JANUARY 13, 2022

2021 HARVEST DATA







RESEARCH & DEVELOPMENT

RESULTS DRIVEN



Welcome to the 2021 Central Valley Ag ACS Innovation Series Review book. In keeping up with Constant Innovation -- one of the core values at Central Valley Ag -- we hope that you find this book to be a valuable resource in your 2022 decision-making process. The insights in this book are derived from the four ACS Innovation Sites: Cuba, Kansas; Polk, Nebraska; Norfolk, Nebraska; and Akron, Iowa. Along with the data from the trials, we will provide you a brief summary of how the products tested performed at each site during the growing season.



2021

OVERVIEW

We saw tremendous corn and soybean yields at our Polk and Norfolk, NE plots. Our overall corn average yield in our treatments at Polk was 318 bu/acre. This was the first year we had an entire Innovation site go over 300 bu. In Norfolk, corn averaged 289 bu/acre. Soybean yields averaged over 80 bu/acre in both Polk and Norfolk. Mother Nature challenged us with drought and severe wind at our Akron, lowa plot. In the end, we had to completely throw out the Akron data. Corn yields averaged under 100 bu/acre, and soybeans averaged under 35 bu.

The water holding capacity of the soil in individual plots seemed to overshadow any variation caused by treatments. Lack of rainfall also hampered yields at our Cuba, KS plots. We could not use some data where soil issues, planter issues, application issues, or weather issues overwhelmingly influenced results. Our team is confident in presenting you with data that is repeatable and can help you make decisions to improve your farm's profitability.

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MRTHMAN



























- We produced tremendous yields in 2021 using our established practices and the products we showcase and trial. We are extremely proud of our 318bu/acre site average at Polk.
- MicroEssentials SZ continues to demonstrate that it is a great product to improve both corn and soybean yields.
- Calcium Products SO4 produces great yield increases at a very reasonable cost.
- Five years of testing CVA Elite PHP shows that the product continues to increase corn yield and ROI. In 2021 we chose to discontinue testing PHP alone and worked on trials with PHP stacked with other products. It performed very well stacked with other products.
- We continue to test carbon-based products. TerraNu left the market in 2020, so we replaced it with Susterrra from Mosaic and 9-6-1 from NatureSafe (a division of Darling).
- We continue to get good results from CVA Elite PHP when stacking it with other foliar products.
- Soybean seed treatment is beneficial, but we need to know what and where our threats are to maximize the benefit of treating soybean seed.

*I BREVANT...
seeds

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2021 SOYBEAN PLANTING DATES

Our standard soybean planting date this year was April 29th. For comparison, our early and late planting dates were April 1st and 6th, May 13th, and June 1st. The goal with earlier planting dates is to see if planting beans earlier than usual can give us a nice ROI on the operation. Planting earlier could also free up some time during that busy spring season.

We learned from early planting this year that our April 29th planting date was ideal in our Polk, NE plot. We did have some weed pressure in these plots that caused some yield variation only partially related to planting date. The earlier planted beans also had to sit for a while in some very cold soil before they got going.

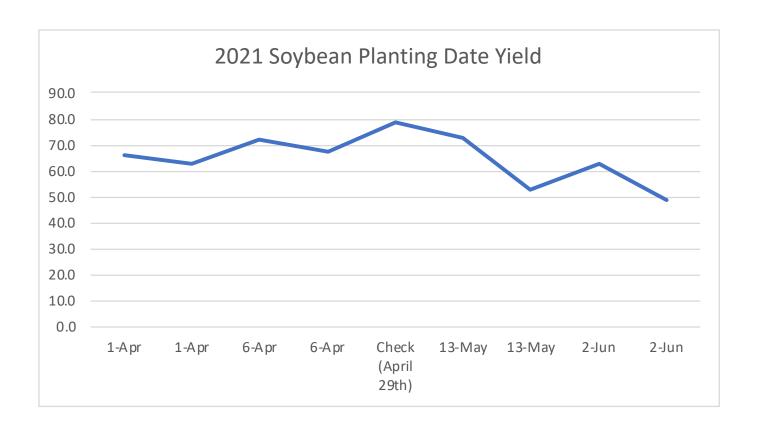
- Our earliest planted beans (April 1st) gave us a 15-bushel loss compared to our regular planted beans of April 29th.
- April 6th planted beans gave us a loss of 9.3 bushels compared to our April 29th check.
- May 13th planted beans gave us a decrease in yield again and lost 16.3 bushels compared to our check.
- June 1st planted beans took the greatest hit with a 23-bushel loss compared to April 29th. Some of the later planted loss may be due to later canopy and more significant weed pressure in these plots.

2021 DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac
1-Apr	-14.8	-14.8	-\$173.60
6-Apr	-9.3	-9.3	-\$109.38
13-May	-16.3	-16.3	-\$192.09
6/2/21	-23.4	-23.4	-\$275.62

ACS SITE | POLK, NE

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change Yield
Check (April 29th)	79.0				
1-Apr	66.0	-13.1	\$11. <i>7</i> 6	-\$153.62	-16.5
1-Apr	62.6	-16.5	\$11. <i>7</i> 6	-\$193.59	-20.8
6-Apr	<i>7</i> 1.8	-7.3	\$11. <i>7</i> 6	-\$85.50	-9.2
6-Apr	67.7	-11.3	\$11. <i>7</i> 6	-\$133.26	-14.3
13-May	72.8	-6.2	\$11. <i>7</i> 6	-\$72.94	-7.8
13-May	52.6	-26.5	\$11. <i>7</i> 6	-\$311.24	-33.5
2-Jun	62.6	-16.4	\$11. <i>7</i> 6	-\$193.03	-20.8
2-Jun	48.6	-30.5	\$11. <i>7</i> 6	-\$358.22	-38.5



2021 PLANTER TRIAL

The planter trial is intended to show us the importance of well-calibrated seed meters as well as following the planter early in the year. We normally assume double plants will hurt yield but with the excellent growing conditions in 2021, it actually seemed to increase yield. This likely means we could have increased the population and seen increased yield this season. In most seasons, we would not expect this increase.

2021 PLANTER DATA

	Good Planting	Skips	Doubles	Difference from Good Skips	Difference from Good Doubles
Polk	321.6	284.7	322.5	-36.9	0.9
Polk	336.5	293.0	325.9	-43.4	-10.6
Norfolk	283.4	245.8	301.7	-37.6	18.4
Norfolk	287.4	247.5	307.0	-39.9	19.6
			Average Difference	-39.4	<i>7</i> .1
			Corn Price	\$5.05	\$5.05
				2021 Cost of Skips	2021 Cost of Doubles
				-\$199.19	\$35.74

APRIL 25, 2021 | BASE FERTILITY APPLIED

- 175 lbs/ac Microessntials SZ
- 50 lbs/ac 0-0-60
- 100 lbs/ac Pell Lime

APRIL 26, 2021 | CORN PLANTED

- Base Hybrid DKC65-95
- 26,500 seed/ac
- 70 lbs N /ac dribble band at planting stabilized with CVA Protect UAN
- 5 gal/ac Begin
- High yield block: 7 gal/acre of Begin and 87.5 Lbs of N stabilized with CVA Protect UAN

APRIL 26, 2021 | SOYBEANS PLANTED

- Base Variety AG41X8
- 140,000 Seeds/ac
- 3 gal/ac Begin

APRIL 26, 2021 | PRE-EMERGE HERBICIDE

- Soybean Pre-emerge
 - Class Act NG: 3 pints/100 gal
 - Fierce MTZ: 16 oz/acre
 - Roundup: 24 oz/acre
 - Destiny HC: 0.5 pt/acre
- Corn Pre-emerge
 - Class Act NG: 3 pints/100 gal
 - Fierce MTZ: 16 oz/acre
 - Roundup: 24 oz/acre
 - Destiny HC: 0.5 pt/acre

MAY 26, 2021 | POST HERBICIDE SPRAYED

- Soybean Post
 - CVA Elite D-1: 16 oz/acre
 - Engenia: 12.8 oz/acre
 - Outlook: 21 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre
 - Select Max: 10 oz/acre
- Corn Post
 - CVA Elite D-1: 16 oz/acre
 - Laudis: 30 oz/acre
 - Sterling Blue: 8 oz/acre
 - Roundup: 32 oz/acre
 - Atrazine 4L: 32 oz/acre

 - Destiny HC: 0.5 pt/acre

MAY 26, 2021 | CORN Y DROP

- 140 lbs N/ac Stabilized with CVA Protect UAN
- 33 lbs S/ac as ATS

MAY 26, 2021 | CORN FOLIAR APPLICATIONS

JULY 15, 2021 | FUNGICIDE AND INSECTICIDE APPLIED

- Trivapro: 13.7 oz/acre
- Leverage 360: 2.8 oz/acre

JULY 19, 2021 | SOYBEAN FOLIAR APPLICATIONS





APRIL 1 - SEPTEMBER 30, 2021

16.43"

Average 23.13"



GDD ACCUMULATION

APRIL 22 - SEPTEMBER 30, 2021 AVERAGE = 3341 2021 = 3293

harvest

CORN OCTOBER 7, 2021 AVERAGE YIELD 166.6 BU/AC

SOYBEAN OCTOBER 8, 2021 AVERAGE YIELD 59.3 BU/AC





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NOVEMBER 2020 | BASE FERTILITY APPLIED

- 300 lbs/ac Microessntials SZ
- 100 lbs/acre Aspire

APRIL 29, 2021 | CORN PLANTED

- Base Hybrid DKC63-91RIB
- 32,000 seed/ac
- 70 lbs N /ac dribble band at planting stabilized with CVA Elite Protect UAN
- 5 gal/ac Begin
- High yield block: 7 gal/acre of Begin and 112 lbs N/acre stabilized with CVA Elite Protect UAN

APRIL 29, 2021 | SOYBEANS PLANTED

- Base Variety AG25XF1
- 140,000 Seeds/ac
- 3 gal/ac Begin

APRIL 29, 2021 | PRE-EMERGE HERBICIDE

- Soybean Pre-emerge
 - 2.5 oz/ac Zidua SC
 - 5 oz/ac Verdict
 - 32 oz/ac Roundup PowerMax
- Corn Pre-emerge
 - CVA Elite D-1: 16 oz/acre
 - Harness Xtra: 40 oz/acre
 - Verdict: 5 oz/acre
 - Roundup: 32 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre

MAY 27, 2021 | POST HERBICIDE SPRAYED

- Soybean Post
 - CVA Elite D-1: 16 oz/acre
 - Zidua SC: 2.5 oz/acre
 - Roundup Powermax: 32 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre
 - Select Max: 8 oz/acre
- Corn Post
 - CVA Elite D-1: 16 oz/acre
 - Harness Xtra: 40 oz/acre
 - Atrazine 4L: 16 oz/acre
 - Roundup: 32 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre

MAY 27, 2021 | CORN Y DROP

- 160 lbs N/ac Stabilized with CVA Protect UAN
- 33 lbs S/ac as ATS

JULY 20, 2021 | FUNGICIDE AND INSECTICIDE APPLIED

- 8 ox/ac Delaro
- 8 oz/ac Steward EC
- Masterlock: 8 oz/acre

JULY 21, 2021 | SOYBEAN FOLIAR APPLICATION



APRIL 1 - SEPTEMBER 30, 2021

you are here

24.34"

Average 21.41"



GDD ACCUMULATION

APRIL 29 - SEPTEMBER 30, 2021 AVERAGE = 2919 2021 = 2915



CORN
SEPTEMBER 21, 2021
AVERAGE YIELD

318 BU/AC

SOYBEAN
OCTOBER 5, 2021
AVERAGE YIELD
81 BU/AC







MAY 3, 2021 | BASE FERTILITY APPLIED

- 200 lbs/ac Microessntials SZ
- 114 lbs/ac 0-0-60

MAY 4, 2021 | CORN PLANTED

- Base Hybrid DKC60-80
- 34,000 seed/ac
- 70 lbs N /ac dribble band at planting stabilized with CVA Protect UAN
- 5 gal/ac Begin
- High yield block: 7 gal/acre of Begin and 87.5 Lbs of N stabilized with CVA Protect UAN

