DUO MAXX

RHIZOVIT DUO

2019- 2020
FIELD TRIAL RESULTS

Timac AGRO | R&D
USA

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2019 - 2020

Field Trial Map

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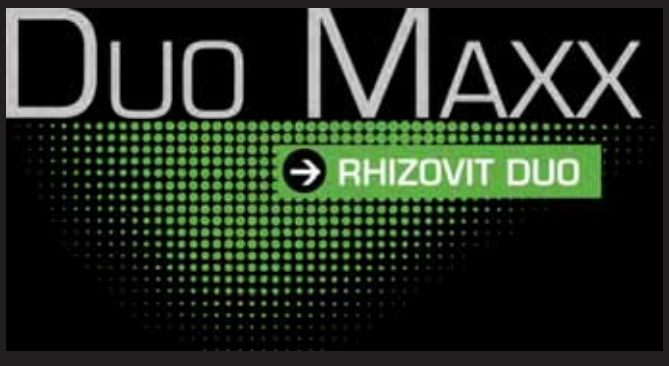
USA

2019- 2020

LOCATION	CROP	PLACEMENT	RATE	OUTCOME
7 site study across Illinois, Iowa, Kentucky & Ohio	Corn	2 x 2 with Starter	8 oz/ac	+5.7 Bu/ac
3 site study across Pennsylvania	Corn	Treated Dry Fertilizer at Sidedress	3 qts/ton Fertilizer	+12.8 Bu/ac
Pennsylvania	Corn	Treated Dry Fertilizer at Sidedress	3 qts/ton Fertilizer	+28.8 Bu/ac
South Carolina	Corn	Treated Fertilizer –Dry & Liquid	2-3 qts/ton Fertilizer	+ 9 Bu/ac
South Carolina	Corn	2 x 2 with Starter	8 oz/ac	+5.3 Bu/ac
North Carolina	Corn	UAN Sidedress – 37.5 Gallons	2 qts/ton Fertilizer	+13.2 Bu/ac
North Carolina	Corn	UAN Sidedress – 50 Gallons	2 qts/ton Fertilizer	+17.8 Bu/ac
Georgia	Corn	In-furrow with Starter Fertilizer	8 oz/ac	+5.1 Bu/ac
Ohio	Corn	In-furrow	8 oz/ac	+11.2 Bu/ac
Indiana	Corn	2 x 2 with Fertilizer	32 oz/ac	+3.3 Bu/ac
Wisconsin	Sweet Corn	In-furrow with Starter Fertilizer	8 oz/ac	+134.9 Dozen/ac
South Carolina	Turfgrass	Treated Homogenized Dry Fertilizer	1 qt/ton Fertilizer	*+ Tissue N (15.8%), P (8.6%), K(10.4%) & S(50%) @ 45 Days After Application* *+ Soil P (20.8%) & K (22.2%) @ 45 Days After Application*
Alabama	Turfgrass	Treated Polymer Coated Blended Dry Fertilizer	3 qt/ton Fertilizer	*+ Tissue N (>31%) @ 30 & 60 Days After Application* *+ Soil S (>29%) @ 30 & 60 Days After Application* *+ Soil K @ 60 & 100 Days After Application >41%*

Field trial outcomes

LOCATION	CROP	PLACEMENT	RATE	OUTCOME
Wisconsin	Potato	UAN @ Hilling	8 oz/ac	+38 cwt/ac *(Russet Norkotah)*
Pennsylvania	Potato	Treated Dry Fertilizer at Planting	3 qts/ton Fertilizer	+43.25 cwt/ac *(Norwis)*
Michigan	Potato	Starter Fertilizer at Planting	8 oz/ac	+15.7 cwt/ac (*Manistee*) +60.2 cwt/ac *(Russet Norkotah)*
Michigan	Potato	Starter Fertilizer at Planting	32 oz/ac	+26.1 cwt/ac (*Manistee*) +88.0 cwt/ac *(Russet Norkotah)*
Florida	Tomato	Treated Dry Fertilizer at Planting (Banded)	2 qts/ton Fertilizer	*+ 293.3 lbs/ac*
Florida	Tomato	Treated Liquid Fertilizer (Injected)	2 qts/ton Fertilizer	*+ 1910.8 lbs/ac*
Florida	Tomato	Treated Dry Fertilizer at Planting (Banded) & Liquid Fertilizer (Injected)	2 qts/ton Fertilizer	*+ 3569.0 lbs/ac*
Florida	Bell Pepper	Liquid Fertilizer Injections	1 qt/ton Fertilizer	*+ 167.8 lbs/ac*
Florida	Bell Pepper	Liquid Fertilizer Injections	1 qt/ton Fertilizer	*+ 895.0 lbs/ac*
Minnesota	Sugarbeet	Starter Fertilizer at Planting	8 oz/ac	+2.16 tons/ac



Duo Maxx in 2 x 2 Starter

Corn

Objective

To assess the yield impact of using 8 oz/acre of Duo Maxx fertilizer additive in a liquid 2 x 2 starter fertilizer application.

Site Location

Seven Site Study
(Ohio, Kentucky, C. Illinois, Iowa)

Researcher

Third-Party Contract Research Org.

Study Information

This study was across seven sites and was part of a multi-year study evaluating the efficacy of Duo Maxx fertilizer additive placed in a starter solution. Within this on-going study, the 2-year average over seven sites has found **the addition of Duo Maxx has yielded 5.7 bu/ac more than untreated starter fertilizer.**

2020 Three-Site Average

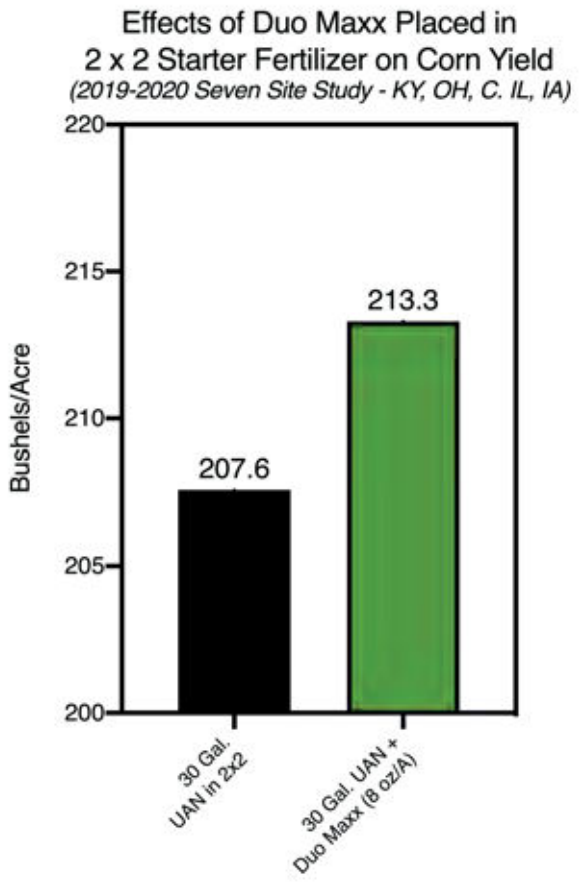
+5.7 bu/ac

More than Untreated UAN

ROI:

$15.12/ac

More than Untreated UAN



Graph: Duo Maxx improved averaged yield by 5.7 bu/ac when placed in the 2x2 with starter fertilizer. The Gross Revenue was calculated at $3.75/bu of Corn Prices, and retail price of Duo Maxx was calculated at $100/gallon.

Application

Treatment	Application Rate
Control – Starter Fertilizer only	30 Gal/Acre UAN
Duo Maxx + Starter Fertilizer	8 oz/Acre + 30 Gal/Acre

Duo Maxx on Dry Fertilizer Sidedress

Corn

Objective

To compare the effects of Duo Maxx added to nitrogen fertilizer to improve both yield and nitrogen use efficiency.

Site Location

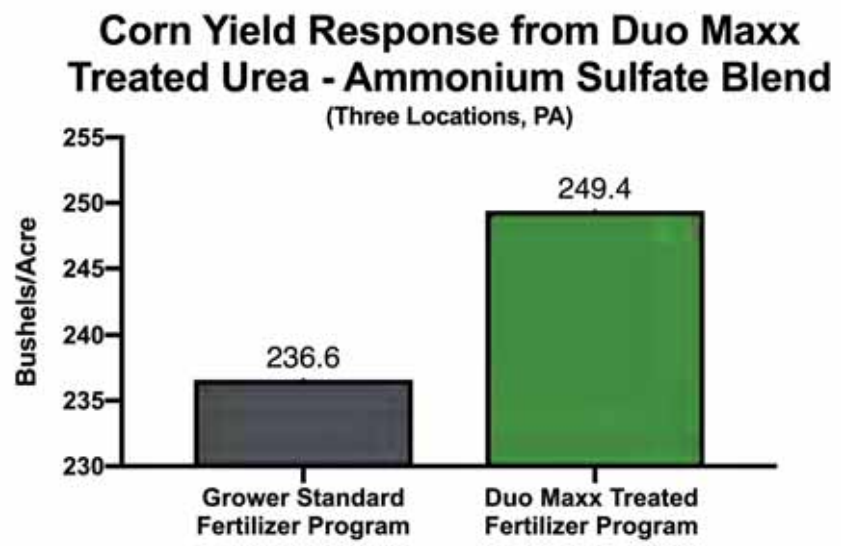
Eastern Lancaster, Western Lancaster, Franklin PA

Researcher

Third-Party Contract Research Org.

