

# Foliar Studies: Corn and Soybean

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THE LOUISIANA  
**Soybean & Grain**  
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# Objective & Field Experiment

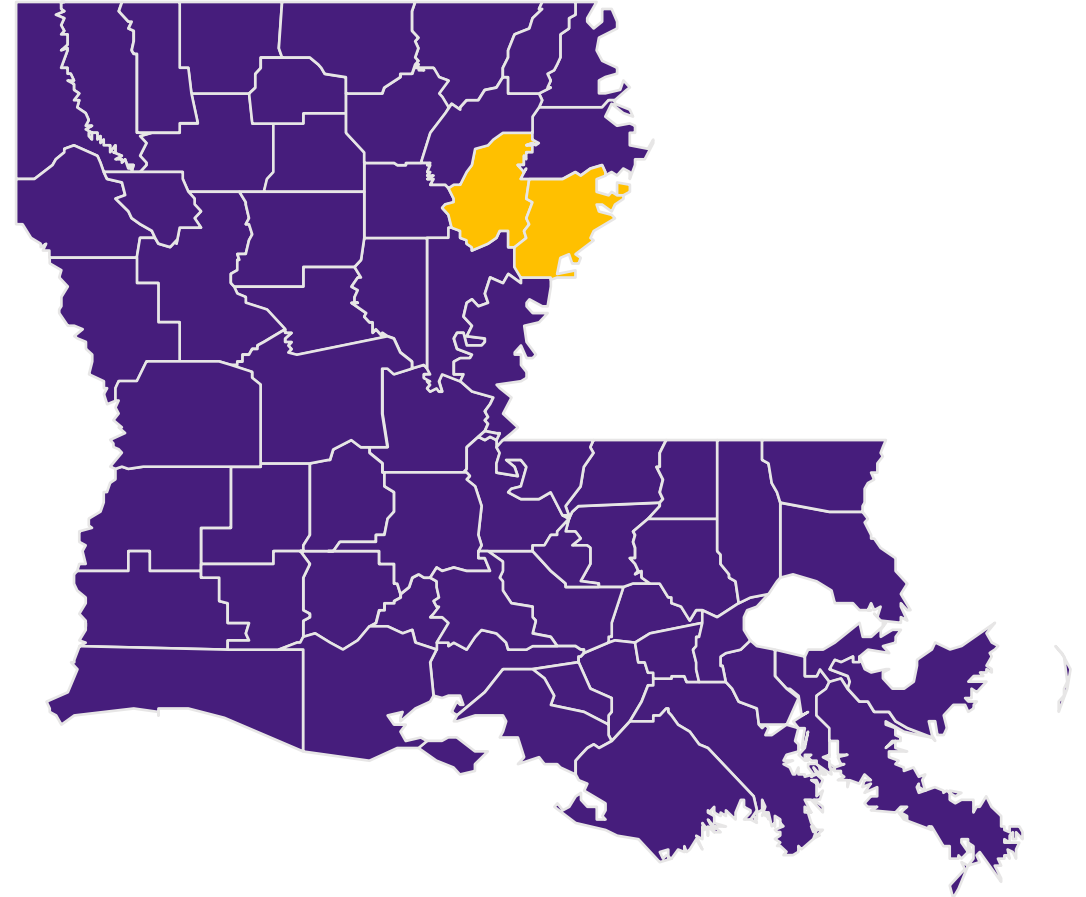
❖ Evaluate the effects of commercially available foliar fertilizers as supplemental fertility inputs under sufficient soil fertility conditions on corn and soybean yields.

❖ **Year & Location: 2020 to 2022**

- ✓ Macon Ridge Research Station
- ✓ Northeast Research Station

❖ **Experimental Treatments: 24**

- ✓ Producers' Standard Check: 1
- ✓ Granular Fertilizer Treatments: 5
- ✓ Foliar Fertilizer Treatments: 18
  - Helena
  - Koch
  - Nachurs
  - Nutrien
  - Ouachita
  - Earth Science Lab