MAY 4, 2021 | SOYBEANS PLANTED

- Base Variety AG20X9
- 140,000 Seeds/ac
- 3 gal/ac Begin

MAY 4, 2021 | PRE-EMERGE HERBICIDE

- Soybean Pre-emerge
 - Class Act NG: 3 pints/100 gal
 - Fierce MTZ: 16 oz/acre
 - Roundup: 24 oz/acre
 - Destiny HC: 0.5 pt/acre
- Corn Pre-emerge
 - Class Act NG: 3 pints/100 gal
 - Fierce MTZ: 16 oz/acre
 - Roundup: 24 oz/acre
 - Destiny HC: 0.5 pt/acre

JUNE 7, 2021 | POST HERBICIDE SPRAYED

- Soybean Post
 - CVA Elite D-1: 16 oz/acre
 - Perpetuo: 10 oz/acre
 - Roundup: 32 oz/acre
 - Preference: 6.4 oz/acre
 - Select Max: 10 oz/acre
- Corn Post
 - CVA Elite D-1: 16 oz/acre
 - Perpetuo: 10 oz/acre
 - Roundup: 32 oz/acre
 - Atrazine 4L: 16 oz/acre
 - Preference: 6.4 oz/acre

JUNE 7, 2021 | CORN Y DROP

- 160 lbs N/ac Stabilized with CVA Protect UAN
- 33 lbs S/ac as ATS

JUNE 7, 2021 | CORN FOLIAR APPLICATIONS

JULY 20, 2021 | FUNGICIDE AND INSECTICIDE APPLIED

- Delaro Complete: 8 oz/acre
- Steward EC: 8 oz/acre
- Masterlock: 4 oz/acre

JULY 22, 2021 | SOYBEAN FOLIAR APPLICATIONS



you are here

PRECIPITATION ACCUMULATION

APRIL 1 - SEPTEMBER 30, 2021

29.10"

Average 20.10"



GDD ACCUMULATION

APRIL 25 - SEPTEMBER 30, 2021 AVERAGE = 2873 2021 = 3135

harvest

CORN **OCTOBER 12, 2021 AVERAGE YIELD** 286.7 BU/AC

SOYBEAN OCTOBER 11, 2021 AVERAGE YIELD 85.7 BU/AC







MAY 10, 2021 | FERTILITY TREATMENTS APPLIED

MAY 10, 2021 | BASE FERTILITY APPLIED

- 250 lbs/ac Microessntials SZ
- 115 lbs/ac 0-0-60

MAY 11, 2021 | CORN PLANTED

- Base Hybrid DKC 54-64RIB
- 34,500 seed/ac
- 70 lbs N /ac dribble band at planting stabilized with CVA UAN Protect
- 5 gal/ac Begin
- High yield block: 7 gal/acre of Begin and 90 lbs of N stabilized with CVA Protect UAN

MAY 11, 2021 | SOYBEANS PLANTED

- Base Variety Stine 19E32
- 140,000 Seeds/ac
- 3 gal/ac Begin

MAY 12, 2021 | PRE-EMERGE HERBICIDE

- Soybean Pre-emerge
 - CVA Elite D-1: 16 oz/acre
 - Zidua SC: 2.5 oz/acre
 - Verdict: 5 oz/acre
 - Roundup: 32 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre
- Corn Pre-emerge
 - CVA Elite D-1: 16 oz/acre
 - Harness Max: 40 oz/acre
 - Verdict: 5 oz/acre
 - Roundup: 32 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre

JUNE 14, 2021 | POST HERBICIDE SPRAYED

- Soybean Post
 - CVA Elite D-1: 16 oz/acre
 - Zidua SC: 2.5 oz/acre
 - Roundup: 32 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre
 - Select Max: 8 oz/acre
- Corn Post
 - CVA Elite D-1: 16 oz/acre
 - Harness Max: 40 oz/acre
 - Atrazine 4L: 16 oz/acre
 - Roundup: 32 oz/acre
 - CVA Elite HSOC/COC: 8 oz/acre

JUNE 14, 2021 | CORN Y DROP

- 130 lbs N/ac Stabilized with CVA Protect UAN
- 33 lbs S/ac as ATS

JUNE 14, 2021 | CORN FOLIAR APPLICATIONS

JULY 24, 2021 | FUNGICIDE AND INSECTICIDE APPLIED

- 8 oz/ac Delaro
- 8 oz/ac Tundra Supreme



APRIL 1 - SEPTEMBER 30, 2021

you are here

11.88"

Average 20.92"



GDD ACCUMULATION

MAY 1 - SEPTEMBER 30, 2021 AVERAGE = 2612 2021 = 2759

harvest

CORN
SEPTEMBER 27, 2021
AVERAGE YIELD
92.9 BU/AC

SOYBEAN
SEPTEMBER 28, 2020
AVERAGE YIELD
34 BU/AC





SITE AKRON, IA

JULY 22, 2021 | SOYBEAN FOLIAR APPLICATIONS

2021 FERTILITY TRIALS

The Fertility Trials are designed to help CVA better understand dry fertilizer options that are available. We use strip-till to consistently deliver our dry fertilizer blend to the desired area. A strip-till pass with no fertilizer was used as a check for these trials. Both corn and soybeans responded to additional fertilizer; however, soybeans did not respond as much as in past years. Our 2021 treatments were all balanced for 31 lbs. N and 31 lbs. P. In 2021; we also balanced all our treatments for 17 lbs. sulfur. In 2021 Calcium Products SO4 produced the largest gain in yield and the highest ROI in both corn and soybeans. NatureSafe 9-6-1 and all three Mosaic products: MicroEssentials SZ, MES10, and Susterra, produced good yield increases and returns in corn. Soybeans were responsive to fertilizer this year in approximately half of our trials. Only Calcium Products SO4 produced a positive ROI. We plan to continue these trials to continue our education on how the additional fertilizer is contributing to added yields. A focus area going forward will continue to be dry fertilizer products containing a carbon source.

We had some planter errors in our corn checks in Polk, so we present the corn data below as a comparison of each treatment to the average of all of the treatments. Because we do not have a no-treatment check for comparison in Polk, we cannot provide net return or ROI on these treatments. In Cuba's corn, we saw a tremendous response to our fertility products compared to our checks, while in Norfolk, we saw very little response. In Norfolk, the corn checks performed very well, making it difficult for the fertility treatments to perform substantially better.

Soybean fertility products performed poorly in Polk, which had tremendous check yields, varied but averaged a positive response in Norfolk, and performed very well in Cuba, KS. We continue to see a very good response to fertility in Cuba even with high soil test levels of nutrients there. It seems that good soil fertility pays whether you are irrigated or dryland and may be more critical in a dry year.

FERTILITY TRIALS CORN

2021 DATA AVERAGES

The check for these trials was strip till with no fertilizer. All Treatments blended to 31 lbs N, 31 lbs P, 17 lbs S.

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Susterra	8.3	5.3	\$41.71	\$26.50	1 <i>7</i> 4.2
Chicken litter	4.8	3.2	\$24.33	\$ <i>7</i> .33	43.1
Nature safe	12.3	7.8	\$61.88	\$27.38	79.4
microSyncPro	10.1	6.5	\$50.98	\$24.30	91.1
SO4	14.4	9.0	\$72.69	\$61.84	570.0
MicroEssentialsSZ	9.7	6.9	\$49.23	\$20.80	73.2
MAP	6.7	4.9	\$33.84	\$12.87	61.4

2021 TOP 3

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
SO4	14.4	9.0	\$72.69	\$61.84	570.0
Nature safe	12.3	7.8	\$61.88	\$27.38	79.4
microSyncPro	10.1	6.5	\$50.98	\$24.30	91.1

ACS SITE | POLK, NE

Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate lbs/ ac	Per acre Cost	Net Return	ROI
Check	305.9								
Susterra	305.0	-0.9			-0.3	48.75	\$15.21		
Chicken litter	308.0	2.1			0.7	200	\$17.00		
Nature safe	309.0	3.1			1.0	100	\$34.50		
microSyncPro	309.4	3.5			1.2	<i>7</i> 8	\$26.68		
SO4	302.8	-3.1			-1.0	100	\$10.85		
MicroEssentialsSZ	298.7	-7.2			-2.3	<i>7</i> 8	\$28.43		
MAP	307.4	1.5			0.5	60	\$20.97		
REP 2									
Check	319.5								
Susterra	335.3	15.8			4.9	48.75	\$15.21		
Chicken litter	328.7	9.2			2.9	200	\$17.00		
Nature safe	322.4	3.0			0.9	100	\$34.50		
microSyncPro	318.1	-1.4			-0.4	<i>7</i> 8	\$26.68		
SO4	319.3	-0.2			-0.1	100	\$10.85		
MicroEssentialsSZ	314.1	-5.3			-1. <i>7</i>	<i>7</i> 8	\$28.43		
MAP	314.1	-5.4			-1. <i>7</i>	60	\$20.97		

ACS SITE | CUBA, KS

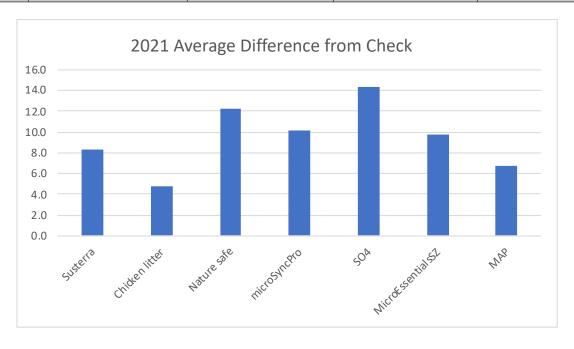
Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate lbs/ ac	Per acre Cost	Net Return	ROI
Check	166.1								
Susterra	170.5	4.4	\$5.05	\$22.02	2.6	48.75	\$15.21	\$6.81	44.8
Chicken litter	169.0	2.9	\$5.05	\$14.65	1.7	200	\$17.00	-\$2.35	-13.9
Nature safe	189.6	23.5	\$5.05	\$118. <i>7</i> 3	13.9	100	\$34.50	\$84.23	244.1
microSyncPro	198.2	32.1	\$5.05	\$162.16	19.3	<i>7</i> 8	\$26.68	\$135.48	507.8
SO4	213.7	47.6	\$5.05	\$240.28	28.6	100	\$10.85	\$229.43	2114.6
MicroEssentialsSZ	198.2	32.1	\$5.05	\$161.85	19.3	<i>7</i> 8	\$28.43	\$133.42	469.3
MAP	183 <i>.7</i>	17.6	\$5.05	\$88.88	10.6	60	\$20.97	\$67.91	323.8
REP 2									
Check	159.2								
Susterra	189.8	30.6	\$5.05	\$154.48	19.2	48.75	\$15.21	\$139.27	915.6
Chicken litter	178.3	19.1	\$5.05	\$96.20	12.0	200	\$17.00	\$79.20	465.9
Nature safe	189. <i>7</i>	30.5	\$5.05	\$154.03	19.2	100	\$34.50	\$119.53	346.4
microSyncPro	173.2	14.0	\$5.05	\$70.60	8.8	<i>7</i> 8	\$26.68	\$43.92	164.6
SO4	173.6	14.4	\$5.05	\$72.92	9.1	100	\$10.85	\$62.07	572.1
MicroEssentialsSZ	179.5	20.3	\$5.05	\$102.52	12.8	<i>7</i> 8	\$28.43	\$ <i>7</i> 4.09	260.6
MAP	179.8	20.6	\$5.05	\$103.83	12.9	60	\$20.97	\$82.86	395.1