Study Information

This is a three location average with each location replicated four times. All of the plots were no till with the nitrogen applied early side dress at V3. The previous crops were corn or sorghum. The nitrogen was applied at 150 units per acre as 36-0-0-7S surface applied banded.



Key Findings

+12.8 bu/ac with Duo Maxx

NEU of .6 units of N per bushel

Application

Treatment	Application Rate	Yield bu
Control	150 units	236.6
Duo Maxx with Nitrogen	150 units	249.4 (+12.8)

Duo Maxx on Dry Fertilizer Sidedress

Corn

Objective

To compare the effects of Duo Maxx added to nitrogen fertilizer to improve both yield and nitrogen use efficiency.

Site Location

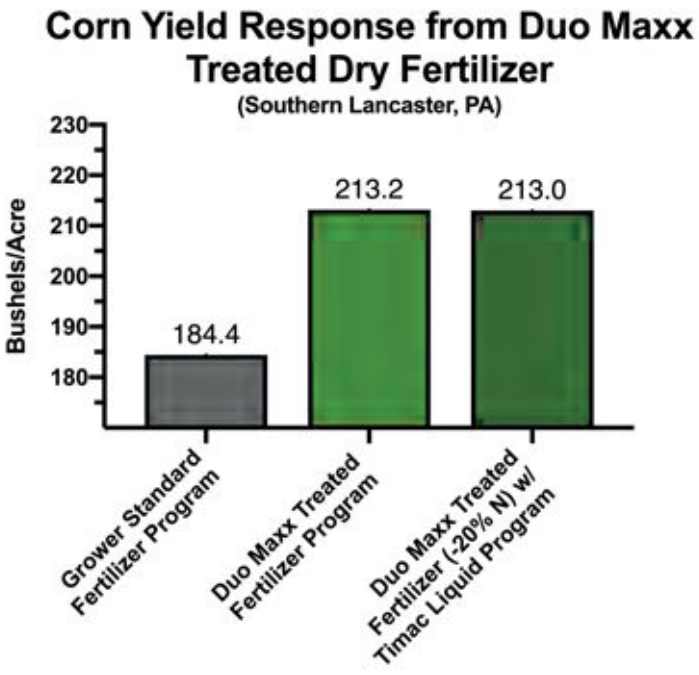
Southern Lancaster, PA

Researcher

Third-Party Contract Research Org.

Study Information

This plot was replicated four times. The plots was no till with the nitrogen applied early side dress at V3. The previous crop was corn with manure applied in the fall. The nitrogen was applied at 120 units per acre as 36-0-0-7S surface applied banded. 2018 was an excessive rain year. The annual rainfall was 2X normal with much of the rain happening late summer and fall. This plot had multiple 4-5” rain events and nitrogen loss was evident.



Key Findings

+28.8 bu/ac with Duo Maxx

NEU of .7 units of N per bushel

Application

Treatment	Application Rate	Yield bu
Control	120 units	184.4
Duo Maxx with nitrogen	120 units	213.2 (+28.8)
Duo Maxx with 20% less nitrogen with Fertiactyl (In-furrow) & Fertileader (V5)	96 units	213 (+28.6)

Duo Maxx on Pre-Plant & Side-Dress Fertilizer

Corn

Objective

To assess the yield response of adding Duo Maxx at to 108 Lbs of urea (50 Lbs N) as a pre-plant fertilizer application and a liquid fertilizer side-dress split of 57 gallons (150 lbs N in grain corn.

Site Location

Blackville, SC

Researcher

Third-Party Contract Research Org.

Study Information

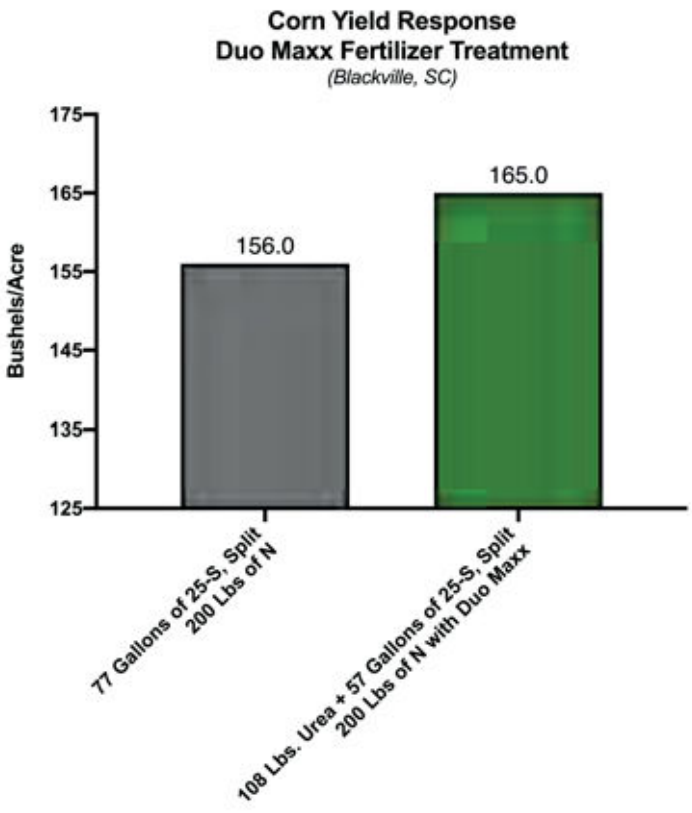
Variety	DK 65-20
Population	32,987

Key Findings

+9 bu/ac

when Urea & Liquid Fertilizer treated with Duo Maxx when compared to untreated liquid fertilizer only program

ROI: $15.00/ac



Graph: Duo Maxx treatment improved yield by 9 bushels/ac when added to pre-plant urea and 25-S. The Gross Revenue was calculated at $3.75/bushel for corn with Duo Maxx retail cost of $100/Gallon. Duo Maxx was used at labelled rates of 3 qt/dry ton (5 oz) and 2 qt/liquid ton of fertilizer (19 oz).

Application

Treatment	Application Rate
25-S Liquid Fertilizer	77 Gallons (20 @ Plant, 20 @ V3, 37 @ V6) 200 Lbs of N Total
Urea at Planting w/ Duo Maxx + 25-S at Side-dress w/ Duo Maxx	108 Lbs (50 Lbs of N) + 57 Gallons (20 @ V3, 37 @ V6) 200 Lbs of N Total

Duo Maxx in 2 x 2 Starter

Corn

Objective

To assess the yield impact of using 8 oz/acre of Duo Maxx fertilizer additive in a liquid 2 x 2 starter fertilizer application.

Site Location

Hampton County, SC

Researcher

Blake Brown, CCA
Timac Agro USA

Study Information

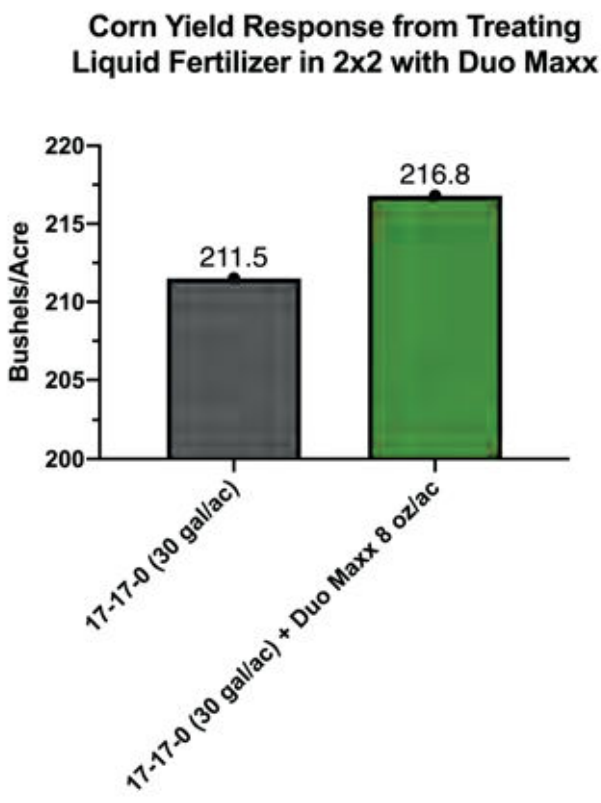
Planting Date	20-March-2019
Harvest Date	14-Aug-2019
Variety	DKC 62-06 Conventional (Non-GM)
Population	32,000

Key Findings

+5.3 bu/ac

Duo Maxx vs Control

ROI: + $15.10/ac



Graph: Duo Maxx improved yield. The Gross Revenue was calculated at $4.03/bu of Non-GM Feed Grade Corn Prices via USDA Market Report at time of study. .

Application

Treatment	Application Rate
Control – Starter Fertilizer only	30 Gal/Acre
Duo Maxx + Starter Fertilizer	8 oz/Acre + 30 Gal/Acre

Study Design

Treatment was completed in-field on interior rows with checks on both sides of treated area. Soil analysis was completed to ensure uniformity in fertility and consistent soil type throughout the field.

Duo Maxx with Sidedress UAN

Corn

Objective

To assess the yield response of adding Duo Maxx fertilizer additive to different rates of 30% UAN at V7 side-dress application in grain corn.

