<u>Soybean response to selected plant establishment and foliar inputs, Wishek, 2015.</u> (Greg Endres, Tim Indergaard, Kyle Aasand, Sheldon Gerhardt, Crystal Schaunaman and Kelsie Egeland)

A field trial was conducted at the CREC Tri-county off-station crop research site near Wishek to examine the response of soybean to seed inoculation and fungicide, sulfur fertilizer, and special foliar inputs. Experimental design was a randomized complete block with four replications. Spring 2014 soil test indicated 65 lb nitrate N/acre, 23 ppm P (Olsen), 3.5% organic matter, and 5.4 and 6.5 pH and 0.26 and 0.32 mmho/cm soluble salts (0-6" and 6-24" depths). Previous crop was spring wheat in 2014 and soybean in 2013. Dairyland Seed 'DSR0404' Roundup Ready soybean was planted in 14-inch rows on May 29. Seed was harvested with a plot combine on October 6.

Plant emergence date was similar among treatments (June 9). Plant stand among treatments was similar to the untreated check (183,600 plants/acre) (Table). Plant and pod height measured on October 6 was similar among treatments. Seed yield was statistically similar but generally tended to increase with all treatments compared to the untreated check. Yield with double inoculation (treatment #5) tended to be greater versus granular or liquid inoculation. Seed size tended to be larger with multiple inputs (treatment #10) compared to other treatments and the untreated check. Seed oil and protein were similar among treatments.

