The Andersons®

2020 RESEARCH TRIALS

The Andersons works to ensure our products provide excellent and consistent performance on the farm as well as deliver a positive return on investment to growers. To ensure this, we perform numerous field trials each year to evaluate differing factors including effectiveness, rates, timing, and more.

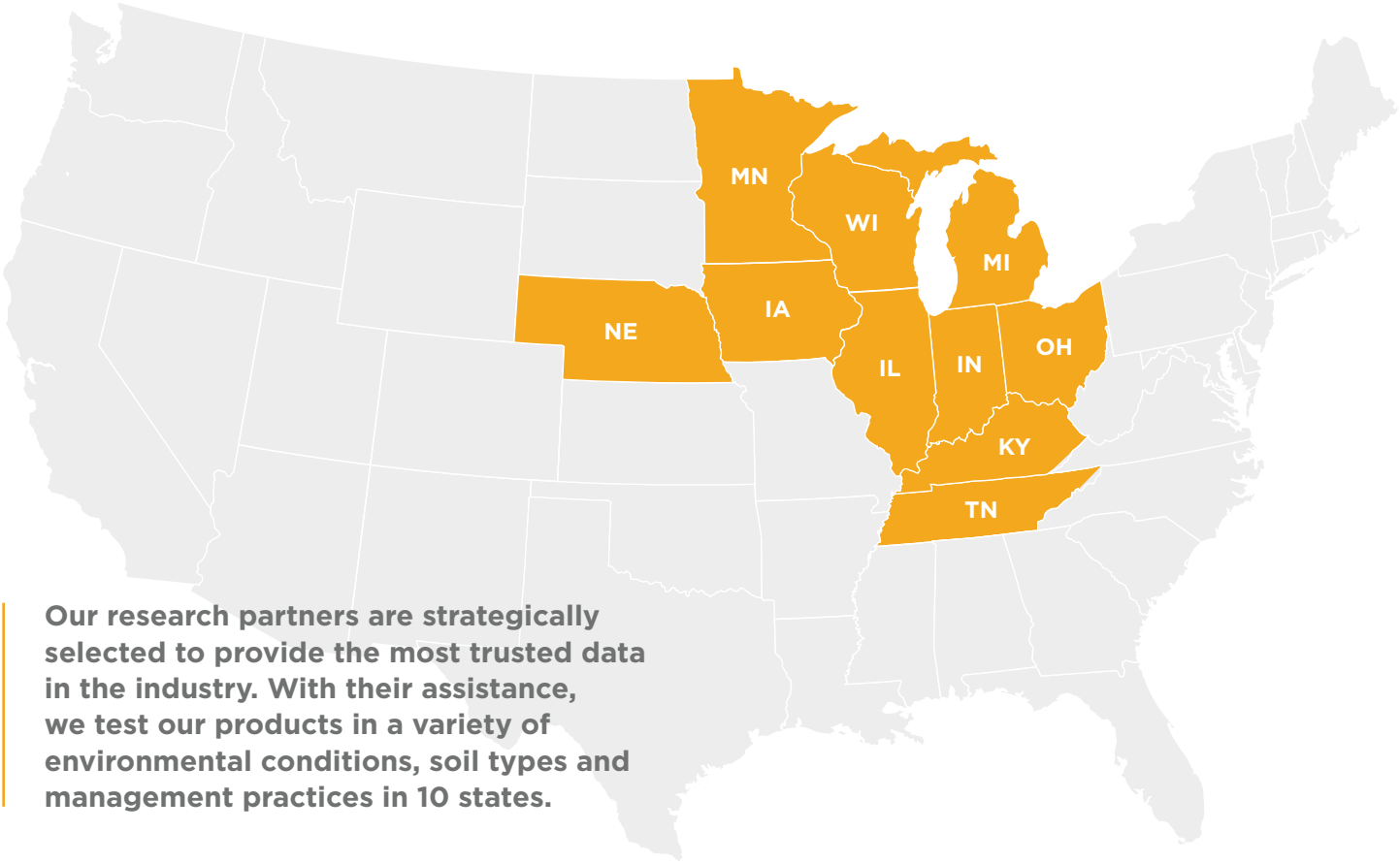
Our research trials are conducted in various geographies across the midwestern United States. Locations are selected to learn how product performance is impacted in diverse geographies, soil types and growing conditions. Our goal is to replicate precisely how products will perform on the farm, so we replicate standard growing practices for the area.

We manage research trials through multiple channels. First, third-party research sites are carefully selected, trusted to provide unbiased and reliable results. Second, on-farm trials are conducted through our Retail Farm Center locations as well as independent dealers and distributors. Third, several of our products are submitted to Beck's each year to participate in their Practical Farm Research (PFR)® trials. From the trials, our products can earn the PFR Proven™ endorsement.

This guide provides the highlights of our 2020 research trials. We hope this tool helps inform decisions on your farm for the upcoming growing season.

- The Andersons Agronomy Team

RESEARCH PARTNERS



Our research partners are strategically selected to provide the most trusted data in the industry. With their assistance, we test our products in a variety of environmental conditions, soil types and management practices in 10 states.