Site Location

Plymouth, NC

Researcher

Tidewater Research Station
North Carolina State University

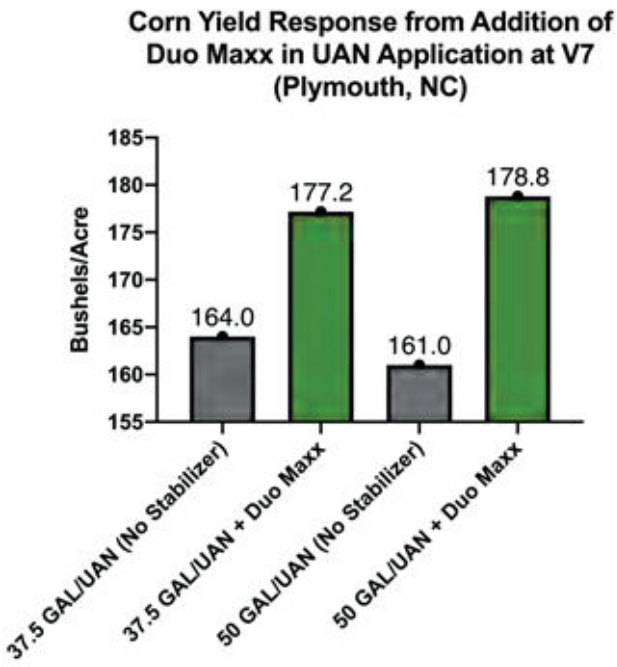
Study Information

Planting Date	7-May-2020
Harvest Date	28-Sept-2020
Variety	P1464 YHR
Population	34,000

Key Findings

+13.2 bu/ac
when Duo Maxx applied with 37.5 Gal/UAN
ROI: $39.32/ac

+17.8 bu/ac
when Duo Maxx applied with 50 Gal/UAN
ROI: + $53.13/ac



Graph: Duo Maxx added 13.2 and 17.8 more bu/ac than untreated UAN, respectively. ROI was calculated at $3.75/bushel for corn with Duo Maxx retail cost of $100/Gallon.

Application

Treatment	Application Rate
30% UAN @ 75% Rec. Rate	37.5 Gal/A
30% UAN @ 75% Rec. Rate treated w/ Duo Maxx	37.5 Gal/A + 2 Quarts/Fluid Ton
30% UAN @ 100% Rec. Rate	50 Gal/A
30% UAN @ 100% Rec. Rate treated w/ Duo Maxx	50 Gal/A + 2 Quarts/Fluid Ton

Duo Maxx with In-furrow Starter

Corn

Objective

To assess the yield impact of using 8 oz/acre of Duo Maxx fertilizer additive with an in-furrow starter fertilizer application.

Site Location

Fort Valley, GA

Researcher

Michael Pisciotta, CCA
Timac Agro USA

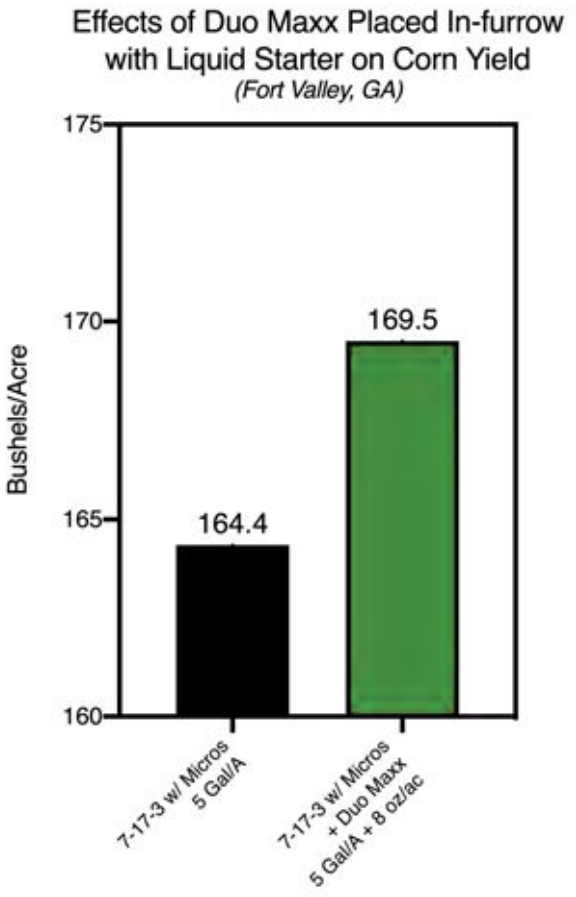
Study Information

This study was conducted on a grower's farm with a uniform soil. The experimental design was a split farm consisting of two uniform blocks of similar acreage and soil types separated by a road-way on the same property. Variety (P1847), irrigation scheduling, fertility protocols and all weed/pest management sprays were equal between the two blocks.

Key Findings

+5.1 bu/ac
More than Untreated Starter

ROI:
$12.88/ac
More than Untreated Starter



Graph: Duo Maxx improved averaged yield by 5.1 bu/ac when placed with in-furrow starter fertilizer. The Gross Revenue was calculated at $3.75/bu of Corn Prices, and retail price of Duo Maxx was calculated at $100/gallon.

Application

Treatment	Application Rate
7-17-3 w/ Micros	5 Gal/Acre
7-17-3 w/ Micros + Duo Maxx	5 Gal/Acre + 8 oz/Acre

Duo Maxx In-furrow at Planting

Corn

Objective

To assess the yield impact of using 8 oz/ac of Duo Maxx fertilizer additive at planting followed by grower standard practice of 175 units of N at side-dress.

Site Location

Bellefontaine, OH

Researcher

Third-Party Contract Research Org.

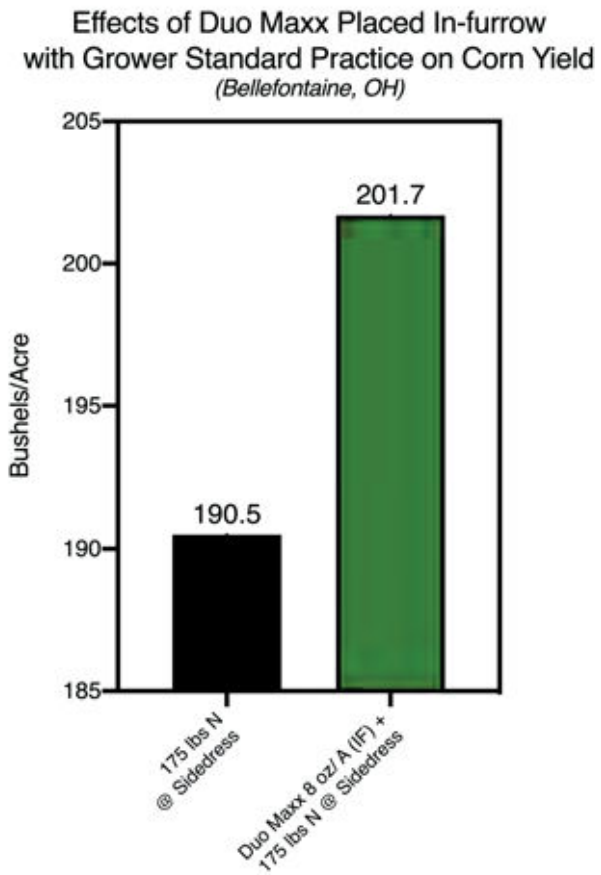
Study Information

This study was completed as part of a trial evaluating microbial and fertilizer additive products that claim to have an impact on nitrogen management. Duo Maxx is intended as tool to promote nutrient use efficiency to be placed with starter, side-dress and top-dress fertilizer applications.

Key Findings

+11.2 bu/ac
More than Control

ROI:
$35.75/ac
More than Control



Graph: Duo Maxx improved averaged yield by 11.2 bu/ac when placed in-furrow with grower standard practice. The Gross Revenue was calculated at $3.75/bu of Corn Prices, and retail price of Duo Maxx was calculated at $100/gallon.

Application

Treatment	Application Rate
Control	175 lbs N @ Side-dress
Duo Maxx In-furrow	8 oz/Acre In-furrow + 175 lbs N @ Side-dress

Duo Maxx in UAN at Planting

Corn

Objective

To assess the yield impact of using 32 oz/ac of Duo Maxx fertilizer additive in 65 gallons of UAN fertilizer in the 2 x 2 at planting.

Site Location

Mount Vernon, IN

Researcher

Third-Party Contract Research Org.