# Foliar Fertilizer Treatments and Nutrient Content for Corn

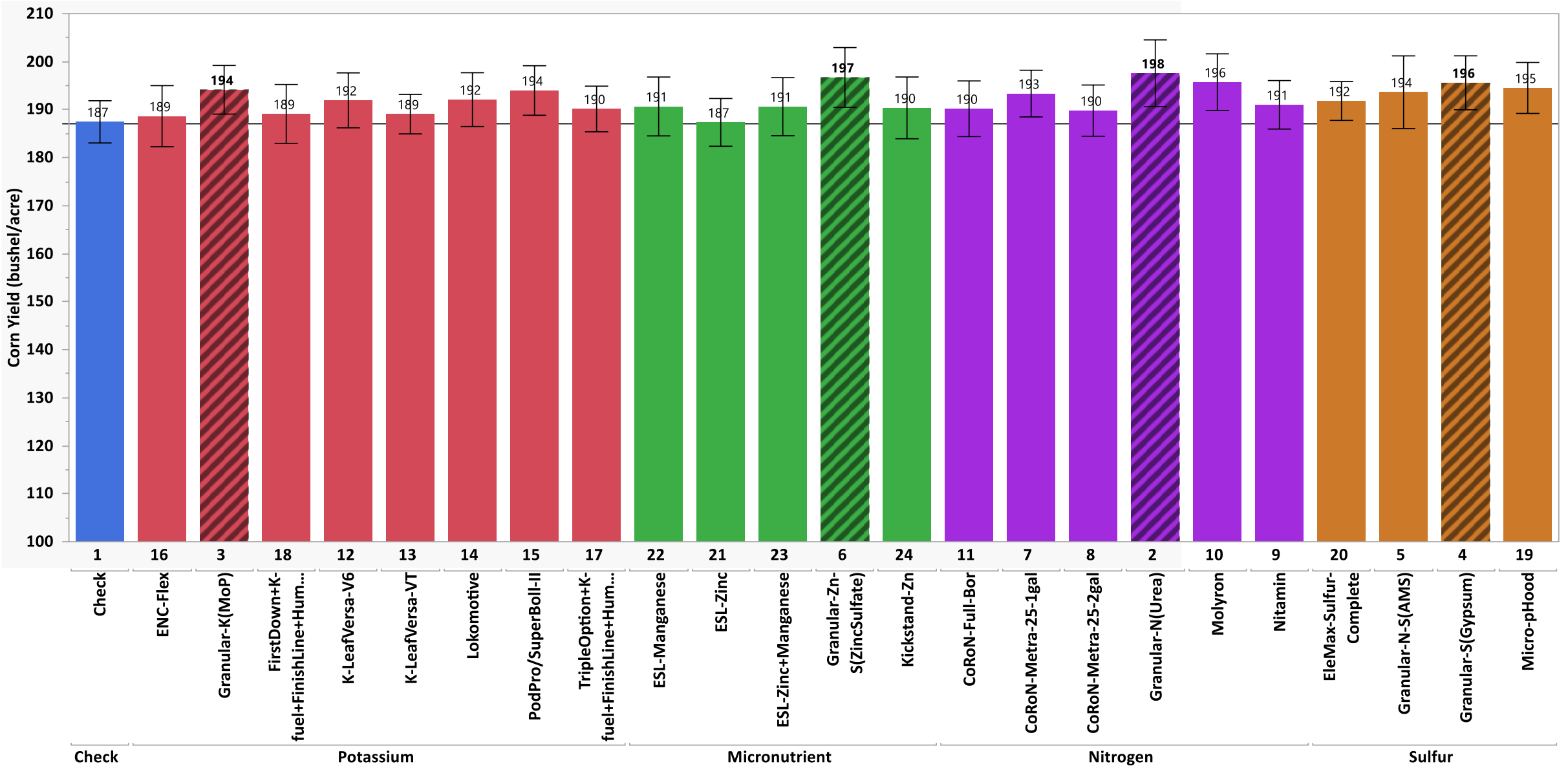
Trt #	Company	Fertilizer Name	Application Rate gal or lb/ac	Application Time stage
1	Producer	Check (Producers' Std.)		
2	Specialist	Granular-N (Urea)	100.00	V11-12
3	Specialist	Granular-K (MoP)	50.00	V11-12
4	Specialist	Granular-S (Gypsum)	150.00	V11-12
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	V11-12
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	V11-12
7	Helena	CoRoN Metra 25-1gal	1.00	V6-7
8	Helena	CoRoN Metra 25-2gal	2.00	V6-7
9	Koch	Nitamin	4.00	V6-7 & V11-12
10	Ouachita	Molyron	1.00	V6-7 & V11-12
11	Helena	CoRoN Full Bor	0.13	V6-7
12	Helena	K-Leaf Versa-V6	0.25	V6-7
13	Helena	K-Leaf Versa-V6 & V12	0.50	V6-7 & V11-12
14	Nutrien	Lokomotive	2.00	V11-12 & R1-2
15	Ouachita	Pod Pro/Super Boll II	2.00	V11-12
16	Helena	ENC Flex	0.25	V6-7
17	Nachurs	TO+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2
18	Nachurs	FD+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2
19	ESL	Micro-pHood	0.50	V3-4 & V6-7
20	Helena	EleMax Sulfur Complete	1.00	V6-7
21	ESL	ESL Zinc	0.25	V6-7 & V11-12
22	ESL	ESL Manganese	0.25	V6-7 & V11-12
23	ESL	ESL Zinc Manganese	0.50	V6-7 & V11-12
24	Helena	Kickstand Zn	0.25	V6-7



# Foliar Fertilizer Treatments and Nutrient Content for Corn

Trt #	Company	Fertilizer Name	Application Rate	Application Time	Total Amount of Nutrient Applied												
					N	P2O5	K2O	Ca	Mg	S	B	Zn	Mn	Cu	Fe	Mo	Co
			gal or lb/ac	stage	.....lb acre <sup>-1</sup> .....												
1	Producer	Check (Producers' Std.)															
2	Specialist	Granular-N (Urea)	100.00	V11-12	46.00	.	.	.	.	.	.	.	.	.	.	.	.
3	Specialist	Granular-K (MoP)	50.00	V11-12	.	30.00	.	.	.	.	.	.	.	.	.	.	.
4	Specialist	Granular-S (Gypsum)	150.00	V11-12	.	.	.	34.50	.	24.00	.	.	.	.	.	.	.
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	V11-12	21.00	.	.	.	.	24.00	.	.	.	.	.	.	.
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	V11-12	.	.	.	.	.	2.50	10.00	.	.	.	.	.	.
7	Helena	CoRoN Metra 25-1gal	1.00	V6-7	2.48	.	.	.	.	.	.	.	.	.	.	.	.
8	Helena	CoRoN Metra 25-2gal	2.00	V6-7	4.95	.	.	.	.	.	.	.	.	.	.	.	.
9	Koch	Nitamin	4.00	V6-7 & V11-12	12.60	.	.	.	.	.	.	.	.	.	.	.	.
10	Ouachita	Molyron	1.00	V6-7 & V11-12	0.99	.	.	.	.	0.27	.	.	.	.	0.421	0.00990	.
11	Helena	CoRoN Full Bor	0.13	V6-7	0.16	.	.	.	.	.	0.065	.	.	.	.	.	.
12	Helena	K-Leaf Versa-V6	0.25	V6-7	.	0.82	.	.	.	0.001	0.001	0.001	.	.	0.00001	.	.
13	Helena	K-Leaf Versa-V6 & V12	0.50	V6-7 & V11-12	.	1.64	.	.	.	0.001	0.003	0.003	.	.	0.00003	.	.
14	Nutrien	Lokomotive	2.00	V11-12 & R1-2	0.43	5.43	.	.	.	.	.	.	.	.	.	.	.
15	Ouachita	Pod Pro/Super Boll II	2.00	V11-12	0.76	1.91	.	.	.	0.038	0.038	.	.	.	0.00611	.	.
16	Helena	ENC Flex	0.25	V6-7	0.27	0.15	0.12	.	.	0.001	0.001	.	.	.	.	.	.
17	Nachurs	TO+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	1.54	3.28	4.53	.	.	0.14	0.146	0.026	0.026	0.005	0.00010	0.0005	.
18	Nachurs	FD+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	1.90	3.84	2.94	.	.	0.146	0.026	0.026	0.005	0.00010	0.0005	.	.
19	ESL	Micro-pHood	0.50	V3-4 & V6-7	.	.	.	.	0.09	0.43	0.199	0.199	0.029	.	.	.	.
20	Helena	EleMax Sulfur Complete	1.00	V6-7	.	.	.	.	0.08	0.15	0.050	0.070	.	.	0.00400	.	.
21	ESL	ESL Zinc	0.25	V6-7 & V11-12	.	.	.	.	.	0.17	0.248	.	.	.	.	.	.
22	ESL	ESL Manganese	0.25	V6-7 & V11-12	.	.	.	.	.	0.19	0.248	.	.	.	.	.	.
23	ESL	ESL Zinc Manganese	0.50	V6-7 & V11-12	.	.	.	.	.	0.37	0.393	0.169	.	.	.	.	.
24	Helena	Kickstand Zn	0.25	V6-7	.	.	.	.	.	.	0.177	.	.	.	.	.	.