Untreated check   X   X   183,550   40   7   22.4   56.8   3240   15.7   36.3	Table.											
Number	Treatment											
Number   Product   Product   method   (June   Height   (Oct 6)							↓ ↓			Seed		
Description	Number	Product		method/	(June	_	height	Yield			Oil	Protein
Untreated check   x   x   183,550   40   7   22.4   56.8   3240   15.7   36.3				J		` ′	T -					
Check   X   X   183,550   40   7   22.4   56.8   3240   15.7   36.3					1 -	_						
MES15 67 lb broadcast 167,190 41 6 22.7 56.9 3296 15.8 35.6 Rhizo Flo granular inoculant 6.5 lb in-furrow 182,840 42 6 24.5 57.1 3208 16.1 35.8 Optimize liquid inoculant seed seed 205,611 37 8 22.2 56.9 3311 15.3 36.9 Rhizo Flo and same as above and seed 219,130 43 12 25.4 57.1 3268 15.4 36.8 Apron Maxx RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron Max RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron Max RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron Max RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron Max RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron Max RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron RT oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron RT oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron RT oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron RT oz/100 lb seed seed 167,190 42 8 23.8 57.3 3224 15.9 36.0 Apron RT oz/100 lb seed seed 167,190 42 8 23.8 57.3 3224 15.9 36.0 Apron RT oz/100 lb seed seed 167,190 42 8 23.7 57.0 3276 15.6 36.3 Apron RT oz/100 lb seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed 167,190 42 8 23.9 56.8 3089 15.6 36.1 Apron RT oz/100 lb seed seed seed seed seed seed seed see		untreated										
MES15	1	check	Х	x	183,550	40	7	22.4	56.8	3240	15.7	36.3
Rhizo Flo granular inoculant 6.5 lb in-furrow 182,840 42 6 24.5 57.1 3208 16.1 35.8 Optimize 2.8 fl iquid inoculant seed seed 205,611 37 8 22.2 56.9 3311 15.3 36.9 Rhizo Flo and same as above and seed 219,130 43 12 25.4 57.1 3268 15.4 36.8 Apron Maxx RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron Maxx RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 Apron Priaxor + Afl oz + NIS 0.25% R4 184,981 39 9 24.8 56.8 3202 15.9 35.7 MAX-IN Ultra ZMB 32 fl oz R4 182,840 41 9 23.7 57.0 3276 15.6 36.3 MES15 + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + Rhizo Flo + Apron Maxx/ Ascend + Droadcast + In-furrow Holl In Ultra above R4 192,090 39 8 23.9 56.8 3089 15.6 36.1 MES15 + Rhizo Flo + Apron Maxx/ Ascend + Briaxor + Rhizo Flo	2	MEQ15	67 lb		167 100	41	6	22.7	56.0	3206	15 Q	35.6
Second   S			07 10	Dioaucasi	107,190	41	0	22.1	30.9	3290	13.0	33.0
Second   S												
Optimize   iliquid   oz/100 lb   seed   seed   205,611   37   8   22.2   56.9   3311   15.3   36.9	3		6.5 lb	in-furrow	182,840	42	6	24.5	57.1	3208	16.1	35.8
Rhizo Flo and same as in-furrow above and seed   205,611   37   8   22.2   56.9   3311   15.3   36.9		Optimize	2.8 fl		- ,							
and Optimize above and seed 219,130 43 12 25.4 57.1 3268 15.4 36.8  Apron 5 fl Maxx RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8  Ascend 4.5 fl oz R4 175,731 40 8 23.8 57.3 3224 15.9 36.0  Priaxor + 4 fl oz + NIS 0.25% R4 184,981 39 9 24.8 56.8 3202 15.9 35.7  MAX-IN Ultra ZMB 32 fl oz R4 182,840 41 9 23.7 57.0 3276 15.6 36.3  MES15 + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + NIS + MAX- In-furrow Hold R4 Seed/ In Ultra Babove R4 192,090 39 8 23.9 56.8 3089 15.6 36.1	4		seed	seed	205,611	37	8	22.2	56.9	3311	15.3	36.9
Optimize   above   and seed   219,130   43   12   25.4   57.1   3268   15.4   36.8												
Apron Maxx RTA oz/100 lb seed seed 167,190 42 7 26.8 57.0 3184 15.9 35.8 7 Ascend 4.5 fl oz R4 175,731 40 8 23.8 57.3 3224 15.9 36.0 Priaxor + 4 fl oz + NIS 0.25% R4 184,981 39 9 24.8 56.8 3202 15.9 35.7 MAX-IN Ultra ZMB 32 fl oz R4 182,840 41 9 23.7 57.0 3276 15.6 36.3 MES15 + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + NIS + MAX- same as hove R4 192,090 39 8 23.9 56.8 3089 15.6 36.1 mean												
Maxx RTA   oz/100 lb   seed   seed   167,190   42   7   26.8   57.0   3184   15.9   35.8     Ascend   4.5 fl oz   R4   175,731   40   8   23.8   57.3   3224   15.9   36.0     Priaxor +   4 fl oz +   NIS   0.25%   R4   184,981   39   9   24.8   56.8   3202   15.9   35.7     MAX-IN   Ultra ZMB   32 fl oz   R4   182,840   41   9   23.7   57.0   3276   15.6   36.3     MES15 +   Rhizo Flo +   Apron   Maxx/   Ascend +   Priaxor +   Friaxor +   Friaxor +   NIS + MAX-same as   IN Ultra   above   R4   192,090   39   8   23.9   56.8   3089   15.6   36.1     Mean   Decay   Text	5	•		and seed	219,130	43	12	25.4	57.1	3268	15.4	36.8
Ascend			oz/100 lb									
Priaxor + 4 fl oz + 0.25% R4 184,981 39 9 24.8 56.8 3202 15.9 35.7  MAX-IN Ultra ZMB 32 fl oz R4 182,840 41 9 23.7 57.0 3276 15.6 36.3  MES15 + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + NIS + MAX- same as + seed/ IN Ultra above R4 192,090 39 8 23.9 56.8 3089 15.6 36.1  Mesan	6											
NIS	7			R4	175,731	40	8	23.8	57.3	3224	15.9	36.0
O	8	NIS		R4	184,981	39	9	24.8	56.8	3202	15.9	35.7
MES15 + Rhizo Flo + Apron Maxx/ Ascend + Priaxor + NIS + MAX- same as IN Ultra above R4 192,090 39 8 23.9 56.8 3089 15.6 36.1    mean 186,110 40 8 24.0 57.0 3230 15.7 36.1   CV (%) 11.3 8.3 33.3 15.7 0.6 4.1 2.3 2.1   CSD (0.05) 8 NS NS NS NS NS NS NS												
Rhizo Flo +   Apron   Maxx/   Preplant   broadcast   Priaxor +   Horturow	9		32 fl oz	R4	182,840	41	9	23.7	57.0	3276	15.6	36.3
Apron   Maxx/   Ascend +   broadcast   + in-furrow   + seed/   IN Ultra   above   R4   192,090   39   8   23.9   56.8   3089   15.6   36.1												
Maxx/												
Ascend + Priaxor + NIS + MAX-same as + seed/ IN Ultra above R4 192,090 39 8 23.9 56.8 3089 15.6 36.1 (CV (%) 11.3 8.3 33.3 15.7 0.6 4.1 2.3 2.1 (SD (0.05) 30,590 NS												
Priaxor +   Honest												
NIS + MAX   same as   + seed/   192,090   39   8   23.9   56.8   3089   15.6   36.1												
10												
mean         186,110         40         8         24.0         57.0         3230         15.7         36.1           CV (%)         11.3         8.3         33.3         15.7         0.6         4.1         2.3         2.1           LSD (0.05)         30,590         NS         NS         NS         NS         NS         NS         NS	10				102.000	20	0	22.0	EG 9	2000	15.6	26.1
CV (%)       11.3       8.3       33.3       15.7       0.6       4.1       2.3       2.1         LSD (0.05)       30,590       NS	10	แท บแเล	above	K4	192,090	39	Ö	23.9	8.00	3089	13.0	30.1
CV (%)       11.3       8.3       33.3       15.7       0.6       4.1       2.3       2.1         LSD (0.05)       30,590       NS	mean				186 110	40	8	24 0	57.0	3230	15.7	36 1
SD (0.05) 30,590 NS NS NS NS NS NS NS												
		5)			+							