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OUR PRODUCTS

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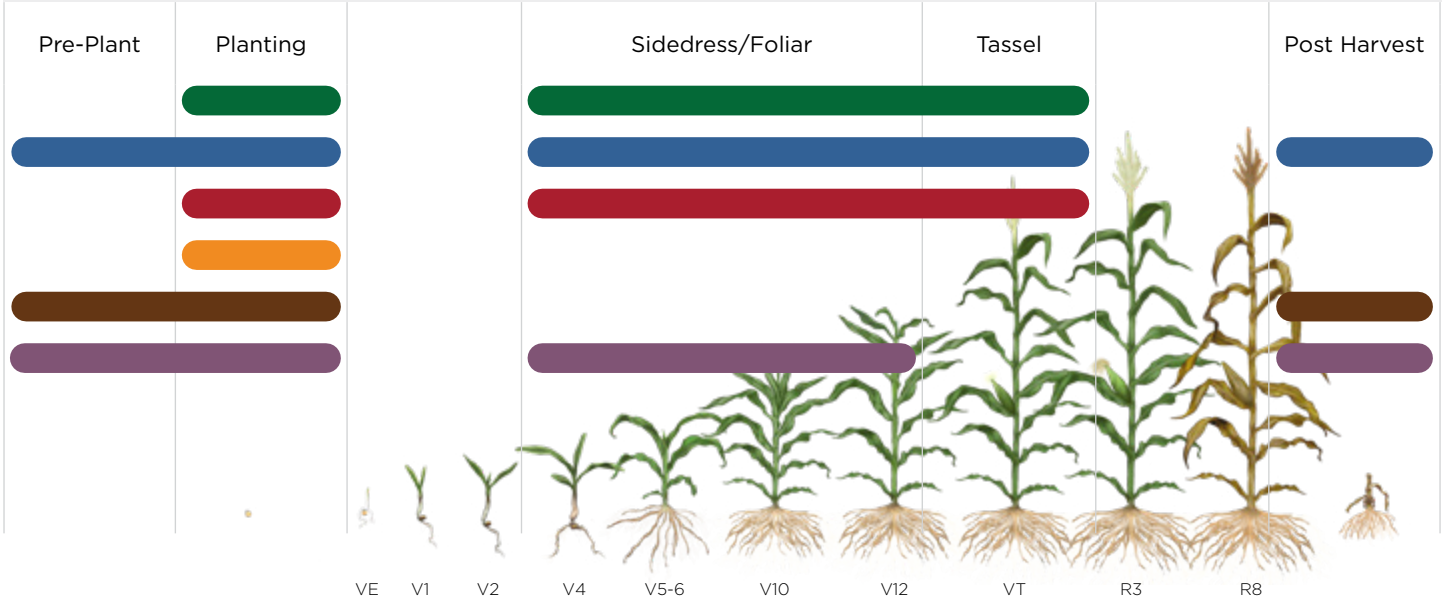
CORN



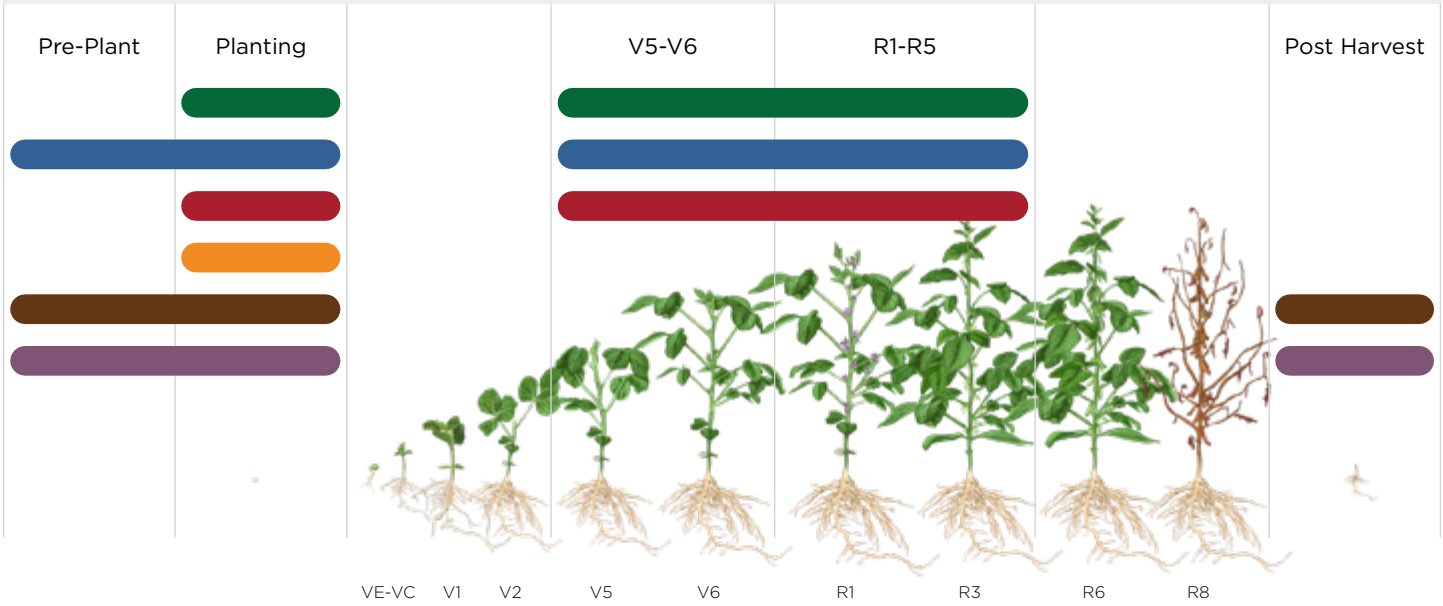
OUR PRODUCTS

Our agronomy team identifies what crops require throughout the growing season and select products to meet nutritional needs and maximize benefit. We use this information to provide recommendations backed by research.

Visit **AndersonsPlantNutrient.com/Agriculture** for additional information on the products highlighted in this guide.

HIGH YIELD PROGRAMS NOW AVAILABLE. Plan a season-long approach with our High Yield Programs for many row and specialty crops. Download today at **AndersonsPlantNutrient.com/HighYield**.

SOYBEANS



PFR PROVEN™

BECK'S

DIAMOND 6-24-6

MICROCARB®

MICROBLITZ®

FIRSTPASS®

PHOSFIX™

THE ANDERSONS PFR PROVEN PRODUCTS					
	PUREGRADE® DIAMOND 6-24-6	**MICROCARB®**	**FIRST PASS® WITH MICROCARB®**	**MICROBLITZ®**	**PHOSFIX®**
Crop	Corn	Corn	Soybeans	Soybeans	Corn
Average Return on Investment*	$12.78	$11.44	$9.19	$16.70	$5.45
Average Yield Increase	8.2 bu/ac	4.0 bu/ac	2.7 bu/ac	1.9 bu/ac	2.8 bu/ac
Application	5 gal in-furrow	1 qt in-furrow	2 gal in-furrow	1 qt at R1	1 pt at V4