Study Information

Planting Date	29-May-2020
Harvest Date	26-Sept-2020
Variety	LG68C22V
Population	30,000

Key Findings

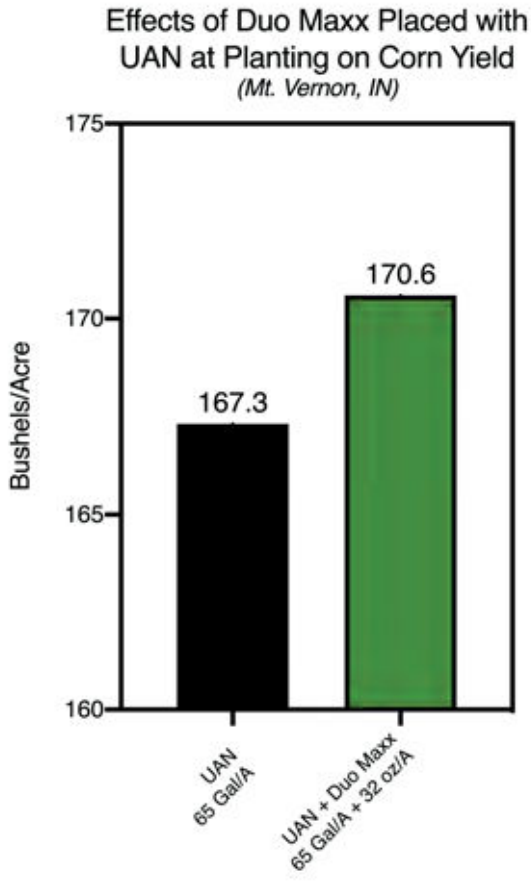
+3.3 bu/ac

More than Untreated UAN

ROI:

-$12.58/ac

less than Untreated UAN



Graph: Duo Maxx improved averaged yield by 3.3 bu/ac when placed in the 2x2 with starter fertilizer. The Gross Revenue was calculated at $3.75/bu of Corn Prices, and retail price of Duo Maxx was calculated at $100/gallon.

Application

Treatment	Application Rate
Control – UAN at Planting	65 Gal/Acre UAN
Duo Maxx + UAN at Planting	32 oz/Acre + 65 Gal/Acre

Duo Maxx with In-Furrow Starter

Sweet Corn

Objective

To assess the impact of using 8 oz/acre of Duo Maxx fertilizer additive with in-furrow liquid starter on plant emergence and yield.

Site Location & Researcher

University of Wisconsin
Hancock Research Station

Study Information

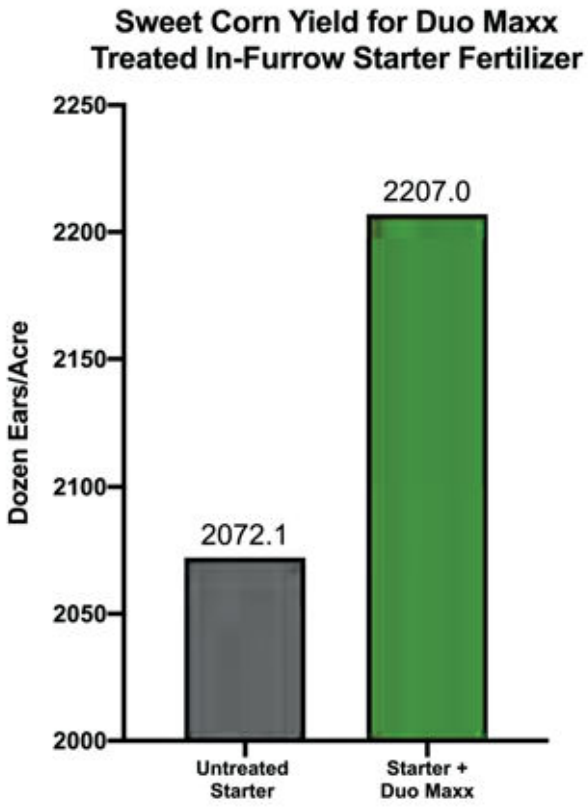
Planting Date	15-May-2020
Harvest Date	14-Aug-2020
Variety	Elle F1

Key Findings

+134.9 dozen/ac
More than Untreated Fertilizer

+6.5%
Improvement in plant stand over control

ROI: $263.59/ac
More than Untreated Fertilizer



Graph: Duo Maxx improved yield by +134.9 dozen/ac. The Gross Revenue was calculated at $2/dozen for yellow sweet corn. The retail price of Duo Maxx was calculated at $100/gallon.

Application

Treatment	Application Rate
Control – Starter Fertilizer only	5 Gal/Acre
Duo Maxx + Starter Fertilizer	8 oz/Acre + 5 Gal/Acre

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Duo Maxx on Polymer Coated Blend

Turfgrass

Objective

To assess soil and plant tissue levels of a treatment of Duo Maxx fertilizer additive on a dry fertilizer blend of 25-0-12 (4.57% S) featuring 21% N from controlled release polymer coated urea compared to the blend without Duo Maxx fertilizer additive.

Site Location

Opelika, AL

Researcher

Michael Pisciotta, CCA & Jeff Brown
Timac Agro USA

Study Information

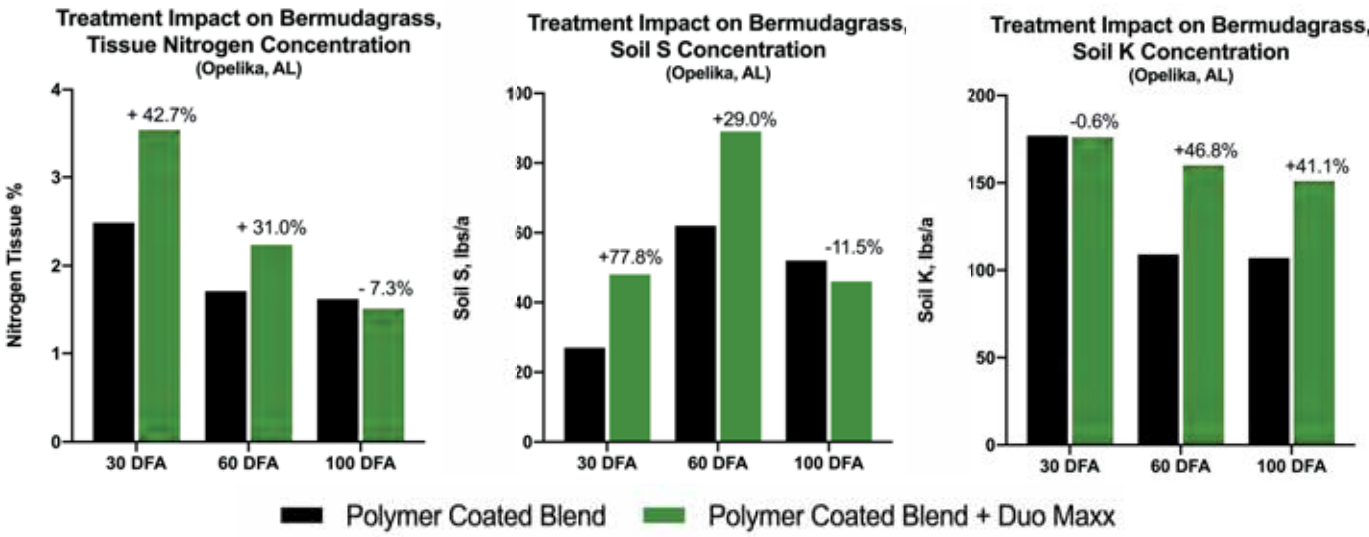
This study was conducted on sports turf (Tifway 419 Bermudagrass) with uniform management practices including consistent levels of mowing, irrigation, fertilization and IPM practices. The addition of the Duo Maxx fertilizer additive was completed prior to application in a small batch fertilizer blender to mirror labeled rate of material per ton of dry granular fertilizer. Soils were uniform with pH of grower standard blend at 6.23 vs pH of grower standard with Duo Maxx at 6.13 with CEC's being 8 and 6, respectively.

Key Findings

Increased Tissue Nitrogen Concentration at 30 **(+42.7%)** & 60 Days **(+31.0%)** Following Fertilizer Application

Increased Soil Potassium Concentration at 60 **(+46.8%)** & 100 Days **(+41.1%)** Following Fertilizer Application

Increased Soil Sulfur Concentration at 30 **(+77.8%)** & 60 Days **(+29.0%)** Following Fertilizer Application



Application

Treatment	Application Rate
Grower Standard Blend	25-0-12 (21% Controlled Release N from Polymer Coated Urea)
Grower Standard Blend + Duo Maxx	25-0-12 (21% Controlled Release N from Polymer Coated Urea) + 3 Qt/Ton

Duo Maxx on Homogenous Fertilizer

Turfgrass

Objective

To assess soil and plant tissue levels of a treatment of Duo Maxx fertilizer additive on a dry ammoniated/ homogenous fertilizer (21-7-14, 5.1%S) compared to the dry fertilizer without Duo Maxx fertilizer additive.