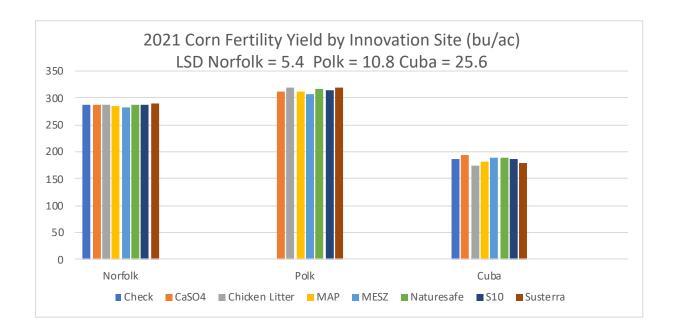
ACS SITE | NORFOLK, NE

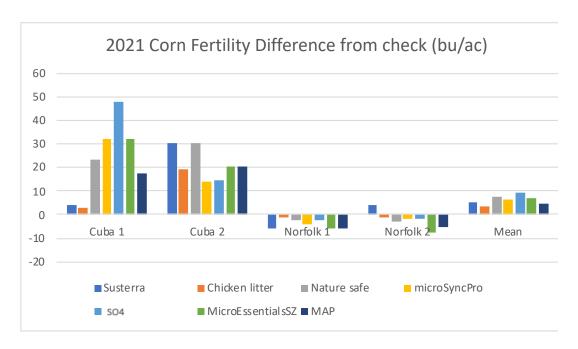
Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate lbs/ ac	Per acre Cost	Net Return	ROI
Check	292.8								
Susterra	286.8	-6.1	\$5.05	-\$30.70	-2.1	48.75	\$15.21	-\$45.91	-301.9
Chicken litter	291.4	-1.5	\$5.05	-\$7.37	-0.5	200	\$17.00	-\$24.37	-143.4
Nature safe	290.5	-2.3	\$5.05	-\$11.82	-0.8	100	\$34.50	-\$46.32	-134.3
microSyncPro	288.8	-4.0	\$5.05	-\$20.40	-1.4	<i>7</i> 8	\$26.68	-\$47.08	- 176.5
SO4	290.4	-2.5	\$5.05	-\$12.57	-0.9	100	\$10.85	-\$23.42	-215.9
MicroEssentialsSZ	287.0	-5.8	\$5.05	-\$29.44	-2.0	<i>7</i> 8	\$28.43	-\$57.87	-203.6
MAP	286.8	-6.0	\$5.05	-\$30.50	-2.1	60	\$20.97	-\$51.47	-245.5
REP 2									
Check	286.7								
Susterra	290.9	4.2	\$5.05	\$21.04	1.5	48.75	\$15.21	\$5.83	38.4
Chicken litter	285.5	-1.2	\$5.05	-\$6.16	-0.4	200	\$17.00	-\$23.16	-136.2
Nature safe	284.1	-2.7	\$5.05	-\$13.41	-0.9	100	\$34.50	-\$47.91	-138.9
microSyncPro	285.1	-1.7	\$5.05	-\$8.44	-0.6	<i>7</i> 8	\$26.68	-\$35.12	-131.6
SO4	284.8	-2.0	\$5.05	-\$9.86	-0.7	100	\$10.85	-\$20.71	-190.9
MicroEssentialsSZ	279.2	-7.5	\$5.05	-\$38.01	-2.6	<i>7</i> 8	\$28.43	-\$66.44	-233.7
MAP	281.4	-5.3	\$5.05	-\$26.86	-1.9	60	\$20.97	-\$47.83	-228.1

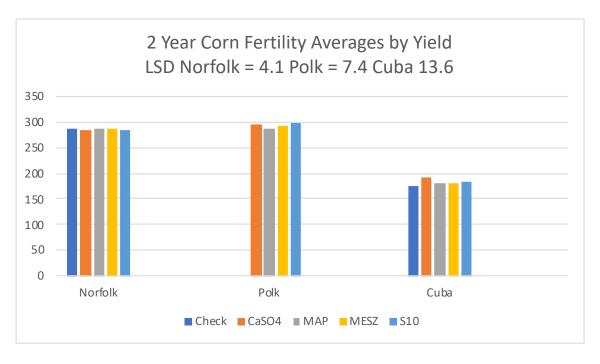
2 YEAR DATA AVERAGES

Treatment	Average Difference from Check	rom Check Change in Yield Change \$/a		Average Net Return \$/ac	ROI %
MAP	6.2	3.5	\$26.56	\$6.65	31.8
MicroEssentialsSZ	10.3	5.6	\$43.45	\$ 17.29	65.5
microSyncPro	7.2	4.2	\$32.88	\$2.39	17.1
SO4	12.0	6.4	\$52.86	\$32.60	290.6







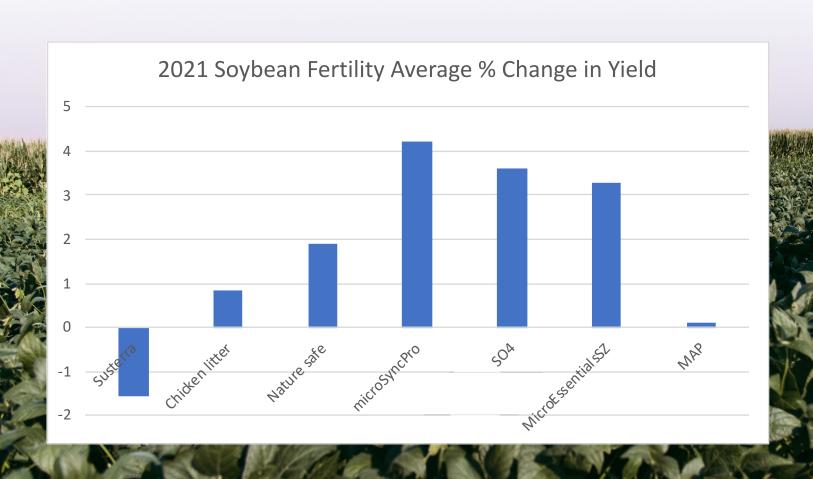


FERTILITY TRIALS SOYBEANS

2021 DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Susterra	-1.4	-1.6	-16.37	-\$31.58	-207.6
Chicken litter	-0.3	0.8	-3.23	-\$20.23	-119.0
Nature safe	0.7	1.9	8.06	-\$26.44	-76.6
microSyncPro	2.1	4.2	25.23	-\$1.45	-5.4
SO4	2.2	3.6	25.49	\$14.64	135.0
MicroEssentialsSZ	1.6	3.3	19.39	-\$9.04	-31.8
MAP	-0.4	0.1	-4.58	-\$25.55	-121.9

The check for these trials was strip till with no fertilizer. All Treatments blended to 31 lbs N, 31 lbs P, 17 lbs S.



ACS SITE | POLK, NE

				1					
Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate lbs/ ac	Per acre Cost	Net Re- turn	ROI
Check	86.9								
Susterra	83.0	-3.9	\$11. <i>7</i> 6	-\$45.40	-4.4	48.75	\$15.21	-\$60.61	-398.5
Chicken litter	74.9	-12.0	\$11. <i>7</i> 6	-\$140.88	-13.8	200	\$17.00	-\$1 <i>57</i> .88	-928.7
Nature safe	82.0	-4.9	\$11. <i>7</i> 6	-\$57.19	-5.6	100	\$34.50	-\$91.69	-265.8
microSyncPro	82.0	-4.9	\$11. <i>7</i> 6	-\$ <i>57</i> .19	-5.6	<i>7</i> 8	\$26.68	-\$83.87	-314.4
SO4	80.2	-6.6	\$11. <i>7</i> 6	-\$77.88	-7.6	100	\$10.85	-\$88.73	-817.8
MicroEssentialsSZ	82.4	-4.5	\$11. <i>7</i> 6	-\$52.77	-5.2	<i>7</i> 8	\$28.43	-\$81.20	-285.6
MAP	80.6	-6.2	\$11. <i>7</i> 6	-\$73.49	-7.2	60	\$20.97	-\$94.46	-450.5
REP 2									
Check	86.2								
Susterra	81.5	-4.8	\$11. <i>7</i> 6	-\$56.42	-5.6	48.75	\$15.21	-\$ <i>7</i> 1.63	-470.9
Chicken litter	83.0	-3.2	\$11. <i>7</i> 6	-\$38.19	-3.8	200	\$17.00	-\$55.19	-324.6
Nature safe	82.3	-4.0	\$11. <i>7</i> 6	-\$46.74	-4.6	100	\$34.50	-\$81.24	-235.5
microSyncPro	83.1	-3.2	\$11. <i>7</i> 6	-\$37.09	-3.7	<i>7</i> 8	\$26.68	-\$63.77	-239.0
SO4	90.9	4.7	\$11. <i>7</i> 6	\$54.80	5.4	100	\$10.85	\$43.95	405.0
MicroEssentialsSZ	79.7	-6.5	\$11. <i>7</i> 6	-\$76.46	-7.5	<i>7</i> 8	\$28.43	-\$104.89	-369.0
MAP	82.5	-3.7	\$11. <i>7</i> 6	-\$43.86	-4.3	60	\$20.97	-\$64.83	-309.2

2 YEAR DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
MAP	0.9	1.5	\$8.41	-\$11.51	-54.2
MicroEssentialsSZ	2.0	3.2	\$20.55	-\$5.60	-20.4
microSyncPro	1.4	2.9	\$15. <i>7</i> 0	-\$14.80	-43.7
SO4	2.3	3.9	\$24.37	\$4.11	56.7

2021 DATA AVERAGES TOP 3 IN SOYBEANS

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
SO4	2.2	3.6	25.49	\$14.64	135.0
microSyncPro	2.1	4.2	25.23	-\$1.45	-5.4
MicroEssentialsSZ	1.6	3.3	19.39	-\$9.04	-31.8

ACS SITE | CUBA, KS

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate lbs/ ac	Per acre Cost	Net Return	ROI
Check	62.1								
Susterra	59.7	-2.4	\$11. <i>7</i> 6	-\$28.72	-3.9	48.75	\$15.21	-\$43.93	-288.8
Chicken litter	69.6	7.5	\$11 <i>.7</i> 6	\$87.96	12.0	200	\$17.00	\$70.96	417.4
Nature safe	68.5	6.3	\$11. <i>7</i> 6	\$ <i>7</i> 4.21	10.2	100	\$34.50	\$39. <i>7</i> 1	115.1
microSyncPro	70.0	7.8	\$11. <i>7</i> 6	\$91.85	12.6	<i>7</i> 8	\$26.68	\$65.17	244.2
SO4	66.6	4.5	\$11. <i>7</i> 6	\$52.57	7.2	100	\$10.85	\$41.72	384.5
MicroEssentialsSZ	63.6	1.4	\$11. <i>7</i> 6	\$16.70	2.3	<i>7</i> 8	\$28.43	-\$11. <i>7</i> 3	-41.3
MAP	61.3	-0.9	\$11.76	-\$10.47	-1.4	60	\$20.97	-\$31.44	-149.9
REP 2									
Check	54.6								
Susterra	56.7	2.1	\$11. <i>7</i> 6	\$24.70	3.8	48.75	\$15.21	\$9.49	62.4
Chicken litter	59.5	4.9	\$11. <i>7</i> 6	\$57.15	8.9	200	\$17.00	\$40.15	236.2
Nature safe	59.8	5.1	\$11. <i>7</i> 6	\$60.21	9.4	100	\$34.50	\$25 <i>.7</i> 1	74.5
microSyncPro	64.4	9.8	\$11. <i>7</i> 6	\$114.90	17.9	<i>7</i> 8	\$26.68	\$88.22	330.6
SO4	60.6	6.0	\$11. <i>7</i> 6	\$70.32	10.9	100	\$10.85	\$59.47	548.2
MicroEssentialsSZ	64.9	10.3	\$11. <i>7</i> 6	\$121.13	18.9	<i>7</i> 8	\$28.43	\$92.70	326.1
MAP	59.3	4.7	\$11.76	\$54.80	8.5	60	\$20.97	\$33.83	161.3