# Corn Yield Across 5 Sites from 2020 to 2022



# Economic Analysis for Corn

Trt #	Company	Fertilizer Name	Application Rate	Application Time	Yield Change	G. Income @\$6.75/bu
			gal or lb/ac	stage	bu/ac	\$/acre
1	Producer	Check (Producers' Std.)			0.0	0.0
2	Specialist	Granular-N (Urea)	100.00	V11-12	+10.1	68.4
3	Specialist	Granular-K (MoP)	50.00	V11-12	+6.7	45.1
4	Specialist	Granular-S (Gypsum)	150.00	V11-12	+8.1	54.9
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	V11-12	+6.2	41.7
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	V11-12	+9.3	62.5
7	Helena	CoRoN Metra 25-1gal	1.00	V6-7	+5.9	39.8
8	Helena	CoRoN Metra 25-2gal	2.00	V6-7	+2.3	15.8
9	Koch	Nitamin	4.00	V6-7 & V11-12	+3.6	24.0
10	Ouachita	Molyron	1.00	V6-7 & V11-12	+8.3	55.8
11	Helena	CoRoN Full Bor	0.13	V6-7	+2.7	18.4
12	Helena	K-Leaf Versa-V6	0.25	V6-7	+4.5	30.3
13	Helena	K-Leaf Versa-V6 & V12	0.50	V6-7 & V11-12	+1.6	10.9
14	Nutrien	Lokomotive	2.00	V11-12 & R1-2	+4.6	31.3
15	Ouachita	Pod Pro/Super Boll II	2.00	V11-12	+6.5	44.1
16	Helena	ENC Flex	0.25	V6-7	+1.2	8.0
17	Nachurs	TO+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+2.7	18.1
18	Nachurs	FD+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+1.7	11.1
19	ESL	Micro-pHood	0.50	V3-4 & V6-7	+7.1	47.7
20	Helena	EleMax Sulfur Complete	1.00	V6-7	+4.3	29.4
21	ESL	ESL Zinc	0.25	V6-7 & V11-12	-0.1	-0.7
22	ESL	ESL Manganese	0.25	V6-7 & V11-12	+3.2	21.6
23	ESL	ESL Zinc Manganese	0.50	V6-7 & V11-12	+3.2	21.3
24	Helena	Kickstand Zn	0.25	V6-7	+2.9	19.7

# Economic Analysis for Corn

Trt #	Company	Fertilizer Name	Application Rate	Application Time	Yield Change	G. Income @\$6.75/bu	Product Price	Product Cost	Application Cost @\$8/A
			gal or lb/ac	stage	bu/ac	\$/acre	\$/unit	\$/acre	\$/acre
1	Producer	Check (Producers' Std.)			0.0	0.0	0.0	0.0	0.0
2	Specialist	Granular-N (Urea)	100.00	V11-12	+10.1	68.4	567/ton	28.3	8.0
3	Specialist	Granular-K (MoP)	50.00	V11-12	+6.7	45.1	583/ton	14.6	8.0
4	Specialist	Granular-S (Gypsum)	150.00	V11-12	+8.1	54.9	125/ton	9.4	12.0
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	V11-12	+6.2	41.7	528/ton	26.4	8.0
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	V11-12	+9.3	62.5	1.0/lb	50.0	8.0
7	Helena	CoRoN Metra 25-1gal	1.00	V6-7	+5.9	39.8	13.7/gal	13.7	8.0
8	Helena	CoRoN Metra 25-2gal	2.00	V6-7	+2.3	15.8	13.7/gal	27.5	8.0
9	Koch	Nitamin	4.00	V6-7 & V11-12	+3.6	24.0	20.0/gal	80.0	16.0
10	Ouachita	Molyron	1.00	V6-7 & V11-12	+8.3	55.8	20.0/gal	20.0	16.0
11	Helena	CoRoN Full Bor	0.13	V6-7	+2.7	18.4	30.7/gal	3.8	8.0
12	Helena	K-Leaf Versa-V6	0.25	V6-7	+4.5	30.3	29.7/gal	7.4	8.0
13	Helena	K-Leaf Versa-V6 & V12	0.50	V6-7 & V11-12	+1.6	10.9	29.7/gal	14.8	16.0
14	Nutrien	Lokomotive	2.00	V11-12 & R1-2	+4.6	31.3	17.5/gal	35.0	16.0
15	Ouachita	Pod Pro/Super Boll II	2.00	V11-12	+6.5	44.1	8.0/gal	16.0	8.0
16	Helena	ENC Flex	0.25	V6-7	+1.2	8.0	22.3/gal	5.6	8.0
17	Nachurs	TO+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+2.7	18.1	9.3/gal	38.2	24.0
18	Nachurs	FD+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+1.7	11.1	8.9/gal	36.6	24.0
19	ESL	Micro-pHood	0.50	V3-4 & V6-7	+7.1	47.7	27.0/gal	13.5	8.0
20	Helena	EleMax Sulfur Complete	1.00	V6-7	+4.3	29.4	9.7/lb	9.7	8.0
21	ESL	ESL Zinc	0.25	V6-7 & V11-12	-0.1	-0.7	27.0/gal	6.8	16.0
22	ESL	ESL Manganese	0.25	V6-7 & V11-12	+3.2	21.6	27.0/gal	6.8	16.0
23	ESL	ESL Zinc Manganese	0.50	V6-7 & V11-12	+3.2	21.3	27.0/gal	13.5	16.0
24	Helena	Kickstand Zn	0.25	V6-7	+2.9	19.7	32.2/gal	8.1	8.0