Site Location

Mount Pleasant, SC

Researcher

Blake Brown, CCA
Timac Agro USA

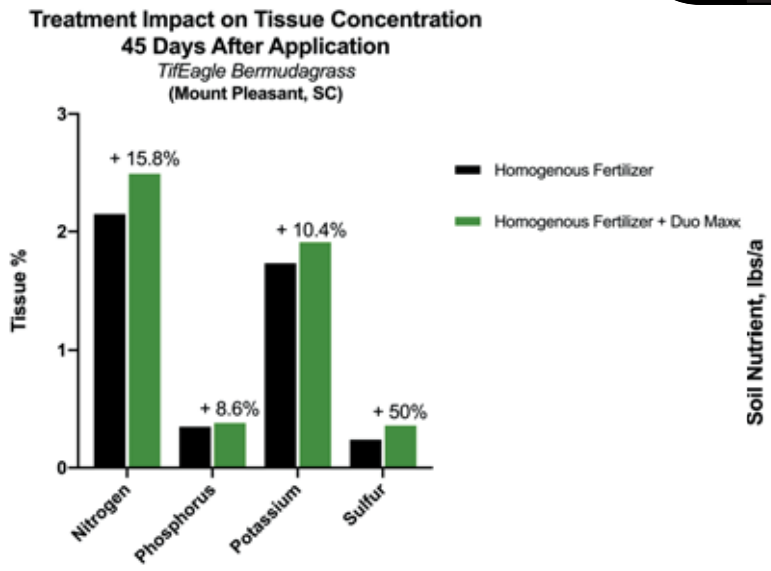
Study Information

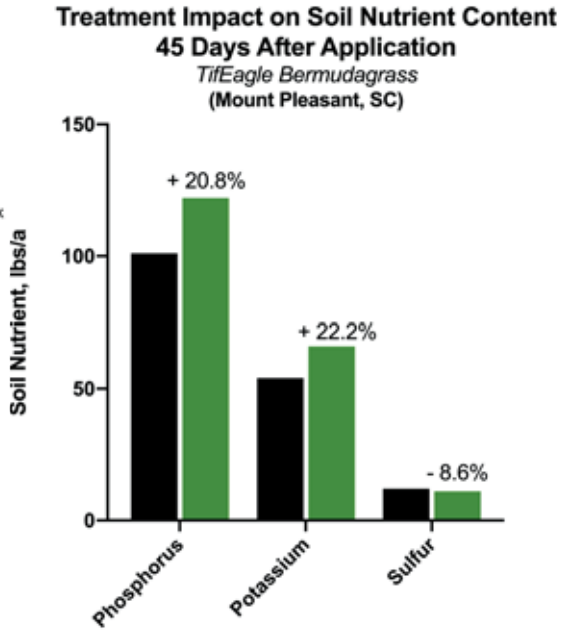
This study was conducted on sports turf (TifEagle Bermudagrass) with uniform management practices including consistent levels of mowing, irrigation, fertilization and IPM practices. The addition of the Duo Maxx fertilizer additive was completed prior to application in a small batch fertilizer blender at listed rate below of additive per ton of dry granular fertilizer. Soils were uniform with pH of grower standard blend at 6.3 vs pH of grower standard with Duo Maxx at 6.4 with CEC's being 4.3 and 4.0, respectively.

Key Findings

Increased Tissue Concentration of Nitrogen **(15.8%),** Phosphorus **(8.6%),** Potassium **(10.4%)** & Sulfur **(50%)** at 45 Days After Fertilizer Application

Increased Soil Nutrient Content of Phosphorus **(20.8%)** & Potassium **(22.2%)** at 45 Days After Fertilizer Application





Application

Treatment	Application Rate
Homogenous Granular Fertilizer	21-7-14 with 5.1% S
Homogenous Granular Fertilizer + Duo Maxx	21-7-14 with 5.1% S+ 1 Qt/Ton

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Duo Maxx with Nitrogen Application

Potato

Objective

To compare the yield and quality impact in potato using a Duo Maxx treated UAN applied at final hilling compared to untreated UAN.

Site Location & Researcher

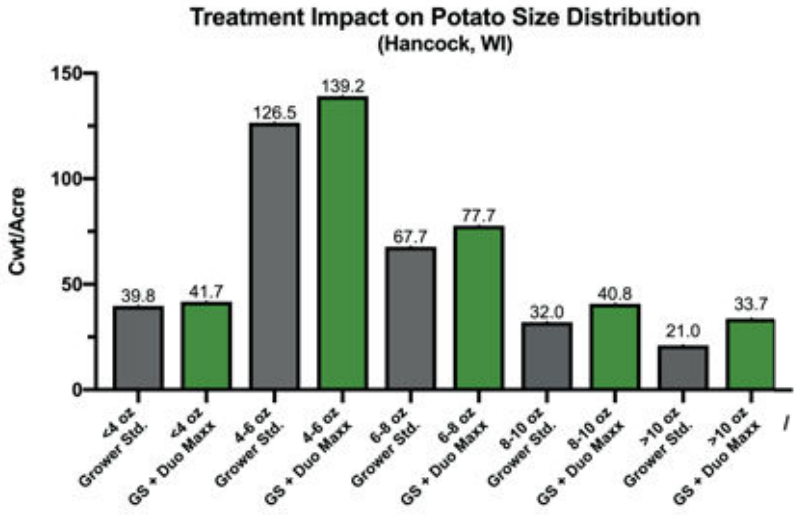
University of Wisconsin
Hancock Research Station

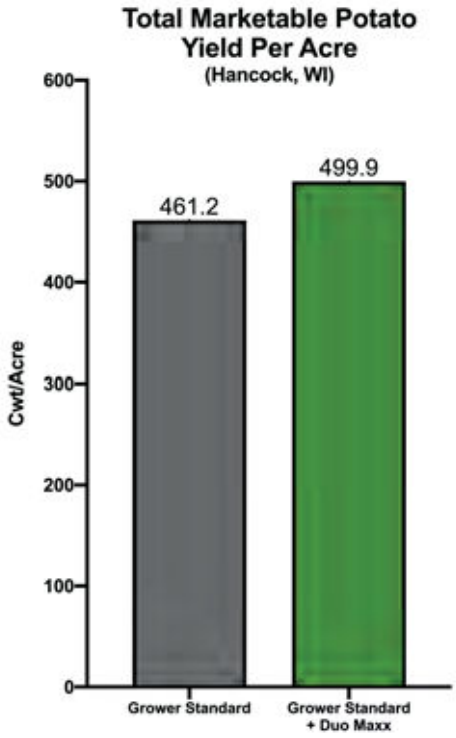
Study Information

Planting Date	22-April-2020
Harvest Date	15-Sept-2020
Variety	Russet Norkota

Application

Treatment	Application Rate
UAN	Standard Rate @ Final Hilling
UAN Treated with Duo Maxx	Standard Rate @ Final Hilling with 8 oz/A





Key Findings

+38 cwt/ac with **+14%**

Gain in Marketable Yield for Duo Maxx treated UAN

ROI: $1352/ac

Gains in Tuber Size, Yield & Quality

+15.9% in Tuber Counts
+4% in Average Tuber Size
-22.6% in Defects/Culls

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Duo Maxx on Dry Fertilizer at Planting

Potato

Objective

To compare the yield and quality response in potato by treating recommended pre-plant fertilizer blend with Duo Maxx at 3 qts/ton against the same rate of untreated blend.

Site Location

Schnecksville, PA

Researcher

Jeff Schneck, CCA
Timac Agro USA

Study Information

Variety	Norwis
Population	18,448

Application

Treatment	Application Rate
14-14-14	800 Lbs/Ac @ Planting
14-14-14 w/ Duo Maxx	800 Lbs/Ac @ Planting + 38.4 oz/A

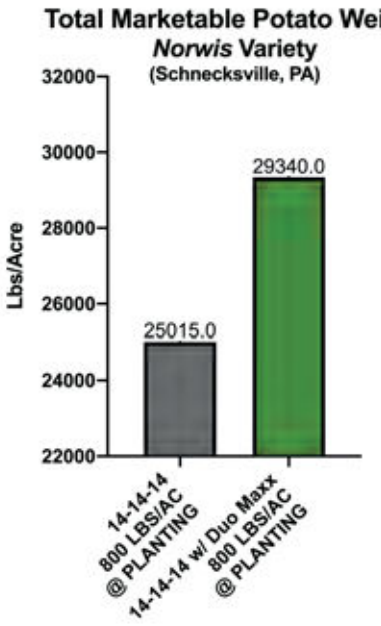
Key Findings

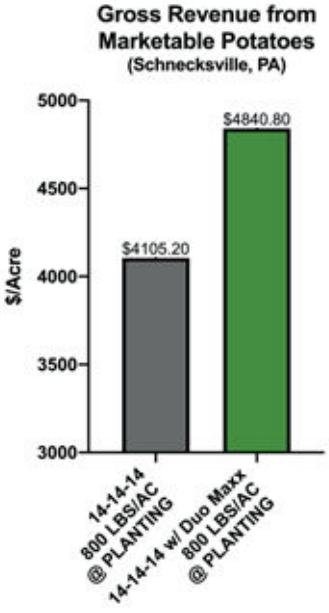
+43.25

Cwt/Ac in marketable potato yield when dry fertilizer blend treated with Duo Maxx

ROI: $705.55/ac

Return when dry fertilizer blend treated with Duo Maxx





Graphs: Dry Fertilizer treated with Duo Maxx increased yield 4,325 lbs/ac or 43.25 cwt/ac over untreated fertilizer of same rate and increased revenue by $735.60/ac. Revenue was calculated at $19/cwt for Chef's, $16/cwt for #1's and $7/cwt for B's. Duo Maxx was calculated at retail cost of $100/gallon.

Economics Tables

Grower Standard	Chef's	#1's	B's	Marketable	Cost of Treatment	Gross- Cost=
Cwt/Ac	50.05	194.85	5.25	250.15		
Gross Revenue	$ 950.95	$ 3,117.60	$ 36.75	$ 4,105.30	(-)	$ 4,105.30

Grower Standard + Duo Maxx	Chef's	#1's	B's	Marketable	Cost of Treatment	Gross- Cost=	Change over GS
Cwt/Ac	63.95	224.4	5.05	293.4			
Gross Revenue	$ 1,215.05	$ 3,590.40	$ 35.35	$ 4,840.80	$ (29.95)	$ 4,810.85	$ 705.55

Duo Maxx with Liquid Fertilizer

Potato

Objective

To compare the yield response and emergence in two potato varieties by treating liquid fertilizer blend with Duo Maxx at 8 oz/acre against the same rate of untreated liquid fertilizer.