ACS SITE | NORFOLK, NE

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate Ibs/ ac	Per acre Cost	Net Return	ROI
Check	79.8								
Susterra	79.6	-0.2	\$11. <i>7</i> 6	-\$2.35	-0.3	48.75	\$15.21	-\$17.56	-115.5
Chicken litter	81.0	1.2	\$11. <i>7</i> 6	\$14.23	1.5	200	\$17.00	-\$2.77	-16.3
Nature safe	81.9	2.1	\$11. <i>7</i> 6	\$25.05	2.7	100	\$34.50	-\$9.45	-27.4
microSyncPro	83.1	3.4	\$11. <i>7</i> 6	\$39.75	4.2	<i>7</i> 8	\$26.68	\$13.07	49.0
SO4	85.0	5.2	\$11. <i>7</i> 6	\$61.15	6.5	100	\$10.85	\$50.30	463.6
MicroEssentialsSZ	86.4	6.6	\$11. <i>7</i> 6	\$77.85	8.3	<i>7</i> 8	\$28.43	\$49.42	173.8
MAP	84.5	4.8	\$11. <i>7</i> 6	\$56.33	6.0	60	\$20.97	\$35.36	168.6
REP 2									
Check	88.7								
Susterra	89.5	0.8	\$11. <i>7</i> 6	\$10.00	1.0	48.75	\$15.21	-\$5.21	-34.3
Chicken litter	88.7	0.0	\$11. <i>7</i> 6	\$0.35	0.0	200	\$17.00	-\$16.65	-97.9
Nature safe	88.1	-0.6	\$11. <i>7</i> 6	-\$7.17	-0.7	100	\$34.50	-\$41.67	-120.8
microSyncPro	88.6	-0.1	\$11. <i>7</i> 6	-\$0.82	-0.1	<i>7</i> 8	\$26.68	-\$27.50	-103.1
SO4	88.0	-0.7	\$11. <i>7</i> 6	-\$8.00	-0.8	100	\$10.85	-\$18.85	-173.7
MicroEssentialsSZ	91.2	2.5	\$11. <i>7</i> 6	\$29.87	2.9	<i>7</i> 8	\$28.43	\$1.44	5.1
MAP	87.8	-0.9	\$11. <i>7</i> 6	-\$10.82	-1.0	60	\$20.97	-\$31.79	-151.6

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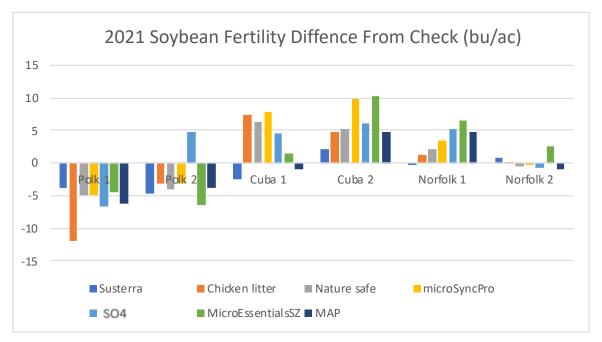


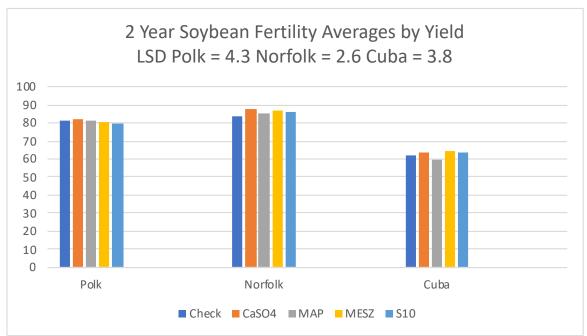


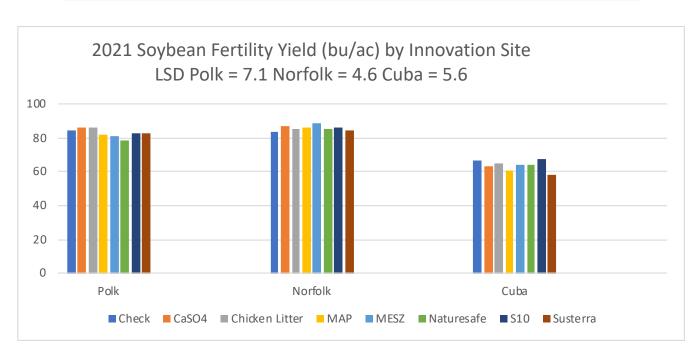
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IN-FURROW ADDITIVES CORN

The in-furrow additives trial is designed to help CVA better understand how enzymes, microbials, or soil conditioners can improve yield and what products are providing a consistent and profitable ROI. In 2021 a few products really stand out to us. CVA Elite PHP continues to give us yield advantage over our checks, but in 2021 we chose to test it combined with other products. CVA Elite PHP stacked with Endoprime was our top yield performer with a 12.7 bu yield increase over our checks. When we stacked Takeoff and CVA Elite PHP, we got an 8.4-bushel increase over our checks, with our second highest ROI out of all the products we tested. Ascend Pro has historically been one of our top In-Furrow Additives. We stacked it with PHP this year and got a nice yield response and ROI. We used 5 gallons of Begin as our carrier for all of our corn in-furrow additives.

Responses varied considerably between locations and individual replications, but overall, we saw a good response to these products in dryland and irrigated fields. We present all the data below so you can compare how these products performed in environments most similar to your own. We had planter problems with our corn checks in Polk, so we show the yield data as a comparison to the plot average instead of to no treatment checks.

2021 DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Xyway	3.2	2.2	\$16.19	\$21.48	115.6
Headline EC	1.9	0.8	\$9.82	\$5.64	627.5
EXP A	0.8	0.3	\$4.25	-\$7.28	-55.2
EXP Fulvic	-3.7	-2.5	-\$18.49	-\$26.36	-601.2
CVA Elite PHP + Ascend Pro	3.7	1.6	\$18.51	\$5.49	50.5
Zume	-5.1	-3.2	-\$25.65	-\$47.96	-352.5
NTexx Edge	2.2	0.0	\$11.24	-\$15.99	<i>7</i> .1
Exp Bio	-4.2	-2.6	-\$21.16	-\$34.55	-382.2
EXP Micro	2.9	2.5	\$14.50	\$12.48	217.9
CVA Elite PHP + Takeoff	8.4	5.2	\$42.65	\$33.54	530.9
CVA Elite PHP + Endoprime	12.7	8.3	\$63.94	\$77.86	464.3

Check for this trial is 5 gal/ac Begin all products were added to the Begin.

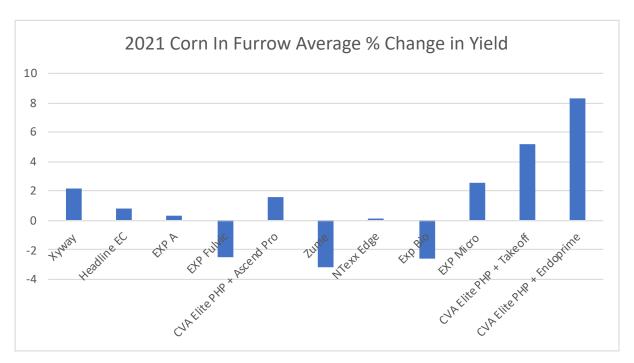
ACS SITE | POLK, NE

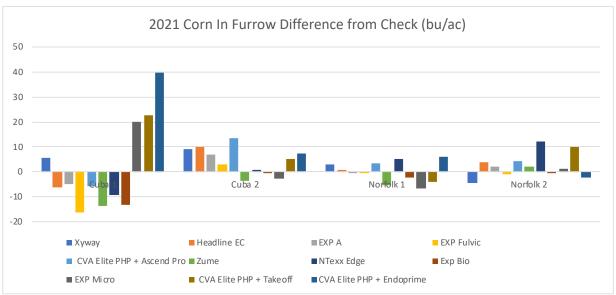
Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Re- turn	ROI
Check	319.4								
Xyway	324.0	4.6			1.4	15.2	\$ <i>7</i> .51		
Headline EC	319.7	0.3			0.1	3	\$1.35		
EXP A	317.3	-2.2			-0.7	3.2	\$9.50		
EXP Fulvic	316.8	-2.6			-0.8	16	\$3.69		
CVA Elite PHP + Ascend Pro	321.9	2.5			0.8	5+8	\$12.30		
Zume	315.5	-3.9			-1.2	32	\$10.16		
NTexx Edge	320.5	1.0			0.3	32	\$10.50		
Exp Bio	324.1	4.7			1.5	3	\$ <i>7</i> .50		
EXP Micro	318.6	-0.8			-0.3	32	\$4.56		
CVA Elite PHP + Takeoff	317.9	-1.6			-0.5	16+8	\$6.76		
CVA Elite PHP + Endoprime	317.4	-2.1			-0.6	8+2	\$11.33		
REP 2									
Check	326.2								
Xyway	335.3	9.1			2.8	15.2	\$ <i>7</i> .51		
Headline EC	320.9	-5.3			-1.6	3	\$1.35		
EXP A	333.7	7.5			2.3	3.2	\$9.50		
EXP Fulvic	323.6	-2.6			-0.8	16	\$3.69		
CVA Elite PHP + Ascend Pro	320.9	-5.3			-1.6	5+8	\$12.30		
Zume	329.1	2.9			0.9	32	\$10.16		
NTexx Edge	325.8	-0.5			-0.1	32	\$10.50		
Exp Bio	332.5	6.2			1.9	3	\$ <i>7</i> .50		
EXP Micro	328.6	2.4			0.7	32	\$4.56		
CVA Elite PHP + Takeoff	316.2	-10.0			-3.1	16+8	\$6.76		
CVA Elite PHP + Endoprime	321.9	-4.3			-1.3	8+2	\$11.33		

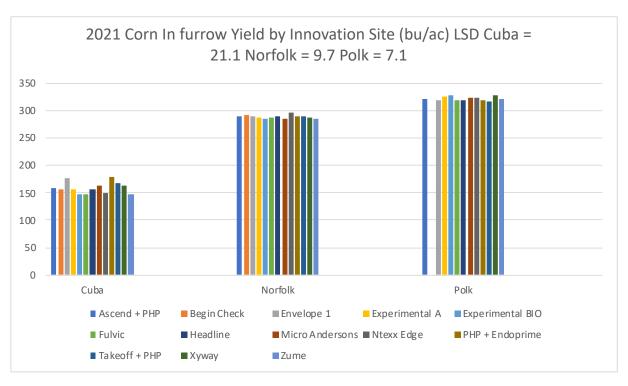


ACS SITE | CUBA, KS

Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Re- turn	ROI
Check	144.6								
Xyway	150.2	5.6	\$5.05	\$28.23	3.9	15.2	\$ <i>7</i> .51	\$20.72	275.9
Headline EC	138.3	-6.3	\$5.05	-\$31.97	-4.4	3	\$1.35	-\$33.32	-2467.9
EXP A	139.5	-5.1	\$5.05	-\$26.01	-3.6	3.2	\$9.50	-\$35.51	-373.8
EXP Fulvic	128.5	-16.2	\$5.05	-\$81 <i>.7</i> 6	-11.2	16	\$3.69	-\$85.45	-2315.7
CVA Elite PHP + Ascend Pro	138.6	-6.0	\$5.05	-\$30.45	-4.2	5+8	\$12.30	-\$42.75	-347.6
Zume	131.0	-13.6	\$5.05	-\$68.73	-9.4	32	\$10.16	-\$ <i>7</i> 8.89	-776.5
NTexx Edge	135.2	-9.4	\$5.05	-\$47.72	-6.5	32	\$10.50	-\$58.22	-554.5
Exp Bio	131.3	-13.3	\$5.05	-\$67.32	-9.2	3	\$ <i>7</i> .50	-\$ <i>7</i> 4.82	-997.6
EXP Micro	164.5	19.8	\$5.05	\$100.14	13. <i>7</i>	32	\$4.56	\$95.58	2096.1
CVA Elite PHP + Takeoff	167.4	22.8	\$5.05	\$114.99	15.7	16+8	\$6.76	\$108.23	1601.0
CVA Elite PHP + Endoprime	184.3	39.7	\$5.05	\$200.28	27.4	8+2	\$11.33	\$188.95	1667.7
REP 2									
Check	165.3								
Xyway	174.2	8.9	\$5.05	\$45.00	5.4	15.2	\$ <i>7</i> .51	\$37.49	499.1
Headline EC	175.2	9.9	\$5.05	\$50.05	6.0	3	\$1.35	\$48.70	3607.1
EXP A	172.4	7.1	\$5.05	\$35.60	4.3	3.2	\$9.50	\$26.10	274.8
EXP Fulvic	168.1	2.8	\$5.05	\$13.89	1.7	16	\$3.69	\$10.20	276.4
CVA Elite PHP + Ascend Pro	178.7	13.4	\$5.05	\$67.67	8.1	5+8	\$12.30	\$55.37	450.2
Zume	161.7	-3.6	\$5.05	-\$18.13	-2.2	32	\$10.16	-\$28.29	-278.4
NTexx Edge	166.2	0.9	\$5.05	\$4.49	0.5	32	\$10.50	-\$6.01	-57.2
Exp Bio	164.9	-0.4	\$5.05	-\$1.97	-0.2	3	\$ <i>7</i> .50	-\$9.47	-126.3
EXP Micro	162.3	-3.0	\$5.05	-\$15.00	-1.8	32	\$4.56	-\$19.56	-428.9
CVA Elite PHP + Takeoff	170.4	5.1	\$5.05	\$25.76	3.1	16+8	\$6.76	\$19.00	281.0
CVA Elite PHP + Endoprime	172.6	7.3	\$5.05	\$36.61	4.4	8+2	\$11.33	\$25.28	223.1