# Economic Analysis for Corn

Trt #	Company	Fertilizer Name	Application	Application	Yield	G. Income	Product	Product	Application	Net Income	
			Rate	Time	Change	@\$6.75/bu	Price	Cost	Cost @\$8/A	w/o A. Cost	w/ A. Cost
			gal or lb/ac	stage	bu/ac	\$/acre	\$/unit	\$/acre	\$/acre	\$/acre	\$/acre
1	Producer	Check (Producers' Std.)			0.0	0.0	0.0	0.0	0.0	<b>0</b>	<b>0</b>
2	Specialist	Granular-N (Urea)	100.00	V11-12	+10.1	68.4	567/ton	28.3	8.0	<b>+40</b>	<b>+32</b>
3	Specialist	Granular-K (MoP)	50.00	V11-12	+6.7	45.1	583/ton	14.6	8.0	<b>+31</b>	<b>+23</b>
4	Specialist	Granular-S (Gypsum)	150.00	V11-12	+8.1	54.9	125/ton	9.4	12.0	<b>+46</b>	<b>+34</b>
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	V11-12	+6.2	41.7	528/ton	26.4	8.0	<b>+15</b>	<b>+7</b>
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	V11-12	+9.3	62.5	1.0/lb	50.0	8.0	<b>+12</b>	<b>+4</b>
7	Helena	CoRoN Metra 25-1gal	1.00	V6-7	+5.9	39.8	13.7/gal	13.7	8.0	<b>+26</b>	<b>+18</b>
8	Helena	CoRoN Metra 25-2gal	2.00	V6-7	+2.3	15.8	13.7/gal	27.5	8.0	<b>-12</b>	<b>-20</b>
9	Koch	Nitamin	4.00	V6-7 & V11-12	+3.6	24.0	20.0/gal	80.0	16.0	<b>-56</b>	<b>-72</b>
10	Ouachita	Molyron	1.00	V6-7 & V11-12	+8.3	55.8	20.0/gal	20.0	16.0	<b>+36</b>	<b>+20</b>
11	Helena	CoRoN Full Bor	0.13	V6-7	+2.7	18.4	30.7/gal	3.8	8.0	<b>+15</b>	<b>+7</b>
12	Helena	K-Leaf Versa-V6	0.25	V6-7	+4.5	30.3	29.7/gal	7.4	8.0	<b>+23</b>	<b>+15</b>
13	Helena	K-Leaf Versa-V6 & V12	0.50	V6-7 & V11-12	+1.6	10.9	29.7/gal	14.8	16.0	<b>-4</b>	<b>-20</b>
14	Nutrien	Lokomotive	2.00	V11-12 & R1-2	+4.6	31.3	17.5/gal	35.0	16.0	<b>-4</b>	<b>-20</b>
15	Ouachita	Pod Pro/Super Boll II	2.00	V11-12	+6.5	44.1	8.0/gal	16.0	8.0	<b>+28</b>	<b>+20</b>
16	Helena	ENC Flex	0.25	V6-7	+1.2	8.0	22.3/gal	5.6	8.0	<b>+2</b>	<b>-6</b>
17	Nachurs	TO+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+2.7	18.1	9.3/gal	38.2	24.0	<b>-20</b>	<b>-44</b>
18	Nachurs	FD+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+1.7	11.1	8.9/gal	36.6	24.0	<b>-25</b>	<b>-49</b>
19	ESL	Micro-pHood	0.50	V3-4 & V6-7	+7.1	47.7	27.0/gal	13.5	8.0	<b>+34</b>	<b>+26</b>
20	Helena	EleMax Sulfur Complete	1.00	V6-7	+4.3	29.4	9.7/lb	9.7	8.0	<b>+20</b>	<b>+12</b>
21	ESL	ESL Zinc	0.25	V6-7 & V11-12	-0.1	-0.7	27.0/gal	6.8	16.0	<b>-7</b>	<b>-23</b>
22	ESL	ESL Manganese	0.25	V6-7 & V11-12	+3.2	21.6	27.0/gal	6.8	16.0	<b>+15</b>	<b>-1</b>
23	ESL	ESL Zinc Manganese	0.50	V6-7 & V11-12	+3.2	21.3	27.0/gal	13.5	16.0	<b>+8</b>	<b>-8</b>
24	Helena	Kickstand Zn	0.25	V6-7	+2.9	19.7	32.2/gal	8.1	8.0	<b>+12</b>	<b>+4</b>



# Economic Analysis for Corn

Trt #	Company	Fertilizer Name	Application	Application	Yield	G. Income	Product	Product	Application	Net Income		≥5 bu Yield
			Rate	Time	Change	@\$6.75/bu	Price	Cost	Cost @\$8/A	w/o A. Cost	w/ A. Cost	Probability
			gal or lb/ac	stage	bu/ac	\$/acre	\$/unit	\$/acre	\$/acre	\$/acre	\$/acre	%
1	Producer	Check (Producers' Std.)			0.0	0.0	0.0	0.0	0.0	<b>0</b>	<b>0</b>	-
2	Specialist	Granular-N (Urea)	100.00	V11-12	+10.1	68.4	567/ton	28.3	8.0	<b>+40</b>	<b>+32</b>	40
3	Specialist	Granular-K (MoP)	50.00	V11-12	+6.7	45.1	583/ton	14.6	8.0	<b>+31</b>	<b>+23</b>	20
4	Specialist	Granular-S (Gypsum)	150.00	V11-12	+8.1	54.9	125/ton	9.4	12.0	<b>+46</b>	<b>+34</b>	20
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	V11-12	+6.2	41.7	528/ton	26.4	8.0	<b>+15</b>	<b>+7</b>	20
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	V11-12	+9.3	62.5	1.0/lb	50.0	8.0	<b>+12</b>	<b>+4</b>	40
7	Helena	CoRoN Metra 25-1gal	1.00	V6-7	+5.9	39.8	13.7/gal	13.7	8.0	<b>+26</b>	<b>+18</b>	40
8	Helena	CoRoN Metra 25-2gal	2.00	V6-7	+2.3	15.8	13.7/gal	27.5	8.0	<b>-12</b>	<b>-20</b>	40
9	Koch	Nitamin	4.00	V6-7 & V11-12	+3.6	24.0	20.0/gal	80.0	16.0	<b>-56</b>	<b>-72</b>	20
10	Ouachita	Molyron	1.00	V6-7 & V11-12	+8.3	55.8	20.0/gal	20.0	16.0	<b>+36</b>	<b>+20</b>	20
11	Helena	CoRoN Full Bor	0.13	V6-7	+2.7	18.4	30.7/gal	3.8	8.0	<b>+15</b>	<b>+7</b>	20
12	Helena	K-Leaf Versa-V6	0.25	V6-7	+4.5	30.3	29.7/gal	7.4	8.0	<b>+23</b>	<b>+15</b>	40
13	Helena	K-Leaf Versa-V6 & V12	0.50	V6-7 & V11-12	+1.6	10.9	29.7/gal	14.8	16.0	<b>-4</b>	<b>-20</b>	40
14	Nutrien	Lokomotive	2.00	V11-12 & R1-2	+4.6	31.3	17.5/gal	35.0	16.0	<b>-4</b>	<b>-20</b>	20
15	Ouachita	Pod Pro/Super Boll II	2.00	V11-12	+6.5	44.1	8.0/gal	16.0	8.0	<b>+28</b>	<b>+20</b>	20
16	Helena	ENC Flex	0.25	V6-7	+1.2	8.0	22.3/gal	5.6	8.0	<b>+2</b>	<b>-6</b>	0
17	Nachurs	TO+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+2.7	18.1	9.3/gal	38.2	24.0	<b>-20</b>	<b>-44</b>	40
18	Nachurs	FD+FL+HF+BA+K-Fuel+10B	4.13	V6-7 & R1-2	+1.7	11.1	8.9/gal	36.6	24.0	<b>-25</b>	<b>-49</b>	0
19	ESL	Micro-pHood	0.50	V3-4 & V6-7	+7.1	47.7	27.0/gal	13.5	8.0	<b>+34</b>	<b>+26</b>	20
20	Helena	EleMax Sulfur Complete	1.00	V6-7	+4.3	29.4	9.7/lb	9.7	8.0	<b>+20</b>	<b>+12</b>	20
21	ESL	ESL Zinc	0.25	V6-7 & V11-12	-0.1	-0.7	27.0/gal	6.8	16.0	<b>-7</b>	<b>-23</b>	0
22	ESL	ESL Manganese	0.25	V6-7 & V11-12	+3.2	21.6	27.0/gal	6.8	16.0	<b>+15</b>	<b>-1</b>	20
23	ESL	ESL Zinc Manganese	0.50	V6-7 & V11-12	+3.2	21.3	27.0/gal	13.5	16.0	<b>+8</b>	<b>-8</b>	20
24	Helena	Kickstand Zn	0.25	V6-7	+2.9	19.7	32.2/gal	8.1	8.0	<b>+12</b>	<b>+4</b>	20

