**Soybean response to special foliar inputs, Carrington, 2010.**
(Greg Endres and Rick Glatt)

A field trial was conducted at the NDSU Carrington Research Extension Center to examine the impact of foliar inputs on soybean seed yield and quality. Experimental design was a randomized complete block with four replications. The previous crop was soybean. The irrigated, conventional-till trial was established on a Heimdal Emrick loam soil with 58 lb/A (0-24") nitrate-N, 5 ppm P (low), 187 ppm K, 24 lb/A (0-24") Cl (low), 94 lb/A (0-24") S, 1.3 ppm B, 0.91 ppm Zn, 14.0 ppm Fe, 3.0 ppm Mn, 0.63 ppm Cu, 553 ppm Mg, 3267 ppm Ca, 0.3% carbonate, 0.27 mmho/cm (0-6") and 0.33 mmho/cm (6-24") soluble salts, 20.8 meq CEC, 3.4% organic matter and 7.9 pH. Inoculated Dairyland Seeds '0401' RR was planted at about 200,000 seeds/A in 30-inch rows on May 19. POST foliar treatments were applied with a CO2-pressurized hand-boom sprayer delivering 17 gal/A at 35 psi with 8001 flat-fan nozzles. Treatments application dates: V3 = June 28, R1 = July 7, and R3 = July 21. The trial was harvested with a plot combine on October 4.

'GreenSeeker' readings taken in early August indicated no difference among treatments for green plant color (Table). Visually inspections on August 4 (R4-5 stages), August 19 (R5-6 stages), and September 1 (R6 stage) indicated similar plant appearance among treatments. Soybean plant maturity and seed size varied slightly with several treatments compared to the untreated check. Plant height, seed yield, test weight, and seed oil and protein were similar among treatments compared to the untreated check.

Table.