PFR PROVEN™

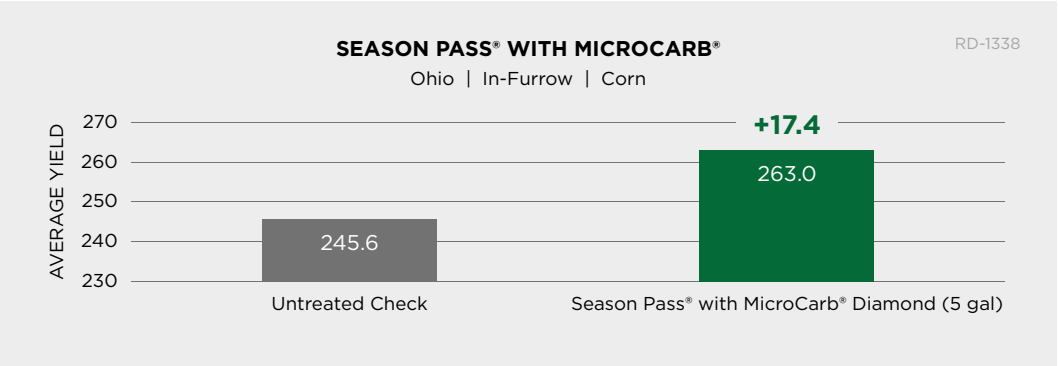
BECK'S

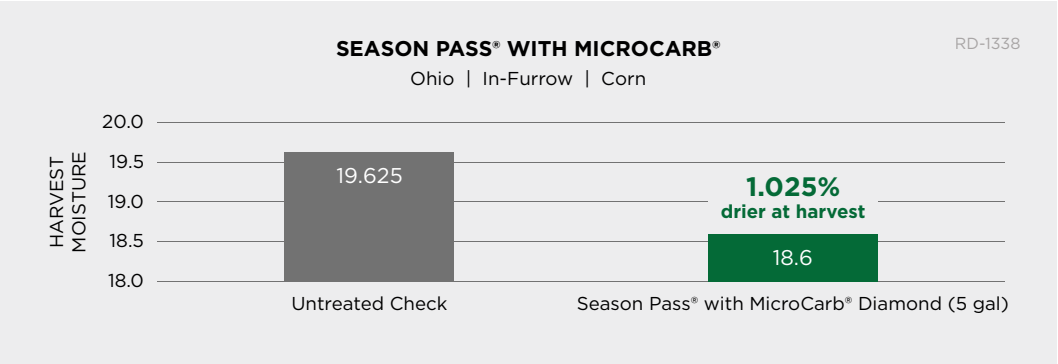
"For a product or practice to become PFR Proven, it needs to have been tested for a minimum of three years at multiple locations, it must provide a positive yield gain each year, and it must average a positive return on investment over the three-year period."

- Beck's PFR Book 2020, page 11

Average Return on Investment was calculated using the methods highlighted in the Beck's 2020 PFR Book (page 9). Corn: $3.72/bu. Soybeans: $9.13/bu. Return on Investment = Bu/A difference x commodity price/bu – treatment cost.

Season Pass®
WITH MICROCARB®





PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT
Season Pass® with MicroCarb® Diamond (5 gal)

TREATMENT TIMING
At planting, in-furrow

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

HERBICIDES
Weedmaster® (32 oz)
Metribuzin (6 oz)
Acuron® (3 qt)
Atrazine (1 qt)