# Foliar Fertilizer Treatments and Nutrient Content for Soybean

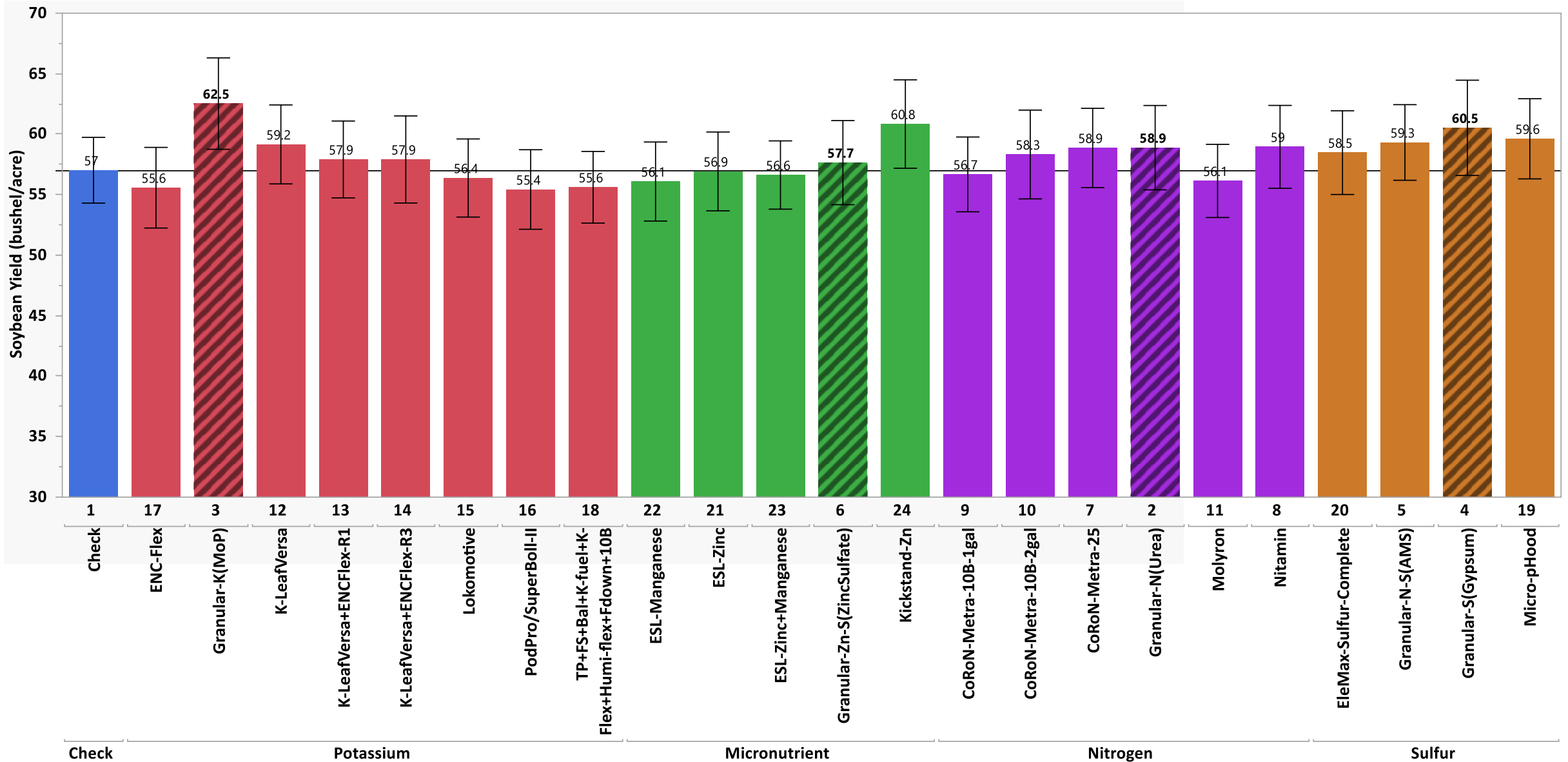
Trt #	Company	Fertilizer Name	Application Rate gal or lb/ac	Application Time stage
1	Producer	Check (Producers' Std.)		
2	Specialist	Granular-N (Urea)	100.00	R2-3
3	Specialist	Granular-K (MoP)	50.00	R2-3
4	Specialist	Granular-S (Gypsum)	150.00	R2-3
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	R2-3
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	R2-3
7	Helena	CoRoN Metra 25	1.00	R2-3
8	Koch	Nitamin	4.00	R2-3 & R4-5
9	Helena	CoRoN Metra 10B-1gal	1.00	R2-3
10	Helena	CoRoN Metra 10B-2gal	2.00	R2-3
11	Ouachita	Molyron	1.00	V3-4 & R1
12	Helena	K-Leaf Versa	0.25	R1
13	Helena	K-Leaf Versa+ENC Flex-R1	0.38	R1
14	Helena	K-Leaf Versa+ENC Flex-R3	0.38	R3
15	Nutrien	Lokomotive	1.00	R2-3
16	Ouachita	Pod Pro/Super Boll II	6.00	R1 & R3
17	Helena	ENC Flex	0.13	V3-4
18	Nachurs	TO+FL+HF+BA+K-F+10B etc.	8.13	V3,R1,R2,R3,R5
19	ESL	Micro-pHood	0.75	V3-4, R1, & R3
20	Helena	EleMax Sulfur Complete	1.00	V3-4 & R1
21	ESL	ESL Zinc	0.38	V3-4, R1, & R3
22	ESL	ESL Manganese	0.38	V3-4, R1, & R3
23	ESL	ESL Zinc Manganese	0.75	V3-4, R1, & R3
24	Helena	Kickstand Zn	0.25	V3-4