| | | Treatment | | | | Plant | | | Seed | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. | Company | Name | Rate | Unit | Timing | Green color[1] | PM | Ht | Yield | Test weight | Seeds/lb | Oil | Protein |
| | | | | | | NDVI | Jday | in | bu/A | lb/bu | | % | % |
| 1 | x | untreated check | x | x | x | 0.90 | 262 | 33 | 51.6 | 57.2 | 3189 | 17.7 | 32.8 |
| 2 | | AGM 08005 | 3.2 | fl oz/a | R1 | 0.89 | 262 | 33 | 53.7 | 57.1 | 3168 | 17.7 | 33.0 |
| | | AGM 09027 | 32 | fl oz/a | R1 | 0.89 | 262 | 32 | 52.0 | 57.2 | 3202 | 17.6 | 32.7 |
| 3 | | AGM 08005 | 3.2 | fl oz/a | R1 | | | | | | | | |
| | | AGM 08005 | 3.2 | fl oz/a | V3 | 0.89 | 262 | 34 | 52.1 | 57.2 | 3251 | 17.7 | 32.8 |
| 4 | | AGM 08005 | 3.2 | fl oz/a | R1 | | | | | | | | |
| | | AGM 09027 | 32 | fl oz/a | V3 | 0.89 | 262 | 32 | 52.3 | 57.0 | 3182 | 17.7 | 32.8 |
| 5 | | AGM 08005 | 3.2 | fl oz/a | R1 | | | | | | | | |
| | | AGM 09027 | 32 | fl oz/a | V3 | 0.89 | 262 | 35 | 56.5 | 57.2 | 3212 | 17.8 | 32.8 |
| | | AGM 09027 | 32 | fl oz/a | R1 | | | | | | | | |
| 6 | | AGM 09805 | 3.2 | fl oz/a | R1 | | | | | | | | |
| | | AGM 08005 | 3.2 | fl oz/a | V3 | 0.89 | 262 | 33 | 51.7 | 57.0 | 3197 | 17.7 | 33.0 |
| | | AGM 09027 | 32 | fl oz/a | R1 | | | | | | | | |
| 7 | | AGM 08005 | 3.2 | fl oz/a | R1 | | | | | | | | |
| | | AGM 09027 | 32 | fl oz/a | V3 | 0.89 | 262 | 33 | 53.1 | 57.0 | 3189 | 17.7 | 32.9 |
| | | AGM 08005 | 3.2 | fl oz/a | V3 | | | | | | | | |
| 8 | | AGM 09027 | 32 | fl oz/a | R1 | | | | | | | | |
| | | AGM 09027 | 32 | fl oz/a | V3 | 0.89 | 262 | 32 | 51.4 | 57.0 | 3192 | 17.7 | 32.7 |
| | | AGM 08005 | 3.2 | fl oz/a | V3 | | | | | | | | |
| 9 | | AGM 08005 | 3.2 | fl oz/a | R1 | | | | | | | | |
| | | AGM 09027 | 32 | fl oz/a | V3 | 0.88 | 263 | 32 | 51.9 | 57.3 | 3165 | 17.7 | 32.9 |
| | | AGM 08005 | 3.2 | fl oz/a | V3 | | | | | | | | |
| | Winfield | AGM 09027 | 32 | fl oz/a | R1 | | | | | | | | |
| 10 | Solutions | AGM 08005 | 3.2 | fl oz/a | R1 | | | | | | | | |
| 11 | TJ Technologies | Sufl/Can/Soy Mix | 48 | fl oz/a | V3 | 0.89 | 263 | 33 | 52.5 | 57.2 | 3209 | 17.6 | 33.1 |
| 12 | EMD Crop BioScience | LCO Foliar | 4 | fl oz/a | V3 | 0.89 | 262 | 33 | 54.5 | 57.1 | 3214 | 17.6 | 32.7 |
| | | Headline | 6 | fl oz/a | R3 | 0.89 | 263 | 34 | 55.2 | 57.1 | 3101 | 17.6 | 32.8 |
| 13 | BASF | NIS | 0.25 | % v/v | R3 | | | | | | | | |
| | | Stratego Pro | 2.5 | fl oz/a | R3 | 0.88 | 263 | 33 | 54.1 | 57.3 | 3147 | 17.8 | 32.5 |
| 14 | Bayer | NIS | 0.25 | % v/v | R3 | | | | | | | | |
| | | Makaze Yield Pro | 32 | fl oz/a | R3 | 0.90 | 262 | 33 | 52.5 | 57.3 | 3170 | 17.7 | 32.8 |
| 15 | Loveland | Weather Gard Complete | 0.50 | % v/v | R3 | | | | | | | | |
| 16 | | Bin Buster XP | 8 | fl oz/a | V3 | 0.89 | 262 | 34 | 54.9 | 56.9 | 3181 | 17.4 | 33.1 |
| | | Bin Buster XP | 8 | fl oz/a | V3 | 0.89 | 262 | 33 | 53.0 | 57.3 | 3225 | 17.7 | 32.9 |
| 17 | Kugler | KQ-XRN | 128 | fl oz/a | R1 | | | | | | | | |
| 18 | Agro-Culture Liquid Fertilizers | Micro500 | 32 | fl oz/a | R3 | 0.88 | 262 | 35 | 54.0 | 57.2 | 3191 | 17.8 | 32.9 |
| 19 | | SureK | 256 | fl oz/a | R3 | 0.89 | 262 | 33 | 52.6 | 57.0 | 3182 | 17.6 | 33.1 |
| | | Sufl/Can/Soy Mix | 48 | fl oz/a | V3 | 0.89 | 263 | 34 | 56.8 | 56.9 | 3065 | 17.7 | 33.0 |
| | | LCO Foliar | 4 | fl oz/a | V3 | | | | | | | | |
| | | Headline | 6 | fl oz/a | R3 | | | | | | | | |
| 20 | | NIS | 0.25 | % v/v | R3 | | | | | | | | |
| Mean | | | | | | 0.89 | 262 | 33 | 53.3 | 57.1 | 3181 | 17.7 | 32.9 |
| C.V. (%) | | | | | | 0.7 | 0.3 | 4.6 | 5.7 | 0.7 | 1.9 | 1.0 | 1.0 |
| LSD (0.05) | | | | | | NS | 1 | NS | NS | NS | 86 | NS | NS |

[1]GreenSeeker readings on August 2 and 16.