Site Location

White Pigeon, MI

Researcher

Third Party

Contract Research Organization (CRO)

Study Information

Variety	Manistee, Russet Norkotah
Population	20,000

Key Findings

+15.7 cwt/ac

In marketable potato yield for Manistee Variety when Duo Maxx added to liquid fertilizer

ROI: $150.76/ac

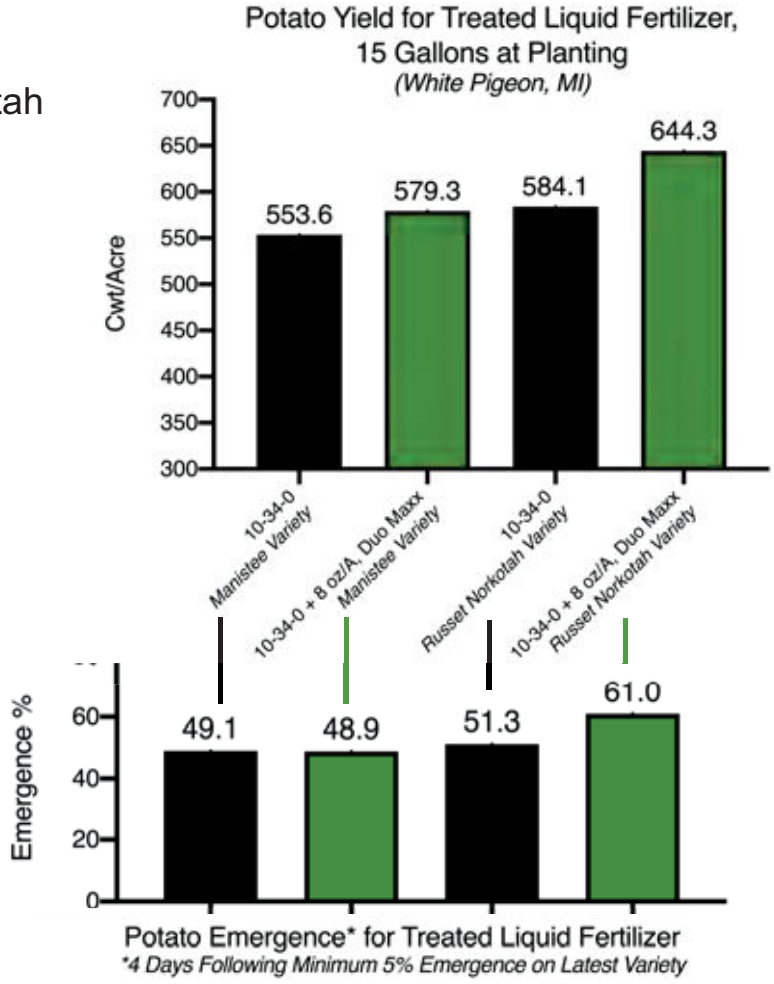
Return when liquid fertilizer treated with Duo Maxx

+60.2 cwt/ac

In marketable potato yield for Russet Norkotah Variety when Duo Maxx added to liquid fertilizer

ROI: $595.76/ac

Return when liquid fertilizer treated with Duo Maxx



Graphs: Liquid Fertilizer treated with Duo Maxx increased yield 15.7 cwt/ac and 60.2 cwt/ac, respective of trialed varieties. Revenue was calculated at $10/cwt. Duo Maxx was calculated at retail cost of $100/gallon.

Application

Treatment	Application Rate
10-34-0	15 Gallons @ Planting
10-34-0 w/ Duo Maxx	15 Gallons @ Planting + 8 oz/A

Duo Maxx with Liquid Fertilizer

Potato

Objective

To compare the yield response and emergence in two potato varieties by treating liquid fertilizer blend with Duo Maxx at 32 oz/acre against the same rate of untreated liquid fertilizer.

Site Location

White Pigeon, MI

Researcher

Third Party

Contract Research Organization (CRO)

Study Information

Variety	Manistee, Russet Norkotah
Population	20,000

Key Findings

+26.1 cwt/ac

In marketable potato yield for Manistee Variety when Duo Maxx added to liquid fertilizer

ROI: $236.04/ac

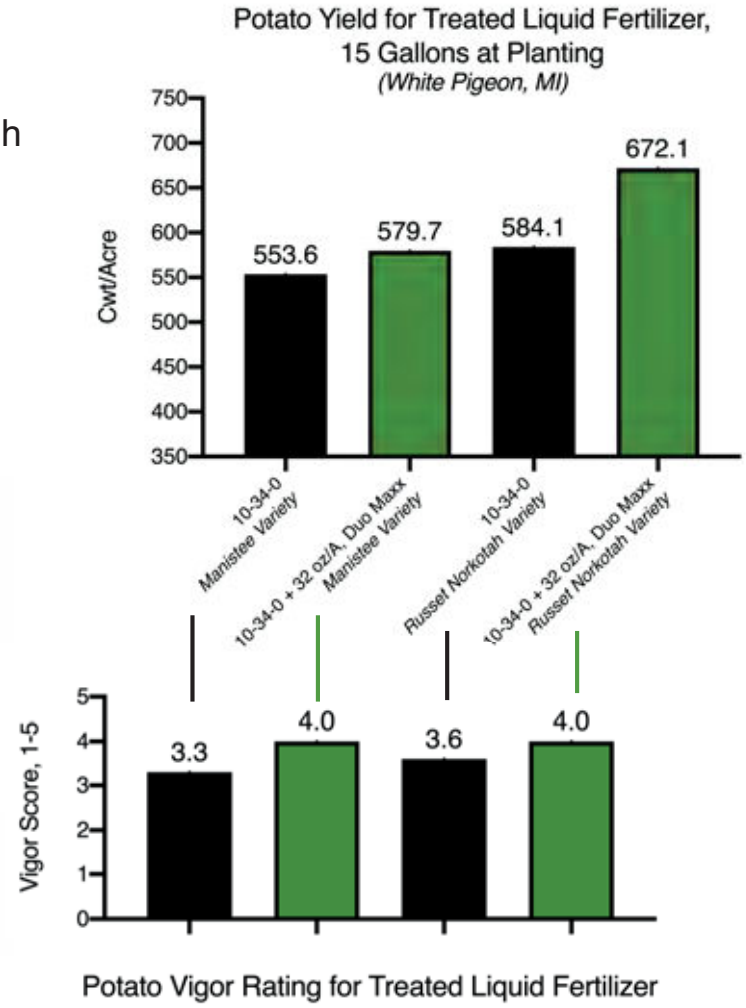
Return when liquid fertilizer treated with Duo Maxx

+88.0 cwt/ac

In marketable potato yield for Russet Norkotah Variety when Duo Maxx added to liquid fertilizer

ROI: $855.04/ac

Return when liquid fertilizer treated with Duo Maxx



Graphs: Liquid Fertilizer treated with Duo Maxx increased yield 26.1 cwt/ac and 88 cwt/ac, respective of trialed varieties. Revenue was calculated at $10/cwt. Duo Maxx was calculated at retail cost of $100/gallon.

Application

Treatment	Application Rate
10-34-0	15 Gallons @ Planting
10-34-0 w/ Duo Maxx	15 Gallons @ Planting + 32 oz/A

Duo Maxx on Banded Fertilizer

Tomato

Objective

To assess the yield response of adding Duo Maxx fertilizer additive to banded fertilizer placed in the bed at planting for field tomato.

Site Location

Thonotosassa, FL

Researcher

Florida Ag Research

Contract Research Organization

Study Information

Transplant Date	11-Sept-2020
Harvest Dates	18-Nov-2020, 24-Nov-2020, 8-Dec-2020
Variety	Charger
Population	4,585

Key Findings

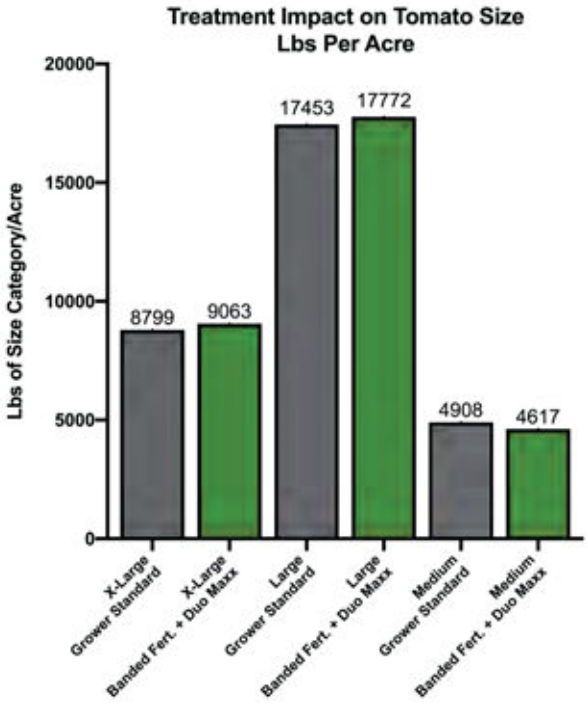
Increased Lbs of Marketable Tomato by

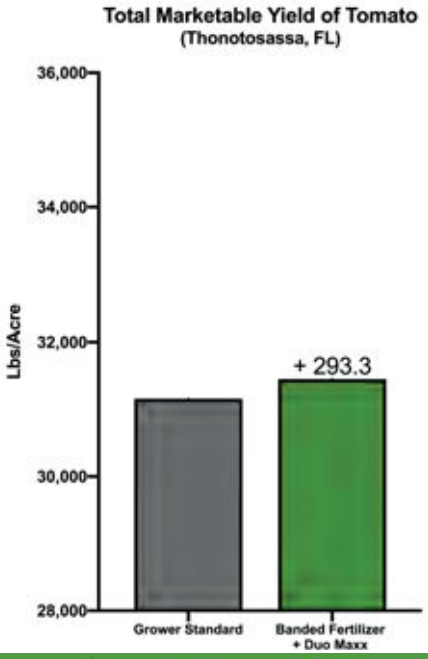
293.3 lbs/A

Duo Maxx treatment of banded fertilizer at planting generated an ROI of

$160.69/A

Cost of Duo Maxx to treat 95 lbs = $3.56/A
Marketable Tomatoes priced at $14/box for 25 lbs