# Foliar Fertilizer Treatments and Nutrient Content for Soybean

Trt #	Company	Fertilizer Name	Application Rate	Application Time	Total Amount of Nutrient Applied												
					N	P2O5	K2O	Ca	Mg	S	B	Zn	Mn	Cu	Fe	Mo	Co
			gal or lb/ac	stage	.....lb acre <sup>-1</sup> .....												
1	Producer	Check (Producers' Std.)															
2	Specialist	Granular-N (Urea)	100.00	R2-3	46.00	.	.	.	.	.	.	.	.	.	.	.	.
3	Specialist	Granular-K (MoP)	50.00	R2-3	.	30.00	.	.	.	.	.	.	.	.	.	.	.
4	Specialist	Granular-S (Gypsum)	150.00	R2-3	.	.	.	34.50	.	24.00	.	.	.	.	.	.	.
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	R2-3	21.00	.	.	.	.	24.00	.	.	.	.	.	.	.
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	R2-3	.	.	.	.	.	2.50	.	10.00	.	.	.	.	.
7	Helena	CoRoN Metra 25	1.00	R2-3	2.48	.	.	.	.	.	.	.	.	.	.	.	.
8	Koch	Nitamin	4.00	R2-3 & R4-5	12.60	.	.	.	.	.	.	.	.	.	.	.	.
9	Helena	CoRoN Metra 10B-1gal	1.00	R2-3	1.00	.	1.00	.	.	.	0.050	.	.	.	.	.	.
10	Helena	CoRoN Metra 10B-2gal	2.00	R2-3	2.00	.	2.00	.	.	.	0.100	.	.	.	.	.	.
11	Ouachita	Molyron	1.00	V3-4 & R1	0.99	.	.	.	.	0.27	.	.	.	.	0.421	0.00990	.
12	Helena	K-Leaf Versa	0.25	R1	.	.	0.41	.	.	.	0.001	0.001	0.001	.	.	0.00001	.
13	Helena	K-Leaf Versa+ENC Flex-R1	0.38	R1	0.14	0.07	0.88	.	.	.	0.001	0.002	0.001	.	.	0.00001	.
14	Helena	K-Leaf Versa+ENC Flex-R3	0.38	R3	0.14	0.07	0.88	.	.	.	0.001	0.002	0.001	.	.	0.00001	.
15	Nutrien	Lokomotive	1.00	R2-3	0.22	.	2.71	.	.	.	.	.	.	.	.	.	.
16	Ouachita	Pod Pro/Super Boll II	6.00	R1 & R3	2.29	.	5.72	.	.	.	0.115	0.115	.	.	.	0.01832	.
17	Helena	ENC Flex	0.13	V3-4	0.14	0.07	0.06	.	.	.	0.001	0.001	.	.	.	.	.
18	Nachurs	TO+FL+HF+BA+K-F+10B etc.	8.13	V3,R1,R2,R3,R5	4.58	5.04	9.90	.	.	0.80	0.290	0.026	0.026	0.005	.	0.00010	0.0006
19	ESL	Micro-pHood	0.75	V3-4, R1, & R3	.	.	.	.	0.13	0.65	.	0.299	0.299	.	0.043	.	.
20	Helena	EleMax Sulfur Complete	1.00	V3-4 & R1	.	.	.	.	0.08	0.15	0.050	.	0.070	.	.	0.00400	.
21	ESL	ESL Zinc	0.38	V3-4, R1, & R3	.	.	.	.	.	0.25	.	0.371	.	.	.	.	.
22	ESL	ESL Manganese	0.38	V3-4, R1, & R3	.	.	.	.	.	0.29	.	0.371	.	.	.	.	.
23	ESL	ESL Zinc Manganese	0.75	V3-4, R1, & R3	.	.	.	.	.	0.56	.	0.590	0.253	.	.	.	.
24	Helena	Kickstand Zn	0.25	V3-4	.	.	.	.	.	.	.	0.177	.	.	.	.	.

# Soybean Yield Across 5 Sites from 2020 to 2022



# Economic Analysis for Soybean

Trt #	Company	Fertilizer Name	Application Rate	Application Time	Yield Change	G. Income @\$15.0/bu
			gal or lb/ac	stage	bu/ac	\$/acre
1	Producer	Check (Producers' Std.)			0.0	0.0
2	Specialist	Granular-N (Urea)	100.00	R2-3	+1.9	28.0
3	Specialist	Granular-K (MoP)	50.00	R2-3	+5.5	82.7
4	Specialist	Granular-S (Gypsum)	150.00	R2-3	+3.5	52.6
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	R2-3	+2.3	34.4
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	R2-3	+0.6	9.4
7	Helena	CoRoN Metra 25	1.00	R2-3	+1.8	27.6
8	Koch	Nitamin	4.00	R2-3 & R4-5	+1.9	29.0
9	Helena	CoRoN Metra 10B-1gal	1.00	R2-3	-0.3	-5.2
10	Helena	CoRoN Metra 10B-2gal	2.00	R2-3	+1.3	19.5
11	Ouachita	Molyron	1.00	V3-4 & R1	-0.9	-13.2
12	Helena	K-Leaf Versa	0.25	R1	+2.1	32.0
13	Helena	K-Leaf Versa+ENC Flex-R1	0.38	R1	+0.9	13.4
14	Helena	K-Leaf Versa+ENC Flex-R3	0.38	R3	+0.9	13.4
15	Nutrien	Lokomotive	1.00	R2-3	-0.6	-9.6
16	Ouachita	Pod Pro/Super Boll II	6.00	R1 & R3	-1.6	-23.9
17	Helena	ENC Flex	0.13	V3-4	-1.4	-21.7
18	Nachurs	TO+FL+HF+BA+K-F+10B etc.	8.13	V3,R1,R2,R3,R5	-1.4	-21.1
19	ESL	Micro-pHood	0.75	V3-4, R1, & R3	+2.6	39.0
20	Helena	EleMax Sulfur Complete	1.00	V3-4 & R1	+1.5	21.8
21	ESL	ESL Zinc	0.38	V3-4, R1, & R3	-0.1	-1.5
22	ESL	ESL Manganese	0.38	V3-4, R1, & R3	-0.9	-14.0
23	ESL	ESL Zinc Manganese	0.75	V3-4, R1, & R3	-0.4	-5.9
24	Helena	Kickstand Zn	0.25	V3-4	+3.8	57.3