BASE FERTILITY PROGRAM
MAP (150 lbs) & potash (100 lbs) applied in fall

28% UAN (42 gal) applied on June 12

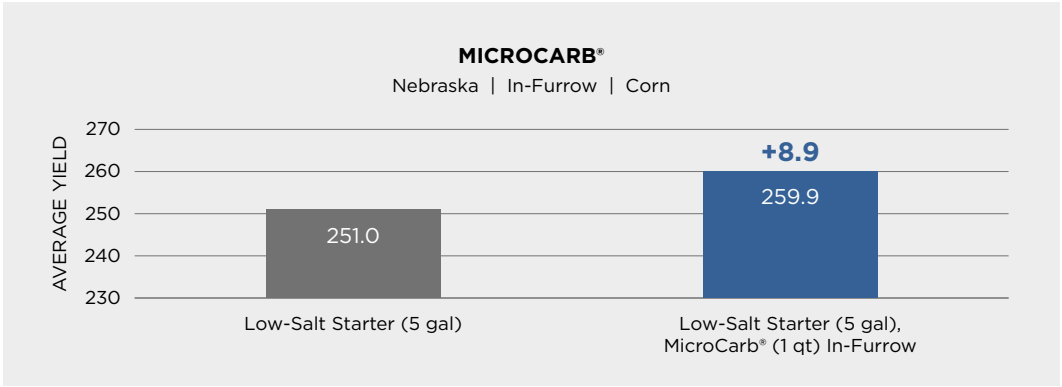
PREVIOUS CROP
Soybeans

TILLAGE TYPE
Conventional

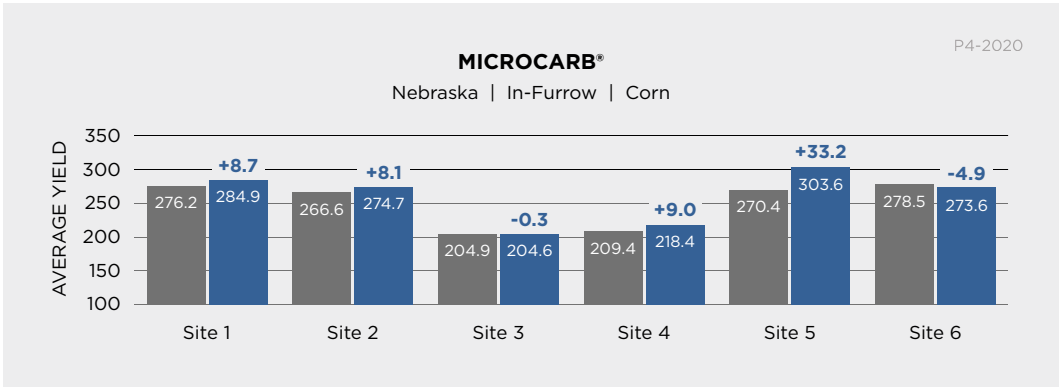
SOIL TEST INFORMATION

pH	6.1
CEC	15.8
% OM	3.4
P ppm	35
K ppm	157
Mg ppm	450
Ca ppm	1600

MICROCARB®

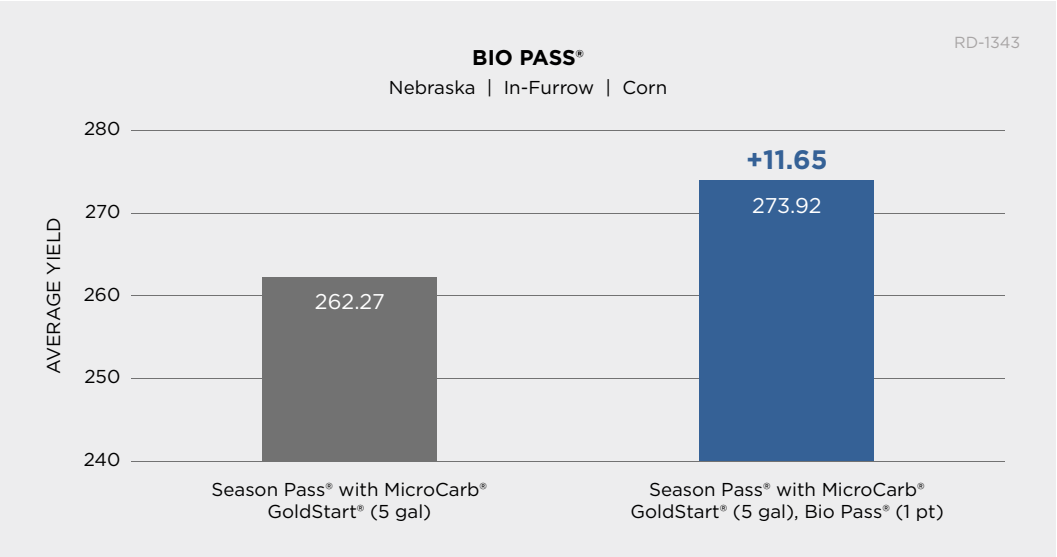


MicroCarb delivers boron, manganese and zinc to the crop, as well as 4% fulvic acid. The application of MicroCarb enhances the utilization of nutrients when applied with a starter. In this trial, MicroCarb was applied in-furrow and increased yield by 8.9 bu/A average across 6 sites.



BIO PASS®

Adding Bio Pass to an application of Season Pass with MicroCarb GoldStart helped jumpstart early season growth, resulting in a higher yield at harvest. The specialized blend of bacteria in Bio Pass worked with the starter to improve nutrient delivery into the plant and helped build a healthy biome around the root zone.



PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT
Season Pass® with MicroCarb® GoldStart® (5 gal)
Bio Pass® (1 pt)

TREATMENT TIMING
At planting, in-furrow

PLANTING DATE
May 6, 2020

HYBRID
DKC60-69RIB

PLANT POPULATION
34,000

ROW SPACING
30 inches

BASE FERTILITY PROGRAM
200 lbs of nitrogen applied pre-plant

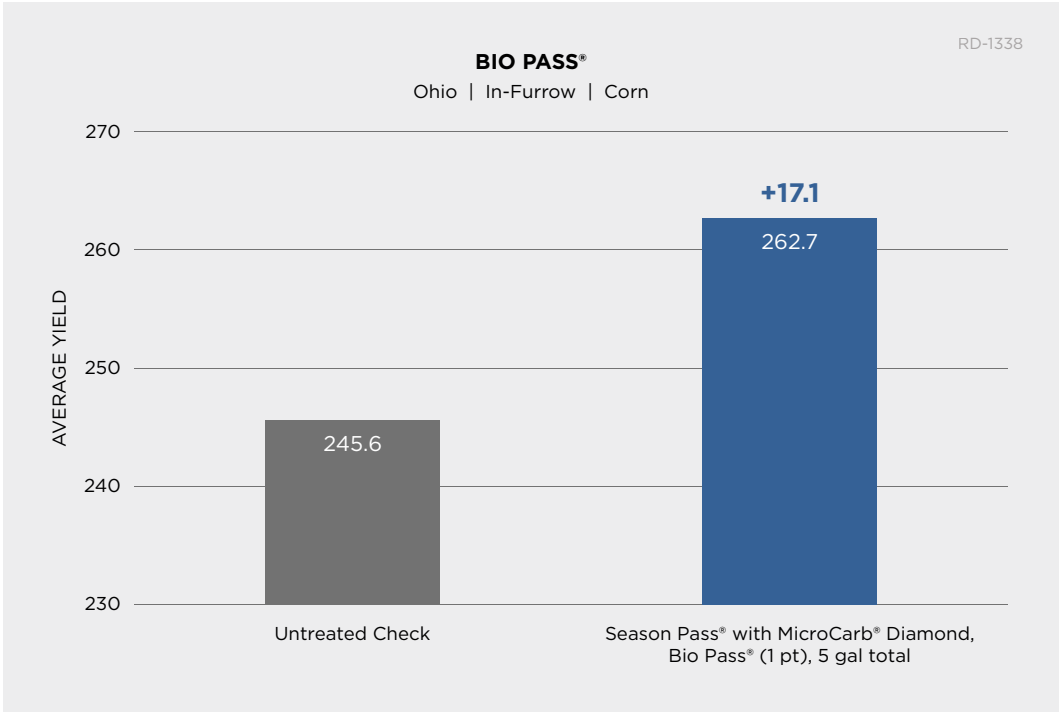
PREVIOUS CROP
Soybeans

TILLAGE TYPE
Minimum-till

IRRIGATION
Pivot

CORN IN-FURROW STARTER AND ADDITIVES

BIO PASS®



PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT
Season Pass® with MicroCarb® Diamond (5 gal)
Bio Pass® (1 pt)

TREATMENT TIMING
At planting, in-furrow

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

HERBICIDES
Weedmaster® (32 oz)
Metribuzin (6 oz)
Acuron® (3 qt)
Atrazine (1 qt)

BASE FERTILITY PROGRAM
MAP (150 lbs) & potash (100 lbs) applied in fall
28% UAN (42 gal) applied on June 12