ACS SITE | NORFOLK, NE

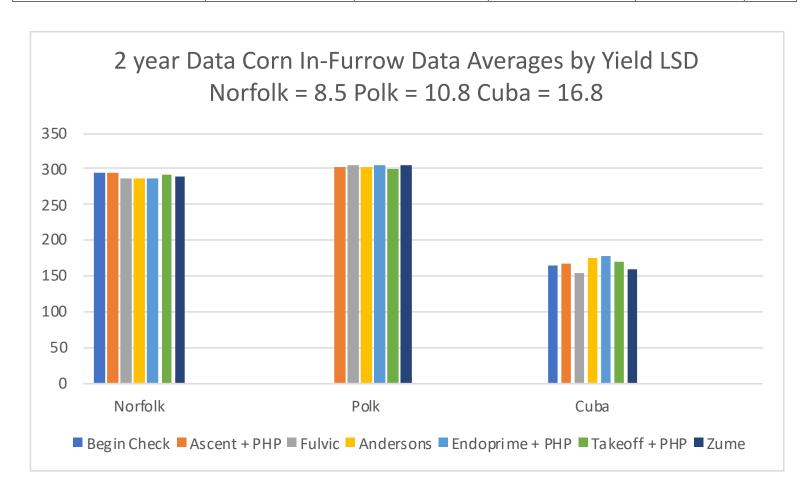
Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Re- turn	ROI
Check	290.0								
Xyway	292.7	2.7	\$5.05	\$13.75	0.9	15.2	\$ <i>7</i> .51	\$6.24	83.0
Headline EC	290.6	0.6	\$5.05	\$2.90	0.2	3	\$1.35	\$1.55	114.7
EXP A	289.4	-0.6	\$5.05	-\$2.92	-0.2	3.2	\$9.50	-\$12.42	-130.8
EXP Fulvic	290.0	0.0	\$5.05	-\$0.14	0.0	16	\$3.69	-\$3.83	-103.7
CVA Elite PHP + Ascend Pro	293.2	3.2	\$5.05	\$16.14	1.1	5+8	\$12.30	\$3.84	31.2
Zume	284.7	-5.3	\$5.05	-\$26.54	-1.8	32	\$10.16	-\$36.70	-361.2
NTexx Edge	295.3	5.3	\$5.05	\$26.77	1.8	32	\$10.50	\$16.27	155.0
Exp Bio	287.6	-2.4	\$5.05	-\$11.88	-0.8	3	\$ <i>7</i> .50	-\$19.38	-258.4
EXP Micro	283.3	-6.7	\$5.05	-\$34.01	-2.3	32	\$4.56	-\$38.57	-845.9
CVA Elite PHP + Takeoff	286.1	-3.9	\$5.05	-\$19.83	-1.4	16+8	\$6.76	-\$26.59	-393.4
CVA Elite PHP + Endoprime	296.1	6.1	\$5.05	\$30.67	2.1	8+2	\$11.33	\$19.34	170.7
REP 2									
Check	285.3								
Xyway	280.9	-4.4	\$5.05	-\$22.19	-1.5	15.2	\$ <i>7</i> .51	-\$29.70	-395.5
Headline EC	288.9	3.6	\$5.05	\$18.31	1.3	3	\$1.35	\$16.96	1256.0
EXP A	287.4	2.0	\$5.05	\$10.34	0.7	3.2	\$9.50	\$0.84	8.8
EXP Fulvic	284.1	-1.2	\$5.05	-\$5.97	-0.4	16	\$3.69	-\$9.66	-261.8
CVA Elite PHP + Ascend Pro	289.4	4.1	\$5.05	\$20.67	1.4	5+8	\$12.30	\$8.37	68.1
Zume	287.5	2.1	\$5.05	\$10.79	0.7	32	\$10.16	\$0.63	6.2
NTexx Edge	297.5	12.2	\$5.05	\$61.42	4.3	32	\$10.50	\$50.92	485.0
Exp Bio	284.6	-0.7	\$5.05	-\$3.49	-0.2	3	\$ <i>7</i> .50	-\$10.99	-146.6
EXP Micro	286.7	1.4	\$5.05	\$6.86	0.5	32	\$4.56	\$2.30	50.4
CVA Elite PHP + Takeoff	295.2	9.8	\$5.05	\$49.68	3.4	16+8	\$6.76	\$42.92	634.9
CVA Elite PHP + Endoprime	283.0	-2.3	\$5.05	-\$11.80	-0.8	8+2	\$11.33	-\$23.13	-204.2

2 YEAR DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
CVA Elite PHP + Ascend Pro	9.9	4.2	\$3 <i>7</i> .15	\$24.49	202.1
CVA Elite PHP + Takeoff	16.4	7.7	\$63.33	\$55.40	836.9
Zume	4.7	1.2	\$12.03	-\$4.20	18.4
EXP Fulvic	3.6	0.7	\$9.58	\$3.81	160.0
EXP Micro	8.5	3.9	\$31.46	\$26.17	341.7

TOP 3 PERFORMERS

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
PHP + Endoprime	12.7	8.3	\$63.94	\$77.86	464.3
Take off + CVA Elite PHP	8.4	5.2	\$42.65	\$33.54	530.9
Ascend Pro + CVA Elite PHP	3.7	1.6	\$18.51	\$5.49	50.5



IN-FURROW ADDITIVES SOYBEANS

2021 DATA AVERAGES

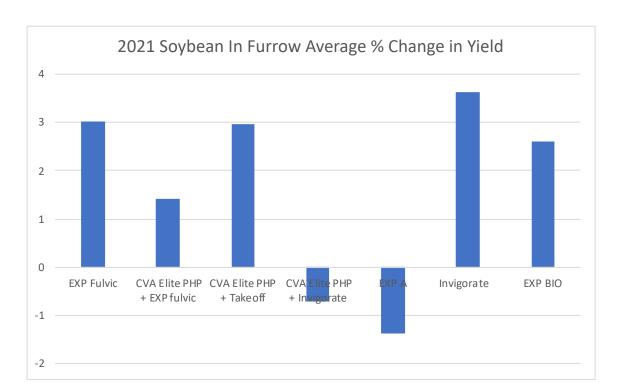
Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
EXP Fulvic	2.2	3.0	\$25.60	\$21.91	593.8
CVA Elite PHP + EXP fulvic	1.1	1.4	\$13.42	\$7.67	133.4
CVA Elite PHP + Takeoff	2.3	3.0	\$27.35	\$20.59	304.5
CVA Elite PHP + Invigorate	-0.6	-0.7	-\$7.52	-\$20.40	-158.4
EXP A	-0.7	-1.4	-\$7.90	-\$1 <i>7</i> .40	-183.1
Invigorate	2.6	3.6	\$30.32	\$19.50	180.2
EXP BIO	1.8	2.6	\$21.25	\$13. <i>7</i> 5	183.4

Check for this trial is 3 gal/ac Begin all products were added to the Begin.

For our soybeans, iNvigorate from AMVAC continues to give us strong yield increases. We again had a good response to CVA Elite PHP stacked with Takeoff, similar to how it performed in corn. Lastly, our Fulvic in-furrow additive did very well in soybeans but not in corn. All additives in soybeans used 3 gallons of Begin as our carrier.

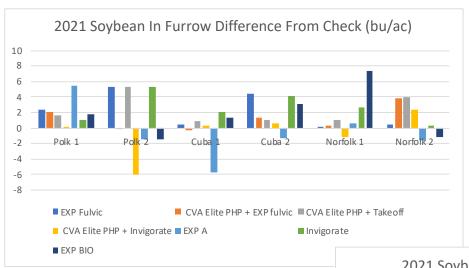
TOP 3 PERFORMERS

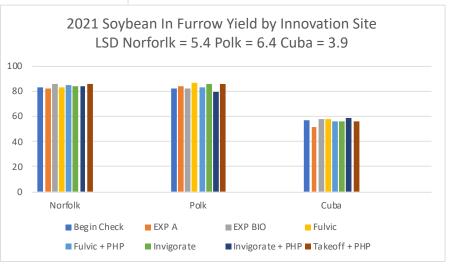
Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Invigorate	2.6	3.6	\$30.32	\$19.50	180.2
Takeoff + CVA Elite PHP	2.3	3.0	\$27.35	\$20.59	304.5
Fulvic	2.2	3.0	\$25.60	\$21.91	593.8



ACS SITE | POLK, NE

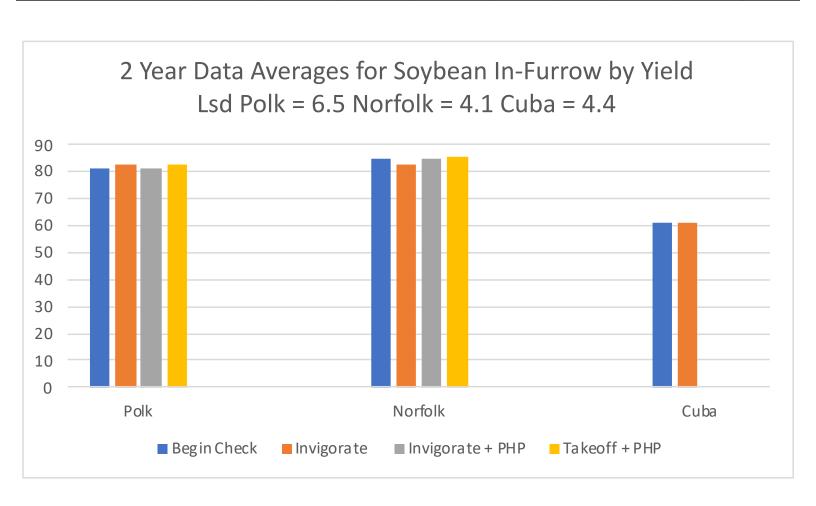
Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Return	ROI
Check	82.5								
EXP Fulvic	84.9	2.4	\$11. <i>7</i> 6	\$28.28	2.9	16	\$3.69	\$24.59	666.3
CVA Elite PHP + EXP fulvic	84.5	2.0	\$11. <i>7</i> 6	\$23.66	2.4	16+8	\$5. <i>7</i> 5	\$17.91	311.5
CVA Elite PHP + Takeoff	84.1	1.6	\$11. <i>7</i> 6	\$18.89	1.9	16+8	\$6.76	\$12.13	179.4
CVA Elite PHP + Invigorate	82.5	0.0	\$11. <i>7</i> 6	\$0.26	0.0	32=8	\$12.88	-\$12.62	-98.0
EXP A	87.8	5.4	\$11. <i>7</i> 6	\$63.28	6.5	2	\$9.50	\$53.78	566.1
Invigorate	83.6	1.1	\$11. <i>7</i> 6	\$12.98	1.3	32	\$10.82	\$2.16	20.0
EXP BIO	84.2	1.7	\$11. <i>7</i> 6	\$20.15	2.1	3	\$ <i>7</i> .50	\$12.65	168.7
REP 2									
Check	82.9								
EXP Fulvic	88.2	5.3	\$11. <i>7</i> 6	\$62.55	6.4	16	\$3.69	\$58.86	
CVA Elite PHP + EXP fulic	82.6	-0.2	\$11. <i>7</i> 6	-\$2.48	-0.3	16+8	\$5.75	-\$8.23	-143.1
CVA Elite PHP + Takeoff	88.2	5.3	\$11. <i>7</i> 6	\$62.55	6.4	16+8	\$6.76	\$55.79	825.2
CVA Elite PHP + Invigorate	76.9	-6.0	\$11. <i>7</i> 6	-\$70.12	-7.2	32=8	\$12.88	-\$83.00	-644.4
EXP A	81.4	-1.4	\$11. <i>7</i> 6	-\$16.68	-1. <i>7</i>	2	\$9.50	-\$26.18	-275.6
Invigorate	88.1	5.3	\$11. <i>7</i> 6	\$61.99	6.4	32	\$10.82	\$51.17	473.0
EXP BIO	81.3	-1.5	\$11. <i>7</i> 6	-\$ 1 <i>7.7</i> 5	-1.8	3	\$7.50	-\$25.25	-336.7