# Economic Analysis for Soybean

Trt #	Company	Fertilizer Name	Application Rate	Application Time	Yield Change	G. Income @\$15.0/bu	Product Price	Product Cost	Application Cost @\$8/A
			gal or lb/ac	stage	bu/ac	\$/acre	\$/unit	\$/acre	\$/acre
1	Producer	Check (Producers' Std.)			0.0	0.0	0.0	0	0.0
2	Specialist	Granular-N (Urea)	100.00	R2-3	+1.9	28.0	567/ton	28.3	8.0
3	Specialist	Granular-K (MoP)	50.00	R2-3	+5.5	82.7	583/ton	14.6	8.0
4	Specialist	Granular-S (Gypsum)	150.00	R2-3	+3.5	52.6	125/ton	9.4	12.0
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	R2-3	+2.3	34.4	528/ton	26.4	8.0
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	R2-3	+0.6	9.4	1.0/lb	50.0	8.0
7	Helena	CoRoN Metra 25	1.00	R2-3	+1.8	27.6	13.7/gal	13.7	8.0
8	Koch	Nitamin	4.00	R2-3 & R4-5	+1.9	29.0	20.0/gal	80.0	16.0
9	Helena	CoRoN Metra 10B-1gal	1.00	R2-3	-0.3	-5.2	7.35/gal	7.4	8.0
10	Helena	CoRoN Metra 10B-2gal	2.00	R2-3	+1.3	19.5	7.35/gal	14.7	8.0
11	Ouachita	Molyron	1.00	V3-4 & R1	-0.9	-13.2	20.0/gal	20.0	16.0
12	Helena	K-Leaf Versa	0.25	R1	+2.1	32.0	29.7/gal	3.7	8.0
13	Helena	K-Leaf Versa+ENC Flex-R1	0.38	R1	+0.9	13.4	27.2/gal	10.2	8.0
14	Helena	K-Leaf Versa+ENC Flex-R3	0.38	R3	+0.9	13.4	27.2/gal	10.2	8.0
15	Nutrien	Lokomotive	1.00	R2-3	-0.6	-9.6	17.5/gal	17.5	8.0
16	Ouachita	Pod Pro/Super Boll II	6.00	R1 & R3	-1.6	-23.9	8.0/gal	48.0	16.0
17	Helena	ENC Flex	0.13	V3-4	-1.4	-21.7	22.3/gal	2.8	8.0
18	Nachurs	TO+FL+HF+BA+K-F+10B etc.	8.13	V3,R1,R2,R3,R5	-1.4	-21.1	8.41/gal	68.4	40.0
19	ESL	Micro-pHood	0.75	V3-4, R1, & R3	+2.6	39.0	27.0/gal	20.3	24.0
20	Helena	EleMax Sulfur Complete	1.00	V3-4 & R1	+1.5	21.8	9.7/lb	9.7	16.0
21	ESL	ESL Zinc	0.38	V3-4, R1, & R3	-0.1	-1.5	27.0/gal	10.1	24.0
22	ESL	ESL Manganese	0.38	V3-4, R1, & R3	-0.9	-14.0	27.0/gal	10.1	24.0
23	ESL	ESL Zinc Manganese	0.75	V3-4, R1, & R3	-0.4	-5.9	27.0/gal	20.3	24.0
24	Helena	Kickstand Zn	0.25	V3-4	+3.8	57.3	32.2/gal	8.1	8.0

# Economic Analysis for Soybean

Trt #	Company	Fertilizer Name	Application	Application	Yield	G. Income	Product	Product	Application	Net Income	
			Rate	Time	Change	@\$15.0/bu	Price	Cost	Cost @\$8/A	w/o A. Cost	w/ A. Cost
			gal or lb/ac	stage	bu/ac	\$/acre	\$/unit	\$/acre	\$/acre	\$/acre	\$/acre
1	Producer	Check (Producers' Std.)			0.0	0.0	0.0	0	0.0	<b>0</b>	<b>0</b>
2	Specialist	Granular-N (Urea)	100.00	R2-3	+1.9	28.0	567/ton	28.3	8.0	<b>0</b>	<b>-8</b>
3	Specialist	Granular-K (MoP)	50.00	R2-3	+5.5	82.7	583/ton	14.6	8.0	<b>+68</b>	<b>+60</b>
4	Specialist	Granular-S (Gypsum)	150.00	R2-3	+3.5	52.6	125/ton	9.4	12.0	<b>+43</b>	<b>+31</b>
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	R2-3	+2.3	34.4	528/ton	26.4	8.0	<b>+8</b>	<b>0</b>
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	R2-3	+0.6	9.4	1.0/lb	50.0	8.0	<b>-41</b>	<b>-49</b>
7	Helena	CoRoN Metra 25	1.00	R2-3	+1.8	27.6	13.7/gal	13.7	8.0	<b>+14</b>	<b>+6</b>
8	Koch	Nitamin	4.00	R2-3 & R4-5	+1.9	29.0	20.0/gal	80.0	16.0	<b>-51</b>	<b>-67</b>
9	Helena	CoRoN Metra 10B-1gal	1.00	R2-3	-0.3	-5.2	7.35/gal	7.4	8.0	<b>-13</b>	<b>-21</b>
10	Helena	CoRoN Metra 10B-2gal	2.00	R2-3	+1.3	19.5	7.35/gal	14.7	8.0	<b>+5</b>	<b>-3</b>
11	Ouachita	Molyron	1.00	V3-4 & R1	-0.9	-13.2	20.0/gal	20.0	16.0	<b>-33</b>	<b>-49</b>
12	Helena	K-Leaf Versa	0.25	R1	+2.1	32.0	29.7/gal	3.7	8.0	<b>+28</b>	<b>+20</b>
13	Helena	K-Leaf Versa+ENC Flex-R1	0.38	R1	+0.9	13.4	27.2/gal	10.2	8.0	<b>+3</b>	<b>-5</b>
14	Helena	K-Leaf Versa+ENC Flex-R3	0.38	R3	+0.9	13.4	27.2/gal	10.2	8.0	<b>+3</b>	<b>-5</b>
15	Nutrien	Lokomotive	1.00	R2-3	-0.6	-9.6	17.5/gal	17.5	8.0	<b>-27</b>	<b>-35</b>
16	Ouachita	Pod Pro/Super Boll II	6.00	R1 & R3	-1.6	-23.9	8.0/gal	48.0	16.0	<b>-72</b>	<b>-88</b>
17	Helena	ENC Flex	0.13	V3-4	-1.4	-21.7	22.3/gal	2.8	8.0	<b>-24</b>	<b>-32</b>
18	Nachurs	TO+FL+HF+BA+K-F+10B etc.	8.13	V3,R1,R2,R3,R5	-1.4	-21.1	8.41/gal	68.4	40.0	<b>-89</b>	<b>-129</b>
19	ESL	Micro-pHood	0.75	V3-4, R1, & R3	+2.6	39.0	27.0/gal	20.3	24.0	<b>+19</b>	<b>-5</b>
20	Helena	EleMax Sulfur Complete	1.00	V3-4 & R1	+1.5	21.8	9.7/lb	9.7	16.0	<b>+12</b>	<b>-4</b>
21	ESL	ESL Zinc	0.38	V3-4, R1, & R3	-0.1	-1.5	27.0/gal	10.1	24.0	<b>-12</b>	<b>-36</b>
22	ESL	ESL Manganese	0.38	V3-4, R1, & R3	-0.9	-14.0	27.0/gal	10.1	24.0	<b>-24</b>	<b>-48</b>
23	ESL	ESL Zinc Manganese	0.75	V3-4, R1, & R3	-0.4	-5.9	27.0/gal	20.3	24.0	<b>-26</b>	<b>-50</b>
24	Helena	Kickstand Zn	0.25	V3-4	+3.8	57.3	32.2/gal	8.1	8.0	<b>+49</b>	<b>+41</b>