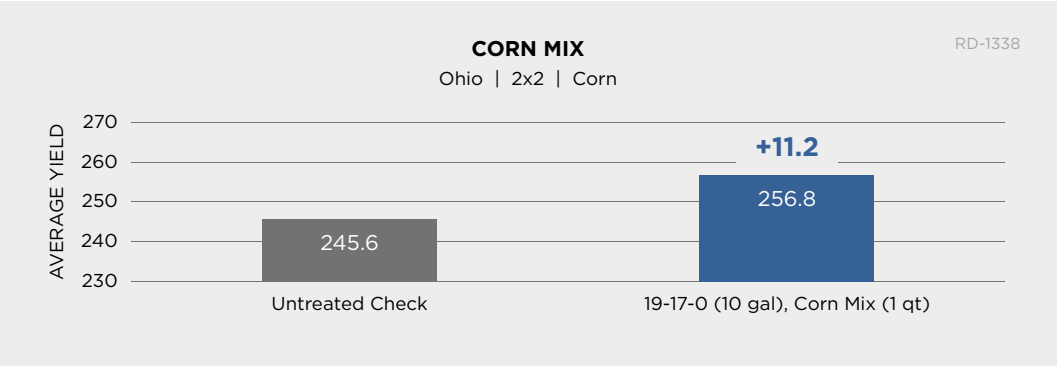
PREVIOUS CROP
Soybeans

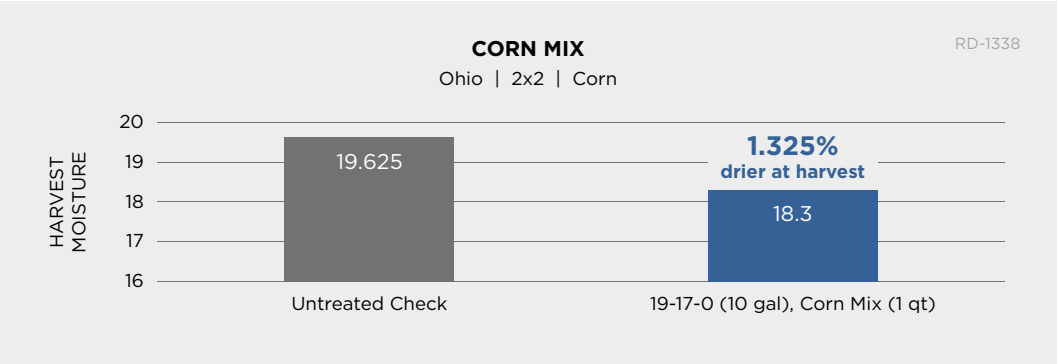
TILLAGE TYPE
Conventional

SOIL TEST INFORMATION

pH	6.1
CEC	15.8
% OM	3.4
P ppm	35
K ppm	157
Mg ppm	450
Ca ppm	1600

CORN MIX





PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT
19-17-0 (10 gal)
Corn Mix (1 qt)

TREATMENT TIMING
At planting, in-furrow

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

HERBICIDES
Weedmaster® (32 oz)
Metribuzin (6 oz)
Acuron® (3 qt)
Atrazine (1 qt)

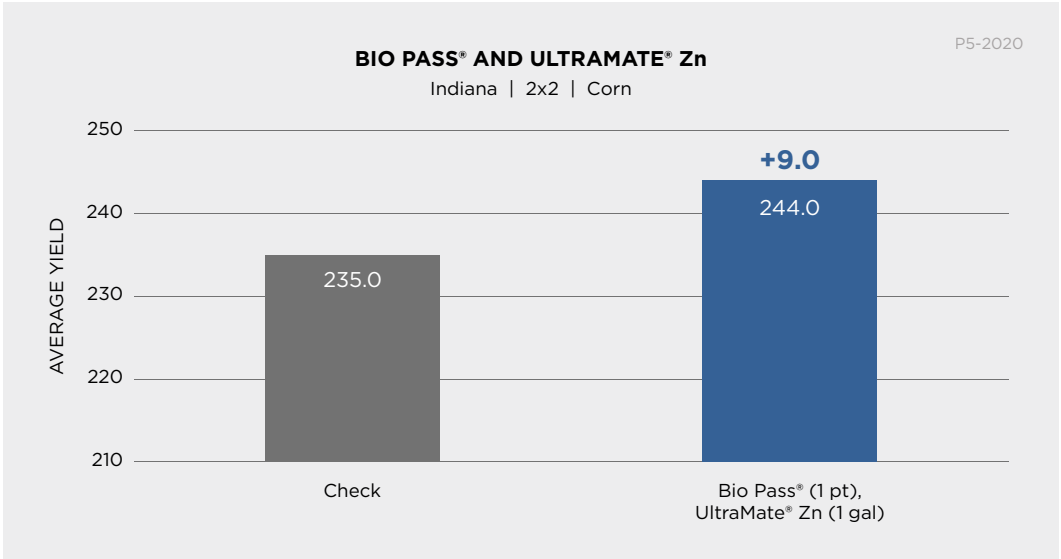
BASE FERTILITY PROGRAM
MAP (150 lbs) & potash (100 lbs) applied in fall
28% UAN (42 gal) applied on June 12

SOIL TEST INFORMATION

pH	6.1
CEC	15.8
% OM	3.4
P ppm	35
K ppm	157
Mg ppm	450
Ca ppm	1600

BIO PASS® | UltraMate® Zn

In this trial, Bio Pass and UltraMate Zn worked in combination to deliver a 9 bu/A yield advantage at harvest. These products helped develop a larger root system, assisting the crop to pull essential nutrients from the soil. This root system supported the crop through harvest by defending against drought and heat stress.