Application

Treatment	Application Rate
Grower Standard Dry Blend	21-0-21 (95 lbs/ac banded at planting)
Grower Standard Dry Blend + Duo Maxx	21-0-21 (95 lbs/ac banded at planting) + 2 Qt/Ton

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Duo Maxx With Injected Fertilizer

Tomato

Objective

To assess the yield response of adding Duo Maxx fertilizer additive with liquid fertilizer injected throughout the growing season for field tomato.

Site Location

Thonotosassa, FL

Researcher

Florida Ag Research

Contract Research Organization

Study Information

Transplant Date	11-Sept-2020
Harvest Dates	18-Nov-2020, 24-Nov-2020, 8-Dec-2020
Variety	Charger
Population	4,585

Key Findings

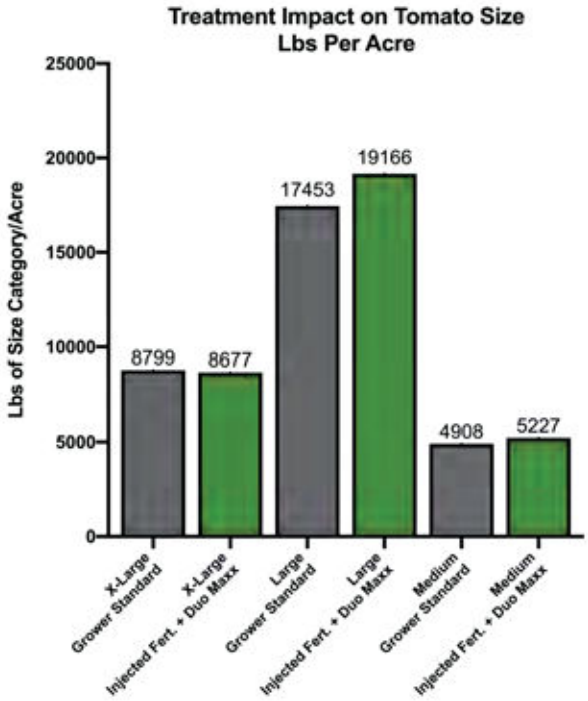
Increased Lbs of Marketable Tomato by

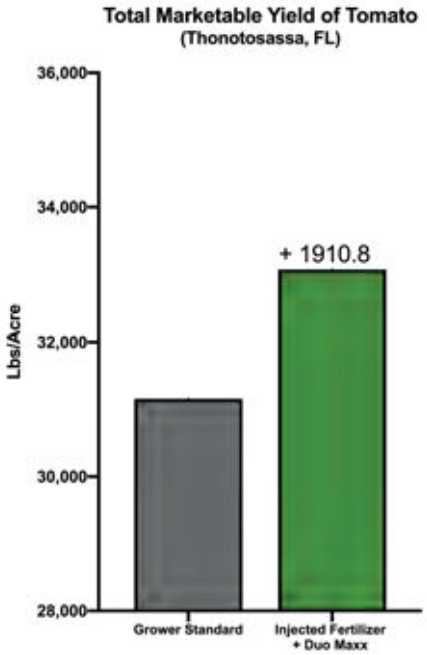
1910.8 lbs/A

Duo Maxx treatment of injected fertilizer during the season generated an ROI of

$1046.88/A

Cost of Duo Maxx to treat 84.37 gal= $23.19/A
Marketable Tomatoes priced at $14/box for 25 lbs





Application

Treatment	Application Rate
Grower Standard Liquid Fertilizer	4-2-9 (84.37 gal/ac total during season)
Grower Standard Liquid Fertilizer + Duo Maxx	4-2-9 (84.37 gal/ac total during season) + 2 Qt/Ton

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Duo Maxx With Banded & Injected Fertilizer

Tomato

Objective

To assess the yield response of adding Duo Maxx fertilizer additive on banded dry fertilizer at planting and with liquid fertilizer injected throughout the growing season for field tomato.

Site Location

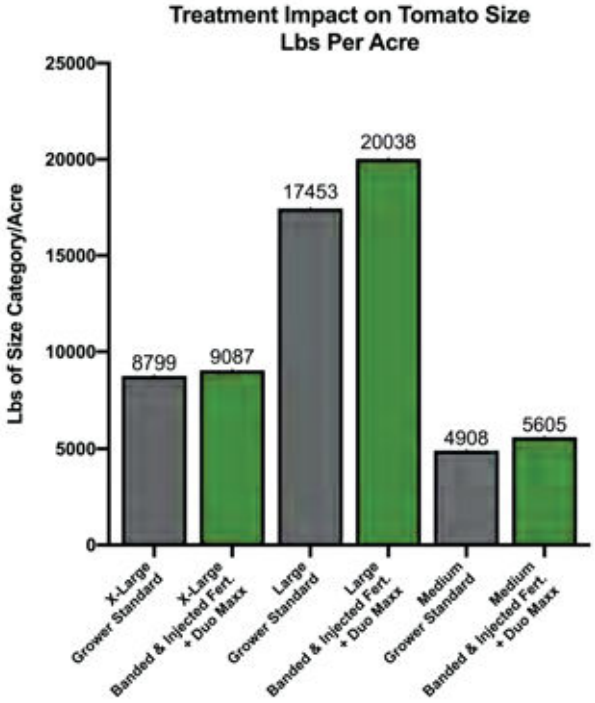
Thonotosassa, FL

Researcher

Florida Ag Research
Contract Research Organization

Study Information

Transplant Date	11-Sept-2020
Harvest Dates	18-Nov-2020, 24-Nov-2020, 8-Dec-2020
Variety	Charger
Population	4,585



Key Findings

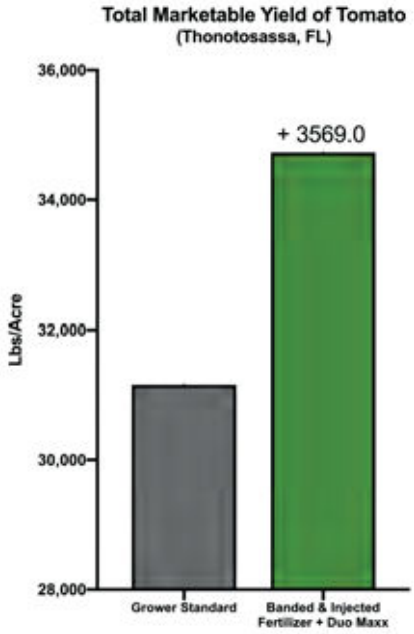
Increased Lbs of Marketable Tomato by

3569.0 lbs/A

Duo Maxx treatment of banded and injected fertilizer generated an ROI of

$1971.90/A

Cost of Duo Maxx to treat fertilizer = $26.75/A
Marketable Tomatoes priced at $14/box for 25 lbs



Application

Treatment	Application Rate
Grower Standard Dry Blend & Liquid Fertilizer	21-0-21 (95 lbs/ac banded at planting) 4-2-9 (84.37 gal/ac total throughout season)
Grower Standard + Duo Maxx on Dry Blend & Liquid Fertilizer	21-0-21 (95 lbs/ac banded at planting) + 2 Qt/Ton 4-2-9 (84.37 gal/ac total throughout season) + 2 Qt/Ton

Duo Maxx With Liquid Fertilizer

Bell Pepper

Objective

To assess the yield response of adding Duo Maxx fertilizer additive at a rate of 1 quart/acre with liquid fertilizer injected throughout the growing season for bell pepper.