# Economic Analysis for Soybean

Trt #	Company	Fertilizer Name	Application Rate	Application Time	Yield Change	G. Income @\$15.0/bu	Product Price	Product Cost	Application Cost @\$8/A	Net Income w/o A. Cost	Net Income w/ A. Cost	≥2 bu Yield Probability
			gal or lb/ac	stage	bu/ac	\$/acre	\$/unit	\$/acre	\$/acre	\$/acre	\$/acre	%
1	Producer	Check (Producers' Std.)			0.0	0.0	0.0	0	0.0	<b>0</b>	<b>0</b>	-
2	Specialist	Granular-N (Urea)	100.00	R2-3	+1.9	28.0	567/ton	28.3	8.0	<b>0</b>	<b>-8</b>	0
3	Specialist	Granular-K (MoP)	50.00	R2-3	+5.5	82.7	583/ton	14.6	8.0	<b>+68</b>	<b>+60</b>	40
4	Specialist	Granular-S (Gypsum)	150.00	R2-3	+3.5	52.6	125/ton	9.4	12.0	<b>+43</b>	<b>+31</b>	40
5	Specialist	Granular-N+S (Am.Sulfate)	100.00	R2-3	+2.3	34.4	528/ton	26.4	8.0	<b>+8</b>	<b>0</b>	20
6	Specialist	Granular-Zn+S (Zn Sulfate)	50.00	R2-3	+0.6	9.4	1.0/lb	50.0	8.0	<b>-41</b>	<b>-49</b>	0
7	Helena	CoRoN Metra 25	1.00	R2-3	+1.8	27.6	13.7/gal	13.7	8.0	<b>+14</b>	<b>+6</b>	40
8	Koch	Nitamin	4.00	R2-3 & R4-5	+1.9	29.0	20.0/gal	80.0	16.0	<b>-51</b>	<b>-67</b>	0
9	Helena	CoRoN Metra 10B-1gal	1.00	R2-3	-0.3	-5.2	7.35/gal	7.4	8.0	<b>-13</b>	<b>-21</b>	20
10	Helena	CoRoN Metra 10B-2gal	2.00	R2-3	+1.3	19.5	7.35/gal	14.7	8.0	<b>+5</b>	<b>-3</b>	20
11	Ouachita	Molyron	1.00	V3-4 & R1	-0.9	-13.2	20.0/gal	20.0	16.0	<b>-33</b>	<b>-49</b>	0
12	Helena	K-Leaf Versa	0.25	R1	+2.1	32.0	29.7/gal	3.7	8.0	<b>+28</b>	<b>+20</b>	40
13	Helena	K-Leaf Versa+ENC Flex-R1	0.38	R1	+0.9	13.4	27.2/gal	10.2	8.0	<b>+3</b>	<b>-5</b>	20
14	Helena	K-Leaf Versa+ENC Flex-R3	0.38	R3	+0.9	13.4	27.2/gal	10.2	8.0	<b>+3</b>	<b>-5</b>	40
15	Nutrien	Lokomotive	1.00	R2-3	-0.6	-9.6	17.5/gal	17.5	8.0	<b>-27</b>	<b>-35</b>	0
16	Ouachita	Pod Pro/Super Boll II	6.00	R1 & R3	-1.6	-23.9	8.0/gal	48.0	16.0	<b>-72</b>	<b>-88</b>	20
17	Helena	ENC Flex	0.13	V3-4	-1.4	-21.7	22.3/gal	2.8	8.0	<b>-24</b>	<b>-32</b>	0
18	Nachurs	TO+FL+HF+BA+K-F+10B etc.	8.13	V3,R1,R2,R3,R5	-1.4	-21.1	8.41/gal	68.4	40.0	<b>-89</b>	<b>-129</b>	0
19	ESL	Micro-pHood	0.75	V3-4, R1, & R3	+2.6	39.0	27.0/gal	20.3	24.0	<b>+19</b>	<b>-5</b>	0
20	Helena	EleMax Sulfur Complete	1.00	V3-4 & R1	+1.5	21.8	9.7/lb	9.7	16.0	<b>+12</b>	<b>-4</b>	0
21	ESL	ESL Zinc	0.38	V3-4, R1, & R3	-0.1	-1.5	27.0/gal	10.1	24.0	<b>-12</b>	<b>-36</b>	0
22	ESL	ESL Manganese	0.38	V3-4, R1, & R3	-0.9	-14.0	27.0/gal	10.1	24.0	<b>-24</b>	<b>-48</b>	0
23	ESL	ESL Zinc Manganese	0.75	V3-4, R1, & R3	-0.4	-5.9	27.0/gal	20.3	24.0	<b>-26</b>	<b>-50</b>	0
24	Helena	Kickstand Zn	0.25	V3-4	+3.8	57.3	32.2/gal	8.1	8.0	<b>+49</b>	<b>+41</b>	40



## Take home messages .....

- ✓ Producers may not need any in-season supplemental fertilizers if they start with a good fertility program following LSU AgCenter recommendations.
- ✓ Know the nutrient type and calculate the nutrient content and cost of the foliar fertilizer product based on application rate/time before use.

# Thank You