Untreated | Treated

Untreated

Treated

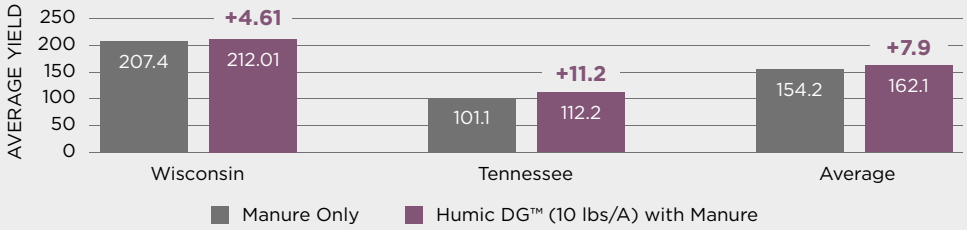
CORN ORGANIC IN-FURROW STARTER

Humic DG™

RD-1346
RD-1349

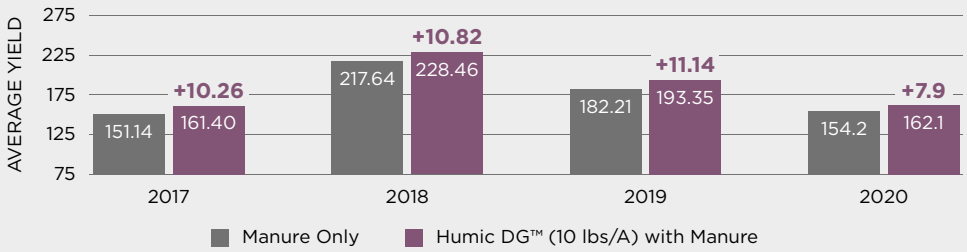
HUMIC DG™

In-Furrow | Organic Corn



RD-1329 RD-1346
RD-1314 RD-1349
RD-1287

HUMIC DG™ | MULTI-YEAR DATA



PLOT INFORMATION

LOCATION
Whitewater, Wisconsin

DESCRIPTION OF TREATMENT
Humic DG™ (10 lbs)

TREATMENT TIMING
At planting, in-furrow

PLANTING DATE
May 7, 2020

HYBRID
Non-GMO Organic Corn 108RM

PLANT POPULATION
35,000

ROW SPACING
30 inches

SOIL TEST INFORMATION

pH	6.8
CEC	20.3
% OM	3.4

PLOT INFORMATION

LOCATION
Memphis, Tennessee

DESCRIPTION OF TREATMENT
Humic DG™ (10 lbs)

TREATMENT TIMING
At planting, in-furrow

PLANTING DATE
May 20, 2020

HYBRID
Blue River 62G22

PLANT POPULATION
34,000

ROW SPACING
30 inches

SOIL TEST INFORMATION

pH	7.3
CEC	6.8
% OM	1.3

CORN PRE-PLANT HERBICIDE STUDY

UltraMate® LQ | BIO REVERSE™

RD-1340

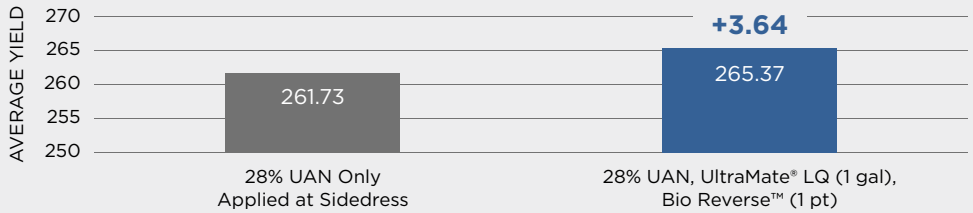
ULTRAMATE® LQ AND BIO REVERSE™

Ohio | Pre-Plant with Herbicide | Corn

RD-1345

ULTRAMATE® LQ AND BIO REVERSE™

Nebraska | Pre-Plant with Herbicide | Corn



PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT
28% UAN (75 lbs)
Bio Reverse™ (1 pt)
UltraMate® LQ (1 gal)

TREATMENT TIMING
Pre-plant with herbicide

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

HERBICIDES
Weedmaster® (32 oz)
Metribuzin (6 oz)
Acuron® (3 qt)
Atrazine (1 qt)

PREVIOUS CROP
Soybeans

TILLAGE TYPE
Conventional

PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT
28% UAN (75 lbs)
Bio Reverse™ (1 pt)
UltraMate® LQ (1 gal)

TREATMENT TIMING
Pre-plant with herbicide

PLANTING DATE
May 6, 2020

HYBRID
DEKALB® DKC60-69RIB

PLANT POPULATION
34,000

ROW SPACING
30 inches

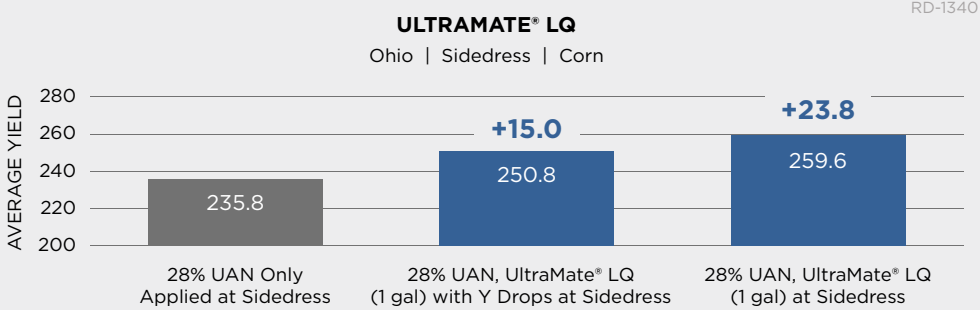
PREVIOUS CROP
Corn

TILLAGE TYPE
Minimum till

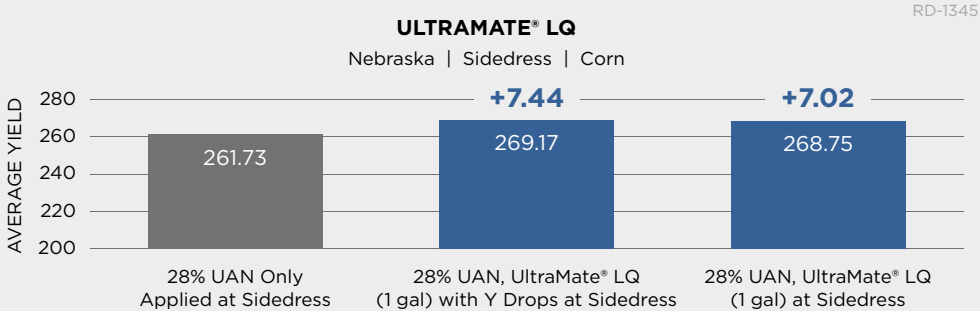
IRRIGATION
Pivot

UltraMate® LQ

RD-1340



RD-1345



PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT
UltraMate® LQ (1 gal)
28% UAN (69 lbs)