ACS SITE | CUBA, KS

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Return	ROI
Check	58.6								
EXP Fulvic	59.0	0.4	\$11. <i>7</i> 6	\$4.65	0.7	16	\$3.69	\$0.96	25.9
CVA Elite PHP + EXP fulic	58.2	-0.4	\$11. <i>7</i> 6	-\$4.15	-0.6	16+8	\$5. <i>7</i> 5	-\$9.90	-172.3
CVA Elite PHP + Takeoff	59.6	1.0	\$11. <i>7</i> 6	\$11.22	1.6	16+8	\$6.76	\$4.46	66.0
CVA Elite PHP + Invigorate	58.9	0.3	\$11. <i>7</i> 6	\$3.97	0.6	32=8	\$12.88	-\$8.91	-69.2
EXP A	52.9	-5.7	\$11. <i>7</i> 6	-\$67.55	-9.8	2	\$9.50	-\$77.05	-811.0
Invigorate	60.7	2.1	\$11. <i>7</i> 6	\$24.85	3.6	32	\$10.82	\$14.03	129.7
EXP BIO	59.9	1.3	\$11. <i>7</i> 6	\$15.25	2.2	3	\$ <i>7</i> .50	\$7.75	103.3
REP 2									
Check	52.5								
EXP Fulvic	56.8	4.4	\$11. <i>7</i> 6	\$51.27	7.4	16	\$3.69	\$47.58	1289.3
CVA Elite PHP + EXP fulic	53.7	1.3	\$11. <i>7</i> 6	\$15.00	2.2	16+8	\$5.75	\$9.25	160.9
CVA Elite PHP + Takeoff	53.5	1.1	\$11. <i>7</i> 6	\$12.77	1.9	16+8	\$6.76	\$6.01	88.9
CVA Elite PHP + Invigorate	53.1	0.6	\$11. <i>7</i> 6	\$7.28	1.1	32=8	\$12.88	-\$5.60	-43.5
EXP A	51.2	-1.3	\$11. <i>7</i> 6	-\$14.79	-2.1	2	\$9.50	-\$24.29	-255.7
Invigorate	56.6	4.1	\$11. <i>7</i> 6	\$48.34	7.0	32	\$10.82	\$37.52	346.8
EXP BIO	55.6	3.1	\$11. <i>7</i> 6	\$36.74	5.3	3	\$ <i>7</i> .50	\$29.24	389.9



ACS SITE | NORFOLK, NE

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Return	ROI
Check	80.7								
EXP Fulvic	80.8	0.1	\$11. <i>7</i> 6	\$1.40	0.1	16	\$3.69	-\$2.29	-62.0
CVA Elite PHP + EXP fulic	81.0	0.3	\$11. <i>7</i> 6	\$3.82	0.4	16+8	\$5.75	-\$1.93	-33.6
CVA Elite PHP + Takeoff	81. <i>7</i>	1.0	\$11. <i>7</i> 6	\$12.21	1.3	16+8	\$6.76	\$5.45	80.6
CVA Elite PHP + Invigorate	<i>7</i> 9.5	-1.2	\$11. <i>7</i> 6	-\$13.81	-1.5	32=8	\$12.88	-\$26.69	-207.3
EXP A	81.3	0.6	\$11. <i>7</i> 6	\$ <i>7</i> .35	0.8	2	\$9.50	-\$2.15	-22.6
Invigorate	83.3	2.6	\$11. <i>7</i> 6	\$30. <i>7</i> 4	3.2	32	\$10.82	\$19.92	184.1
EXP BIO	88.1	7.4	\$11. <i>7</i> 6	\$8 <i>7</i> .31	9.2	3	\$ <i>7</i> .50	\$ <i>7</i> 9.81	1064.1
REP 2									
Check	85.8								
EXP Fulvic	86.3	0.5	\$11. <i>7</i> 6	\$5.47	0.5	16	\$3.69	\$1.78	48.3
CVA Elite PHP + EXP fulic	89.6	3.8	\$11. <i>7</i> 6	\$44.67	4.4	16+8	\$5. <i>7</i> 5	\$38.92	676.8
CVA Elite PHP + Takeoff	89.8	3.9	\$11. <i>7</i> 6	\$46.45	4.6	16+8	\$6.76	\$39.69	58 7 .1
CVA Elite PHP + Invigorate	88.2	2.3	\$11. <i>7</i> 6	\$27.33	2.7	32=8	\$12.88	\$14.45	112.2
EXP A	84.2	-1.6	\$11. <i>7</i> 6	-\$18.99	-1.9	2	\$9.50	-\$28.49	-299.9
Invigorate	86.1	0.3	\$11. <i>7</i> 6	\$2.98	0.3	32	\$10.82	-\$7.84	-72.5
EXP BIO	84.6	-1.2	\$11. <i>7</i> 6	-\$14.17	-1.4	3	\$ <i>7</i> .50	-\$21.67	-288.9

2 YEAR DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
CVA Elite PHP + Takeoff	5.0	3.9	\$30.06	\$12.69	344.7
CVA Elite PHP + Invigorate	3.3	4.7	\$31. <i>7</i> 1	-\$5.14	146.3
Invigorate	3.7	3.7	\$28.54	\$11.63	163.8



CORN FOLIAR RESPONSE

Foliar products in corn did not perform as well as in past years. In Polk and Norfolk, we had very high yields even without these products. We again had issues with our corn check plots in Polk, so the data is compared to the plot average and not the check plots. Our two top-performing products in corn in 2021 were CVA Elite PHP combined with an experimental humic product and Symbol Release. These two treatments continue a long history of good response to CVA Elite PHP and Symbol Release.

Sometimes foliar treatments are thought of as a product just for high yield irrigated environments, but in 2021 we saw an even better response in our drouthy lower-yielding environment in North Central Kansas.

The Check for this trial is no foliar treatment.

2021 DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Symbol Release	1.4	0.5	\$6.94	\$1.47	26.8
EXP Humic	-4.7	-2.0	-\$23.93	-\$26.53	-1020.4
Pacesetter	-3.1	-1.4	-\$15.60	-\$20.60	-412.0
CVA Elite PHP + Symbol Release	-0.1	0.1	-\$0.56	-\$16.33	-103.6
CVA Elite PHP + EXP Humic	7.0	4.0	\$35.56	\$22.66	175.6
EXP Micro	-1.7	-0.9	-\$8.38	-\$12.94	-283.7
EXP SS	-12.5	-6.3	-\$63.13	-\$68.60	-1254.1

2021 TOP DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
CVA Elite PHP + EXP Humic	7.04	3.96	\$35.56	\$35.56	175.64
Symbol Release	1.37	0.47	\$35.56	\$35.56	26.80
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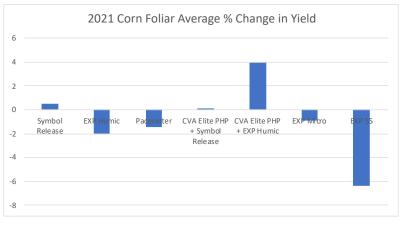


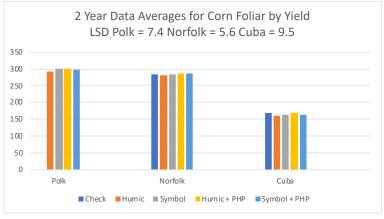
ACS SITE | POLK, NE

				(
Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Re- turn	ROI
Check	307.5								
Symbol Release	314.2	6.7			2.5	32	\$5.47		
EXP Humic	294.4	-13.1			-4.8	32	\$2.60		
Pacesetter	300.9	-6.6			-2.4	6.5/2.5	\$5.00		
CVA Elite PHP + Symbol Release	299.2	-8.3			-3.0	40/32	\$15.77		
CVA Elite PHP + EXP Humic	314.4	6.9			2.5	40/32	\$12.90		
EXP Micro	323.86	16.4			6.0	32	\$4.56		
EXP SS	305.43	-2.1			-0.8	32	\$5.47		
REP 2									
Check	321.4								
Symbol Release	322.4	1.0			0.3	32	\$5.47		
EXP Humic	308.2	-13.2			-4.5	32	\$2.60		
Pacesetter	311 <i>.7</i>	-9.7			-3.3	6.5/2.5	\$5.00		
CVA Elite PHP + Symbol Release	319.0	-2.5			-0.8	40/32	\$15.77		
CVA Elite PHP + EXP Humic	317.0	-4.5			-1.5	40/32	\$12.90		
EXP Micro	341.5	20.1			6.9	32	\$4.56		
EXP SS	330.31	8.9			3.0	32	\$5.47		

2 YEAR DATA AVERAGES

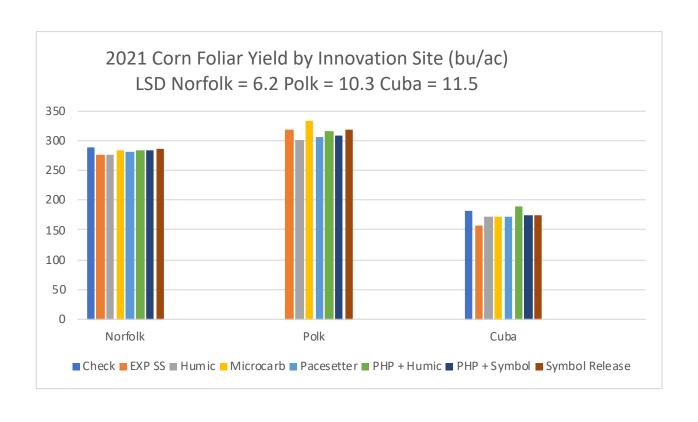
Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
Symbol Release	9.1	3.7	\$32.47	\$27.00	493.3
EXP Humic	5.7	2.3	\$15. <i>7</i> 3	\$13.13	505.1
CVA Elite PHP + Symbol Release	7.2	3.1	\$24.74	\$8.97	56.9
CVA Elite PHP + EXP Humic	11.5	5.4	\$45.27	\$32.37	250.9