Site Location

Thonotosassa, FL

Researcher

Florida Ag Research

Contract Research Organization

Study Information

Transplant Date	11-Sept-2020
Harvest Dates	5-Nov-2020, 11-Nov-2020, 23-Nov-2020
Variety	Aristotle
Population	13,403

Key Findings

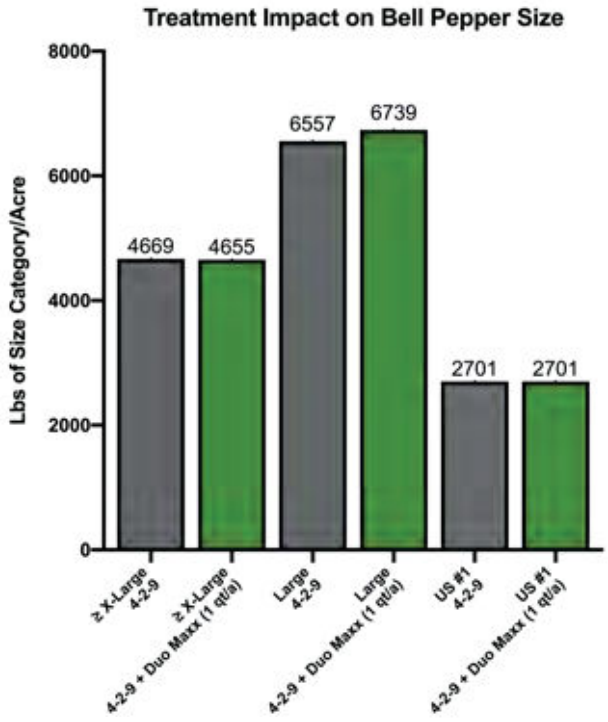
Increased Lbs of Marketable Bell Peppers by

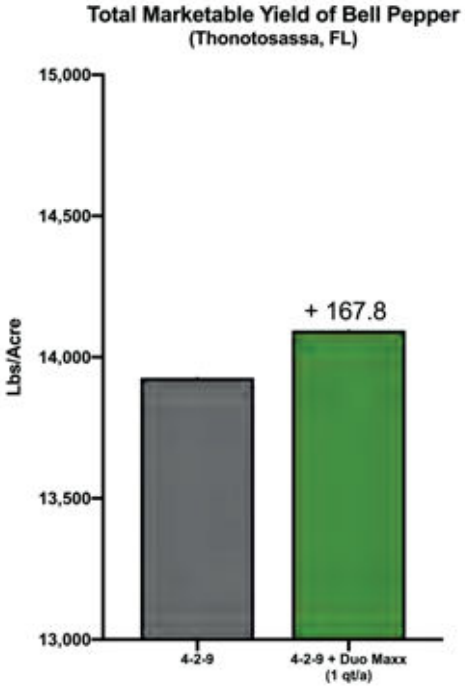
167.8 lbs/A

Duo Maxx treatment of injected fertilizer generated an ROI of

$58.92/A

Cost of Duo Maxx to treat fertilizer = $25.00/A
Marketable Peppers priced at $14/carton for 28 lbs





Application

Treatment	Application Rate
Grower Standard Liquid Fertilizer	4-2-9 (84.37 gal/ac total throughout season)
Grower Standard Liquid Fertilizer + Duo Maxx	4-2-9 (84.37 gal/ac total throughout season) + 1 Qt/A

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Duo Maxx With Liquid Fertilizer

Bell Pepper

Objective

To assess the yield response of adding Duo Maxx fertilizer additive at a rate of 3 quarts/acre with liquid fertilizer injected throughout the growing season for bell pepper.

Site Location

Thonotosassa, FL

Researcher

Florida Ag Research

Contract Research Organization

Study Information

Transplant Date	11-Sept-2020
Harvest Dates	5-Nov-2020, 11-Nov-2020, 23-Nov-2020
Variety	Aristotle
Population	13,403

Key Findings

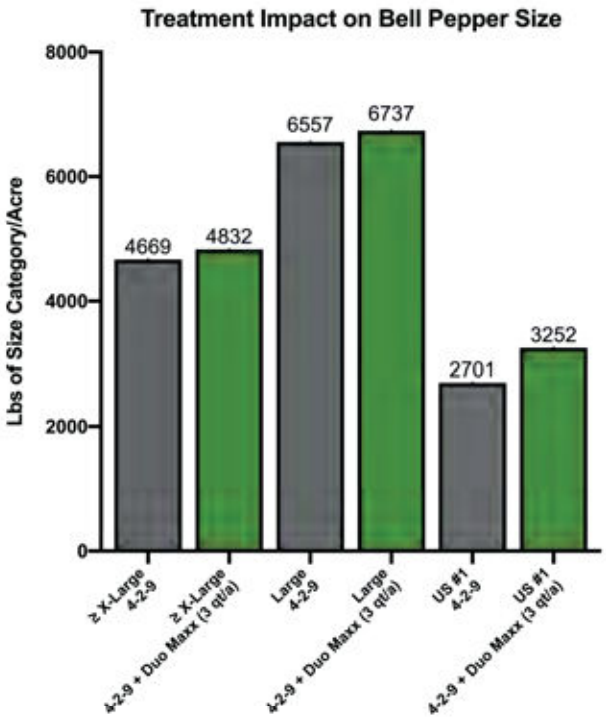
Increased Lbs of Marketable Bell Peppers by

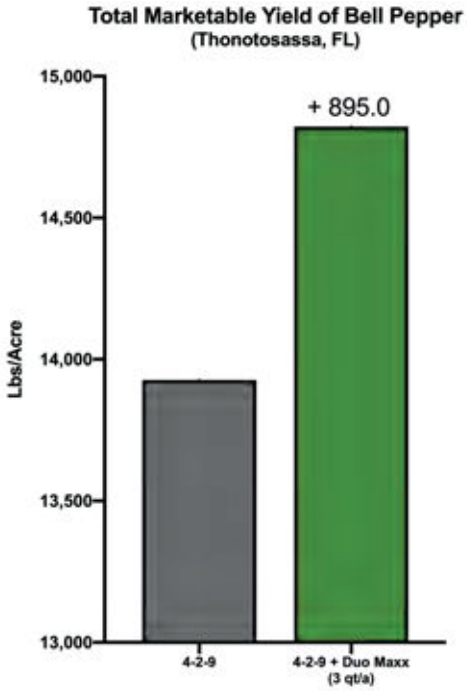
895.0 lbs/A

Duo Maxx treatment of injected fertilizer generated an ROI of

$372.50/A

Cost of Duo Maxx to treat fertilizer = $75.00/A
Marketable Peppers priced at $14/carton for 28 lbs





Application

Treatment	Application Rate
Grower Standard Liquid Fertilizer	4-2-9 (84.37 gal/ac total throughout season)
Grower Standard Liquid Fertilizer + Duo Maxx	4-2-9 (84.37 gal/ac total throughout season) + 3 Qt/A

Duo Maxx with In-furrow Starter

Sugar Beet

Objective

To compare the yield response in sugarbeet for in-furrow starter fertilizer, 10-34-0 at 3 gallons per acre with and without 8 oz/ac of Duo Maxx fertilizer additive.

Site Location

Grant County, MN

Researcher

Third Party

Contract Research Organization (CRO)

Study Information

Variety	BTS 7845
Planting	May 11, 2020

Application

Treatment	Application Rate
10-34-0	3 Gal/Ac @ Planting
10-34-0 w/ Duo Maxx	3 Gal/Ac @ Planting + 8 oz/A

Key Findings

+2.16 TPA

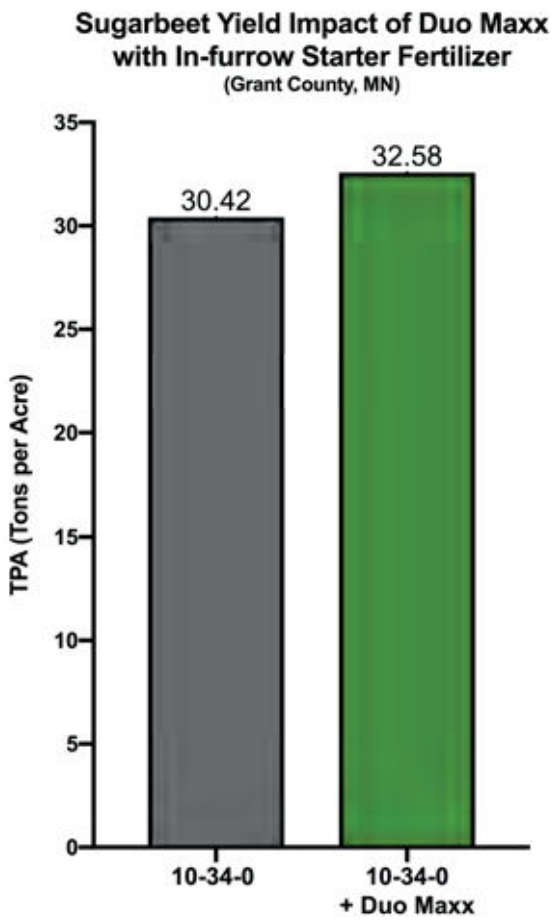
Increase in ton per acre yield when starter liquid treated with Duo Maxx

Gains in RSA, RST & % Purity

+9.4% in RSA (Recoverable Sugar per Acre)
+2.1% in RST (Recoverable Sugar per Ton)
+1.9% in Purity

ROI: $58.55/ac

Return when liquid fertilizer in-furrow starter treated with Duo Maxx



Graph: Liquid starter Fertilizer treated with Duo Maxx increased yield 2.16 TPA over untreated fertilizer of same rate. Revenue was calculated at $30/TPA for sugar. Duo Maxx was calculated at retail cost of $100/gallon.

Additional Yield Data Table

	Stand Ct. 50' @ 6/2	% Tare	% Sugar	% Purity	TPA	RST	RSA
10-34-0	76.8	1.9	15.75	88.68	**30.42**	261.61	7,932.74
	Stand Ct. 50' @ 6/2	% Tare	% Sugar	% Purity	TPA	RST	RSA
10-34-0 + Duo Maxx	87.3	2.06	15.66	90.39	**32.58**	267.27	8,681.40

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