSA International Annual Meetings - Monday 22 October 2012, 8:00 am - 12:00 pm.

**Sponsored by:** SSSA Divisions S4 (Soil Fertility and Plant Nutrition) and S8 (Nutrient Management and Soil & Plant Analysis).

Nutrient recommendations are being called upon to meet many objectives, such as increased efficiency, increased production, and lower environmental losses; however, farmers, who are the ones making the final fertilization decisions, are most concerned about profitability. This symposium examines

various methodologies for incorporating economic variables into fertilizer recommendations. Approaches range from short-term considerations for one nutrient to long-term optimizations that consider multiple factors simultaneously. Presentations will span this range of complexity to assess how far science has come and where it must go in the future to improve the economic decision-making of farmers.

We invite all participants of the ASA/CSSA/SSSA International Meetings in Cincinnati to attend this symposium. More details can be found by following the link: <http://scisoc.confex.com/scisoc/2012am/webprogram/Session9944.html> 