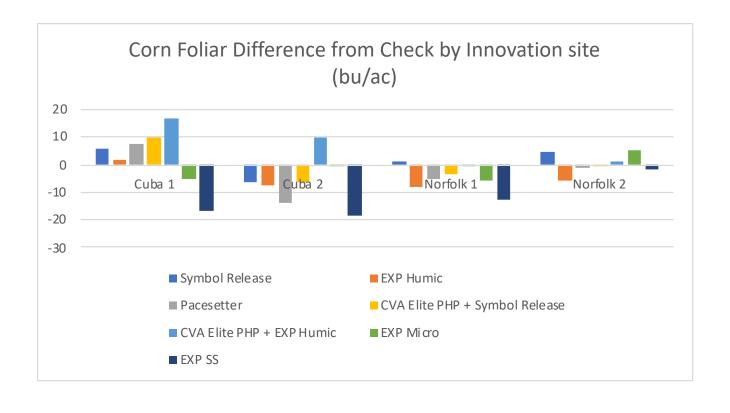


ACS SITE | CUBA, KS

Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Re- turn	ROI
Check	174.6								
Symbol Release	180.7	6.1	\$5.05	\$30.55	3.5	32	\$5.47	\$25.08	458.3
EXP Humic	176.6	2.0	\$5.05	\$10.10	1.1	32	\$2.60	\$ <i>7</i> .50	288.5
Pacesetter	182.3	7.7	\$5.05	\$38. <i>7</i> 8	4.4	6.5/2.5	\$5.00	\$33 <i>.7</i> 8	675.7
CVA Elite PHP + Symbol Release	184.2	9.6	\$5.05	\$48.48	5.5	40/32	\$15.77	\$32.71	207.4
CVA Elite PHP + EXP Humic	191.6	17.0	\$5.05	\$86.00	9.8	40/32	\$12.90	\$ <i>7</i> 3.10	566.7
EXP Micro	169.2	-5.4	\$5.05	-\$27.37	-3.1	32	\$4.56	-\$31.93	-700.2
EXP SS	157.9	-16.7	\$5.05	-\$84.28	-9.6	32	\$5.47	-\$89.75	-1640.9
REP 2									
Check	176.0								
Symbol Release	169.6	-6.4	\$5.05	-\$32.12	-3.6	32	\$5.47	-\$37.59	-686.9
EXP Humic	168.3	-7.7	\$5.05	-\$38.94	-4.4	32	\$2.60	-\$41.54	-1597.5
Pacesetter	162.1	-13.8	\$5.05	-\$69.89	-7.9	6.5/2.5	\$5.00	-\$ <i>7</i> 4.89	-1497.8
CVA Elite PHP + Symbol Release	169.5	-6.5	\$5.05	-\$32.83	-3.7	40/32	\$15.77	-\$48.60	-308.1
CVA Elite PHP + EXP Humic	186.0	10.0	\$5.05	\$50.50	5.7	40/32	\$12.90	\$37.60	291.5
EXP Micro	1 <i>7</i> 5.2	-0.8	\$5.05	-\$3.89	-0.4	32	\$4.56	-\$8.45	-185.3
EXP SS	157.3	-18.7	\$5.05	-\$94.18	-10.6	32	\$5.47	-\$99.65	-1821.8



Treatment	Yield bu/ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Re- turn	ROI
Check	285.3								
Symbol Release	286.3	1.0	\$5.05	\$5.00	0.3	32	\$5.47	-\$0.47	-8.6
EXP Humic	277.5	<i>-7</i> .8	\$5.05	-\$39.34	-2.7	32	\$2.60	-\$41.94	-1613.1
Pacesetter	280.2	-5.1	\$5.05	-\$25.86	-1.8	6.5/2.5	\$5.00	-\$30.86	-617.1
CVA Elite PHP + Symbol Release	281.8	-3.5	\$5.05	-\$17.52	-1.2	40/32	\$15.77	-\$33.29	-211.1
CVA Elite PHP + EXP Humic	285.0	-0.3	\$5.05	-\$1.62	-0.1	40/32	\$12.90	-\$14.52	-112.5
EXP Micro	279.6	-5.8	\$5.05	-\$29.04	-2.0	32	\$4.56	-\$33.60	<i>-7</i> 36.8
EXP SS	272.5	-12.8	\$5.05	-\$64.79	-4.5	32	\$5.47	-\$70.26	-1284.5
REP 2									
Check	283.3								
Symbol Release	288.2	4.8	\$5.05	\$24.32	1.7	32	\$5.47	\$18.85	344.5
EXP Humic	277.9	-5.5	\$5.05	-\$27.55	-1.9	32	\$2.60	-\$30.15	-1159.5
Pacesetter	282.3	-1.1	\$5.05	-\$5.44	-0.4	6.5/2.5	\$5.00	-\$10.44	-208.7
CVA Elite PHP + Symbol Release	283.3	-0.1	\$5.05	-\$0.39	0.0	40/32	\$15.77	-\$16.16	-102.5
CVA Elite PHP + EXP Humic	284.8	1.5	\$5.05	\$7.34	0.5	40/32	\$12.90	-\$5.56	-43.1
EXP Micro	288.6	5.3	\$5.05	\$26.79	1.9	32	\$4.56	\$22.23	487.5
EXP SS	281.5	-1.8	\$5.05	-\$9.25	-0.6	32	\$5.47	-\$14.72	-269.1



SOYBEAN FOLIAR RESPONSE

We had similar results in our soybean foliar trials this year. CVA Elite PHP combined with our experimental humic product gave us very good response, as did CVA Elite PHP + Symbol Release. Our best foliar product in soybeans was an application of Takeoff with the herbicide application compared to our normal foliar timing of around R3. The Check for this trial is no foliar treatment.

2021 DATA AVERAGES

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Takeoff (Post Herbicide)	3.7	5.2	\$44.01	\$37.88	686.0
CVA Elite PHP + Symbol Release	1.9	3.2	\$22.55	\$11.33	120.6
CVA Elite PHP + EXP Humic	1.1	1.4	\$12.91	\$5.13	<i>7</i> 8.0
CVA Elite PHP + Begin	0.7	1.1	\$8.24	\$3.77	245.9
EXP Micro	0.1	-0.2	\$0. <i>7</i> 1	-\$13.19	-202.5

2 YEAR DATA AVERAGES

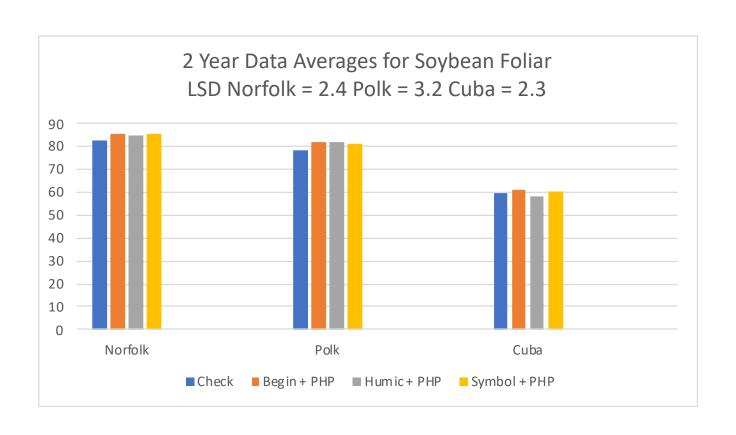
Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
CVA Elite PHP + Symbol Release	3.1	5.2	\$31.55	\$18.06	138.9
CVA Elite PHP + EXP Humic	3.2	5.1	\$31.98	\$21.63	186.8
CVA Elite PHP + Begin	4.2	6.5	\$40.56	\$31.40	335.9

2021 TOP 3

Treatment	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/ac	Average Net Return \$/ac	ROI %
Takeoff (Post Herbicide)	3.7	5.2	\$44.01	\$37.88	686.0
CVA Elite PHP + Symbol Release	1.9	3.2	\$22.55	\$11.33	120.6
CVA Elite PHP + EXP Humic	1.1	1.4	\$12.91	\$5.13	78.0

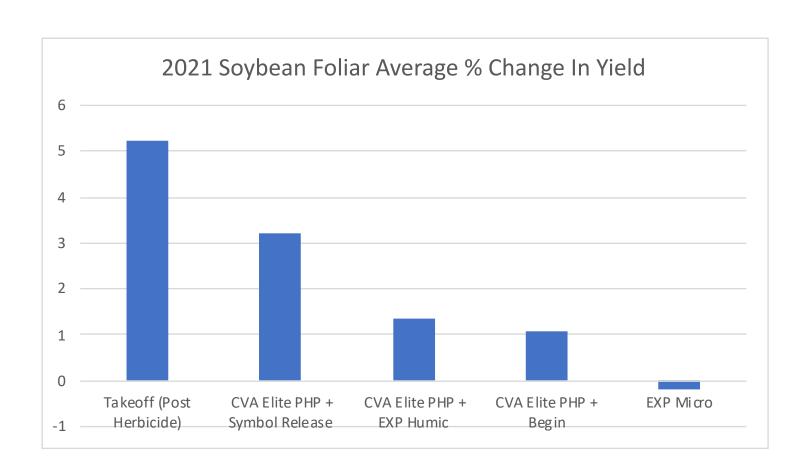
ACS SITE | POLK, NE

Treatment	Yield bu/ ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Return	ROI
Check	82.2								
Takeoff (Post Herbicide)	83.4	1.2	\$11. <i>7</i> 6	\$14.35	1.5	32	\$9.40	\$4.95	52.7
CVA Elite PHP + Symbol Release	81.9	-0.3	\$11. <i>7</i> 6	-\$3.09	-0.3	32+40	\$15. <i>77</i>	-\$18.86	-119.6
CVA Elite PHP + EXP Humic	83.1	0.9	\$11. <i>7</i> 6	\$11.08	1.1	32+40	\$12.90	-\$1.82	-14.1
CVA Elite PHP + Begin	81. <i>7</i>	-0.5	\$11. <i>7</i> 6	-\$5.53	-0.6	1gal+40	\$13.86	-\$19.39	-139.9
EXP Micro	78.7	-3.5	\$11. <i>7</i> 6	-\$41.17	-4.3	32	\$4.56	-\$45.73	-1002.9
REP 2									
Check	83.2								
Takeoff (Post Herbicide)	87.4	4.1	\$11. <i>7</i> 6	\$48. <i>7</i> 4	5.0	32	\$5.47	\$43.26	790.6
CVA Elite PHP + Symbol Release	79.7	-3.6	\$11. <i>7</i> 6	-\$41.80	-4.3	32+40	\$10.30	-\$52.10	-505.9
CVA Elite PHP + EXP Humic	83.1	-0.1	\$11. <i>7</i> 6	-\$1.38	-0.1	32+40	\$6.76	-\$8.14	-120.4
CVA Elite PHP + Begin	82.2	-1.0	\$11. <i>7</i> 6	-\$12.11	-1.2	1gal+40	\$2.60	-\$14. <i>7</i> 1	-565.9
EXP Micro	84.0	0.8	\$11. <i>7</i> 6	\$9.36	1.0	32	\$15.77	-\$6.41	-40.6

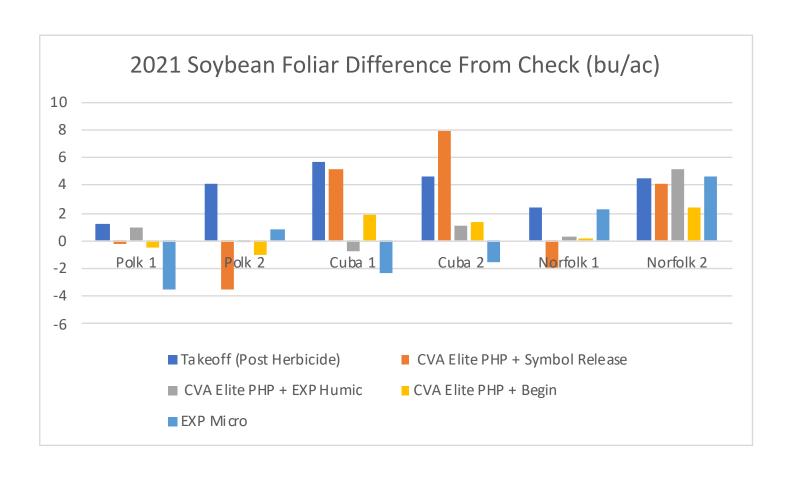


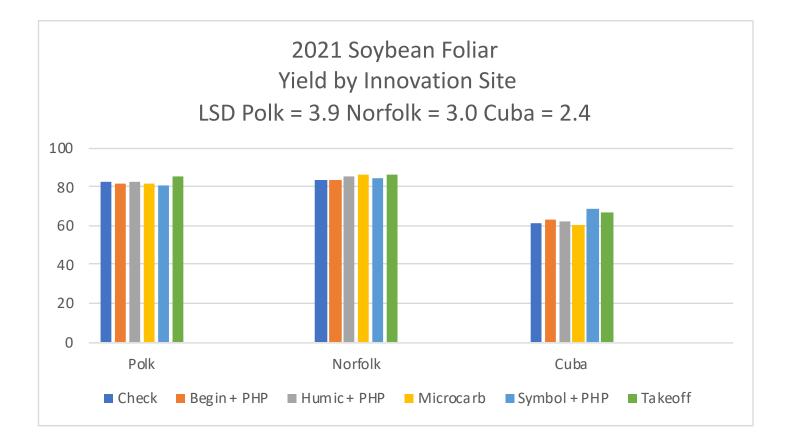
ACS SITE | CUBA, KS

Treatment	Yield bu/ ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Return	ROI
Check	62.6								
Takeoff (Post Herbicide)	68.3	5.7	\$11 <i>.7</i> 6	\$66.67	9.1	32	\$5.47	\$61.20	1118.3
CVA Elite PHP + Symbol Release	67.8	5.1	\$11. <i>7</i> 6	\$60.39	8.2	32+40	\$10.30	\$50.09	486.3
CVA Elite PHP + EXP Humic	61.9	-0.8	\$11. <i>7</i> 6	-\$8.83	-1.2	32+40	\$6.76	-\$15.59	-230.6
CVA Elite PHP + Begin	64.5	1.9	\$11. <i>7</i> 6	\$22.53	3.1	1gal+40	\$2.60	\$19.93	766.7
EXP Micro	60.3	-2.3	\$11. <i>7</i> 6	-\$27.37	-3.7	32	\$15.77	-\$43.14	-273.5
REP 2									
Check	61.3								
Takeoff (Post Herbicide)	65.9	4.6	\$11. <i>7</i> 6	\$54.48	7.6	32	\$5.47	\$49.00	895.4
CVA Elite PHP + Symbol Release	69.3	8.0	\$11. <i>7</i> 6	\$93.75	13.0	32+40	\$10.30	\$83.45	810.2
CVA Elite PHP + EXP Humic	62.5	1.1	\$11. <i>7</i> 6	\$13.51	1.9	32+40	\$6.76	\$6.75	99.8
CVA Elite PHP + Begin	62.6	1.3	\$11. <i>7</i> 6	\$15.12	2.1	1gal+40	\$2.60	\$12.52	481.4
EXP Micro	59.8	-1.5	\$11. <i>7</i> 6	-\$18.13	-2.5	32	\$15.77	-\$33.90	-214.9



Treatment	Yield bu/ ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Return	ROI
Check	83.8								
Takeoff (Post Herbicide)	86.2	2.3	\$11 <i>.7</i> 6	\$27.51	2.8	32	\$5.47	\$22.04	402.8
CVA Elite PHP + Symbol Release	82.0	-1.9	\$11. <i>7</i> 6	-\$22.18	-2.2	32+40	\$10.30	-\$32.48	-315.3
CVA Elite PHP + EXP Humic	84.1	0.3	\$11. <i>7</i> 6	\$3.18	0.3	32+40	\$6.76	-\$3.57	-52.9
CVA Elite PHP + Begin	84.0	0.2	\$11 <i>.7</i> 6	\$1.81	0.2	1gal+40	\$2.60	-\$0 <i>.7</i> 9	-30.3
EXP Micro	86.2	2.3	\$11 <i>.7</i> 6	\$27.23	2.8	32	\$15.77	\$11.46	72.7
REP 2									
Check	82.4								
Takeoff (Post Herbicide)	86.8	4.4	\$11 <i>.7</i> 6	\$52.32	5.4	32	\$5.47	\$46.84	856.0
CVA Elite PHP + Symbol Release	86.5	4.1	\$11. <i>7</i> 6	\$48.21	5.0	32+40	\$10.30	\$37.91	368.1
CVA Elite PHP + EXP Humic	87.5	5.1	\$11.76	\$59.88	6.2	32+40	\$6.76	\$53.12	785.9
CVA Elite PHP + Begin	84.7	2.4	\$11. <i>7</i> 6	\$27.65	2.9	1gal+40	\$2.60	\$25.05	963.4
EXP Micro	87.0	4.6	\$11 <i>.7</i> 6	\$54.36	5.6	32	\$15.77	\$38.59	244.6







The 1tRIPr System combines the benefits of tillage with the stewardship and cost reduction of no-till.

- ✓ Till only 1/3 of the soil, leaving 2/3 undisturbed
- Place nutrients precisely, in the root zone at adjustable depths
- ✓ Alleviate compaction to increase infiltration and reduce runoff
- ✓ Eliminating compaction promotes maximum root development
- ✓ Soil warms quicker and provides a consistent planter ride
- ✓ Use in the fall or spring based on your conditions



High Capacity Farming

- ✓ Large frame drawn design with high capacity for liquid and dry fertilizer
- ✓ Narrow transport models available
- Rear nurse tank hitch optional
- √ 6 to 18 row configurations

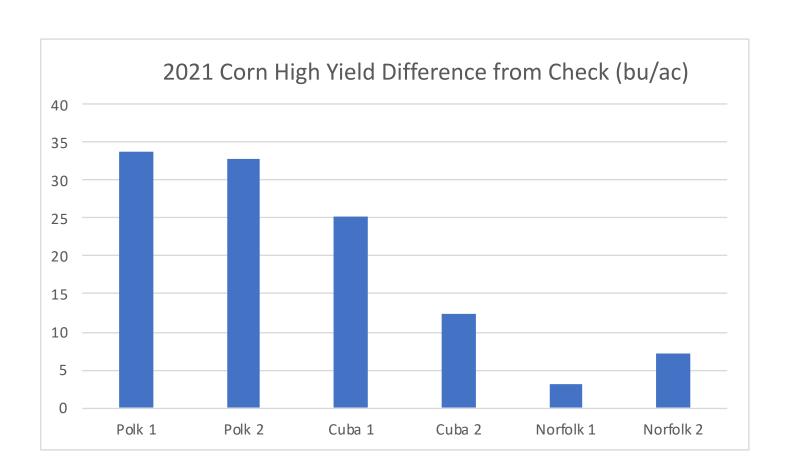


CORN HIGH YIELD

Several Agronomy staff and Professional Ag Services team members are working with growers trying to produce very high yields. In 2021 we decided to set some plots aside to showcase a product mix we would use to reach ultrahigh yield levels. For 2021 we increased our rate of nitrogen at planting by 20 lbs and increased our rate of Begin from 5 gallons/acre to 7 gallons per acre. We achieved some nice yield increases in both dryland and irrigated environments. We will continue this trial in 2022 and probably add a couple of our favorite in-furrow additives and foliar products. We had to take out the Polk comparison to standard treatment checks again due to planter issues.

2021 DATA AVERAGES

Location	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Polk	33.3	11 <i>.7</i>	\$168.07	\$155.11	
Cuba	18.7	12.2	\$94.43	\$81.47	628.67
Norfolk	5.2	1.8	\$26.11	\$6.67	34.30



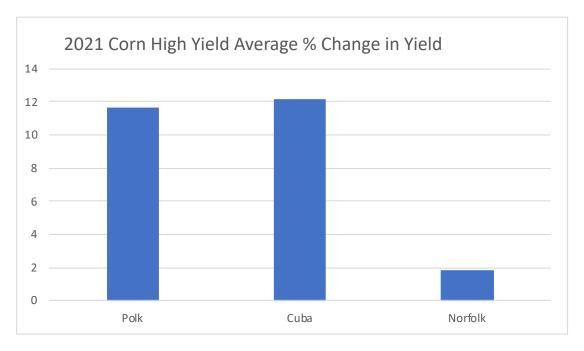
ACS SITE | POLK, NE

Location	Yield bu/ ac	Difference from Check	Corn Price	Revenue Change	% Change in Yield	Rate (oz)	Per acre Cost	Net Return	ROI
Check	281.9								
High Yield	315.6	33.7	\$5.05	\$170.16	12.0	15.2	\$12.96	\$157.20	1213.0
REP 2									
Check	289.1								
High Yield	322.0	32.9	\$5.05	\$165.97	11.4	15.2	\$12.96	\$153.01	1180.7

ACS SITE | CUBA, KS

Location	Yield bu/ ac	Difference from Check	Corn Price	Revenue Change		Rate (oz)	Per acre Cost	Net Return	ROI
Check	146.9								
High Yield	172.0	25.1	\$5.05	\$126.91	1 <i>7</i> .1	15.2	\$12.96	\$113.95	879.2
REP 2									
Check	168.8								
High Yield	181.1	12.3	\$5.05	\$61.96	7.3	15.2	\$12.96	\$49.00	378.1

Location	Yield bu/ ac	Difference from Check	Corn Price	Revenue Change	(hanae	Rate (oz)	Per acre Cost	Net Return	ROI
Check	283.4								
High Yield	286.6	3.2	\$5.05	\$16.18	1.1	15.2	\$19.44	-\$3.26	-16.8
REP 2									
Check	287.4								
High Yield	294.6	<i>7</i> .1	\$5.05	\$36.04	2.5	15.2	\$19.44	\$16.60	85.4









syngenta

2021 SOYBEAN SINGULATION

This past season we decided to try to singulate soybeans to see if they would benefit from more precise spacing. Our goal was that the soybeans could branch out more and collect more sunlight with even spacing, which should increase our yield. This being the first year doing it, we did learn a lot. We did see more evenly spaced plants. However, we did not see yield benefit at the end of the season. We look forward to running this trail again next year to see if the results remain the same.

2021 DATA AVERAGES

Location	Average Difference from Check	Average % Change in Yield	Average Revenue Change \$/a	Average Net Return \$/a	ROI %
Polk	0.5	0.6	\$5.54	-\$274.46	-98.02
Cuba	-2.3	-4.1	-\$26.83	-\$306.83	-109.58
Norfolk	-2.6	-2.9	-\$30.56	-\$310.56	-110.92
Overall averages	-1.5	-2.1	-17.3	-297.3	-106.2

ACS SITE | POLK, NE

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Cost of Plates	Net Return	ROI
Check	84.0							
Singulation	84.0	0.0	\$11. <i>7</i> 6	-\$0.20	0.0	\$280.00	-\$280.20	-100.1
Singulation	79.3	-4.7	\$11. <i>7</i> 6	-\$55.60	-5.6	\$280.00	-\$335.60	-119.9
Rep 2								
Check	81.1							
Singulation	83.8	2.8	\$11. <i>7</i> 6	\$32.58	3.4	\$280.00	-\$247.42	-88.4
Singulation	84.9	3.9	\$11. <i>7</i> 6	\$45.39	4.8	\$280.00	-\$234.61	-83.8

ACS SITE | CUBA, KS

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Cost of Plates	Net Return	ROI
Check	60.9							
Singulation	58.4	-2.4	\$11. <i>7</i> 6	-\$28.61	-4.0	\$280.00	-\$308.61	-110.2
Rep 2								
Check	50.2							
Singulation	48.1	-2.1	\$11. <i>7</i> 6	-\$25.05	-4.2	\$280.00	-\$305.05	-108.9

Treatment	Yield bu/ac	Difference from Check	Soybean Price	Revenue Change	% Change in Yield	Cost of Plates	Net Return	ROI
Check	88.9							
Singulation	86.6	-2.3	\$11. <i>7</i> 6	-\$27.12	-2.6	\$280.00	-\$307.12	-109.7
Singulation	86.5	-2.4	\$11. <i>7</i> 6	-\$28.44	-2.7	\$280.00	-\$308.44	-110.2
Rep 2								
Check	87.9							
Singulation	85.1	-2.9	\$11. <i>7</i> 6	-\$33.71	-3.3	\$280.00	-\$313 <i>.7</i> 1	-112.0
Singulation	85.1	-2.8	\$11.76	-\$32.98	-3.2	\$280.00	-\$312.98	-111.8







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