TREATMENT TIMING
Sidedress at V5

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

PREVIOUS CROP
Corn

TILLAGE TYPE
Conventional

IRRIGATION
No

PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT
UltraMate® LQ (1 gal)
28% UAN (69 lbs)

TREATMENT TIMING
Sidedress at V5

PLANTING DATE
May 6, 2020

HYBRID
DEKALB® DKC60-69RIB

PLANT POPULATION
34,000

ROW SPACING
30 inches

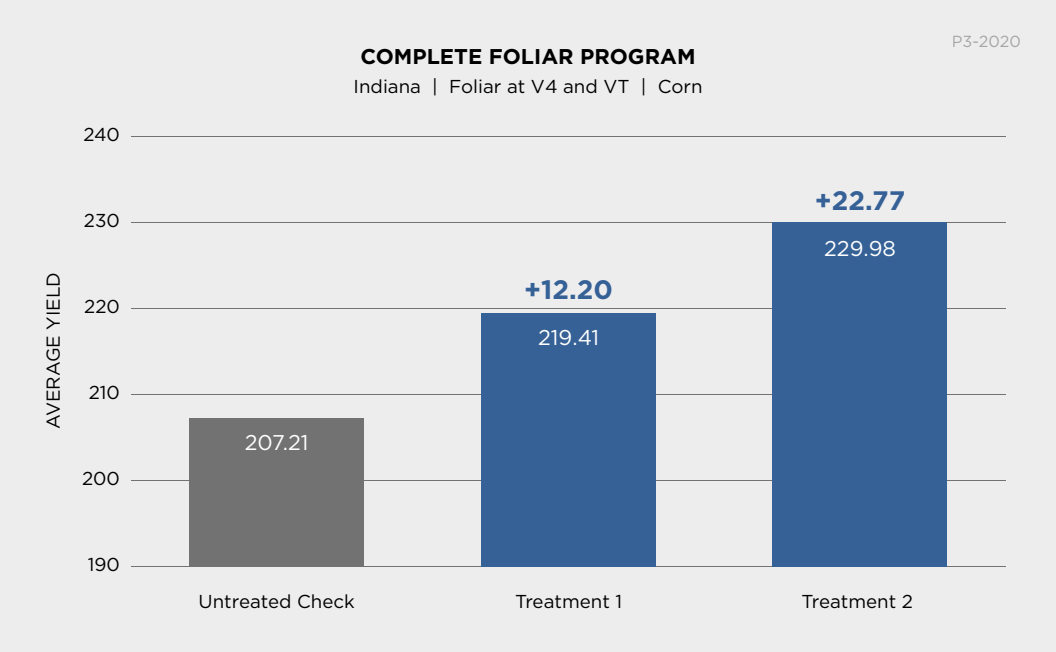
PREVIOUS CROP
Corn

TILLAGE TYPE
Minimum till

IRRIGATION
Pivot

COMPLETE FOLIAR PROGRAM

When a combination of products were used in a complete foliar program with applications at the V5 and VT growth stages, stress was kept at a minimum and the nutrient needs of the crop were met. The addition of a fungicide kept disease under control, allowing the crop to thrive and produce maximum yield at harvest.



PLOT INFORMATION

LOCATION
Walton, Indiana

DESCRIPTION OF TREATMENT

TREATMENT 1

FOLIAR AT V5
Phosfix® (1 pt)
MicroNourish® (1 qt)

FOLIAR AT VT
Over Pass® 22-0-2 (1 gal)
Trivapro® (13.7 oz)
Lambda-T 2 (1.6 oz)

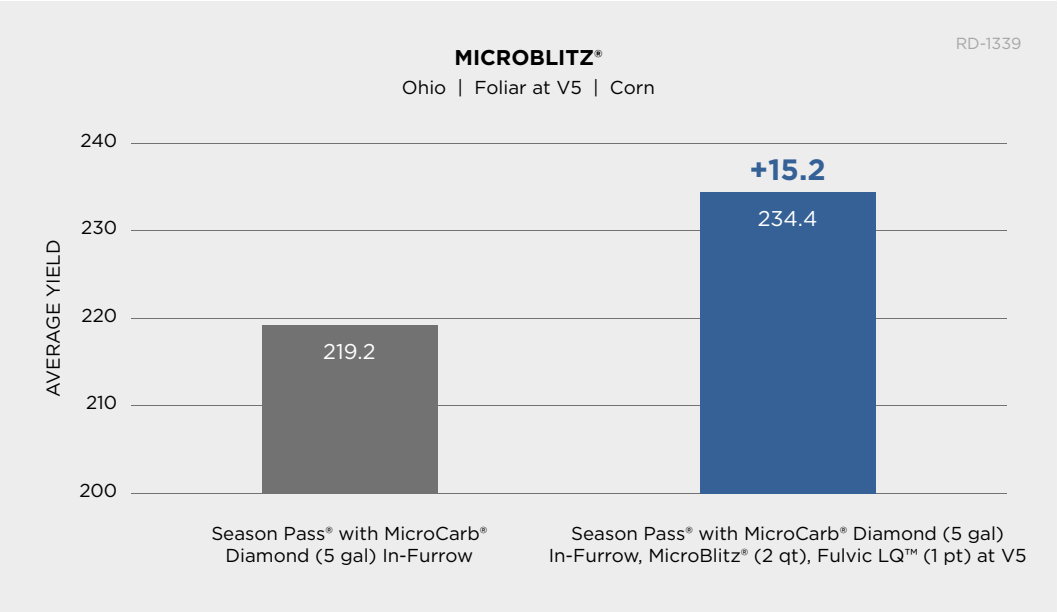
TREATMENT 2

FOLIAR AT V5
Phosfix® (1 pt)
MicroNourish® (1 qt)
Fulvic LQ™ (1 pt)
Sweet 'N Eezy® (1 pt)

FOLIAR AT VT
Over Pass® 22-0-2 (1 gal)
Sweet 'N Eezy® (1 pt)
Trivapro® (13.7 oz)
Lambda-T 2 (1.6 oz)

MICROBLITZ®

The V5 growth stage is when a corn crop determines the number of rows around the ear. Minimizing stress at this point in the season is necessary to maximize yield at harvest. By applying MicroBlitz at this growth stage, the crop is receiving essential nutrients, keeping plant stress at bay. The addition of Fulvic LQ increased nutrient absorption into the leaf.



PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT

IN-FURROW
Season Pass® with MicroCarb® Diamond (5 gal)

FOLIAR AT V5
MicroBlitz® (2 qt)
Fulvic LQ™ (1 pt)

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

HERBICIDES
Weedmaster® (32 oz)
Metribuzin (6 oz)
Acuron® (3 qt)
Atrazine (1 qt

BASE FERTILITY PROGRAM
MAP (150 lbs) & potash (100 lbs) applied in fall

PREVIOUS CROP
Soybeans

TILLAGE TYPE
Conventional

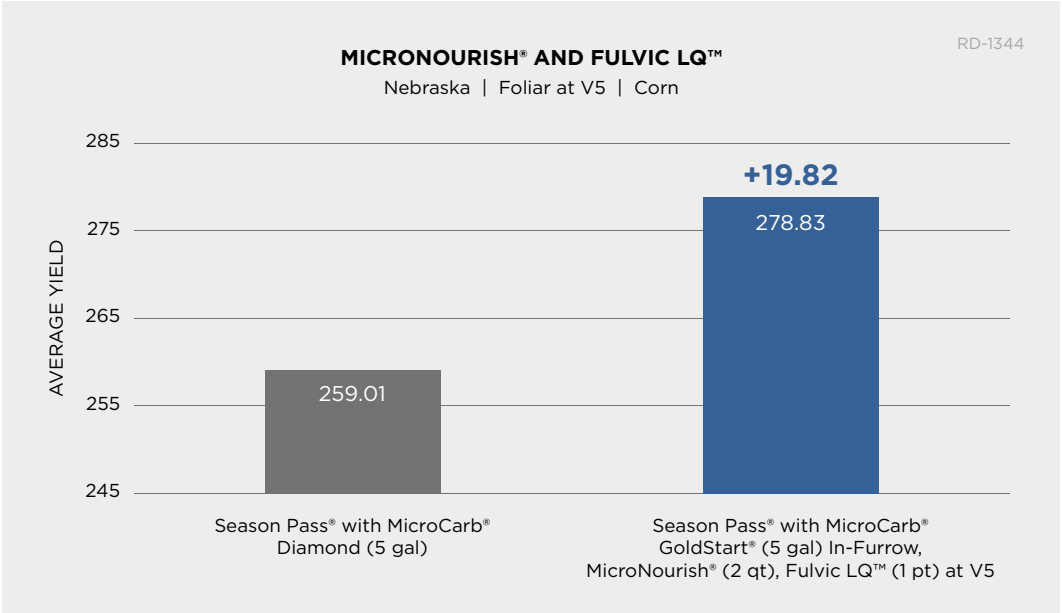
IRRIGATION
No

SOIL TEST INFORMATION

pH	6.1	**K ppm**	157
CEC	15.8	**Mg ppm**	450
% OM	3.4	**Ca ppm**	1600
P ppm	35		

MicroNourish® | Fulvic LQ™

In this trial, the addition of Fulvic LQ increased the availability and uptake of MicroNourish. This combination was applied at V5 with a goal of minimizing stress at this yield-determining growth stage. At harvest, this treatment resulted in a 19.82 bu/A yield advantage compared to low-salt starter alone.



PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT

IN-FURROW
Season Pass® with MicroCarb® GoldStart® (5 gal)

FOLIAR AT V5
MicroNourish® (2 qt)
Fulvic LQ™ (1 pt)

PLANTING DATE
May 6, 2020

HYBRID
DEKALB® DKC60-69RIB

PLANT POPULATION
34,000

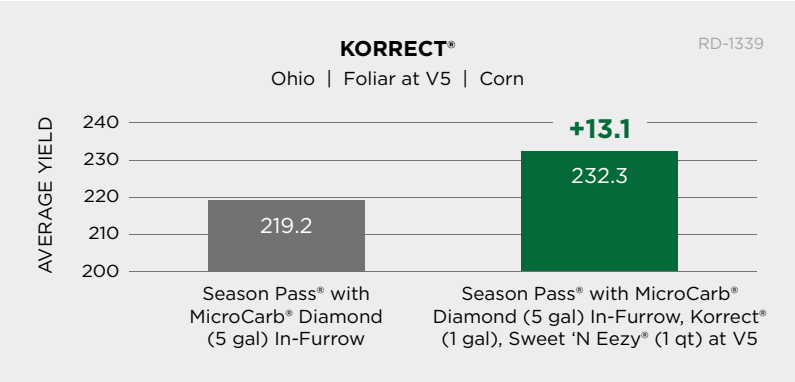
ROW SPACING
30 inches

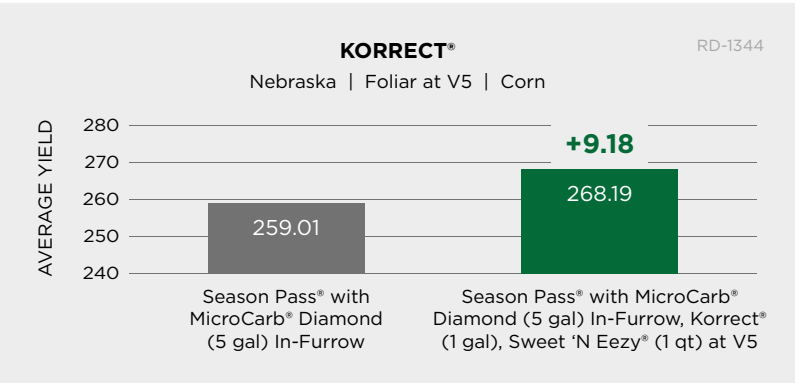
BASE FERTILITY PROGRAM
200 lbs of nitrogen applied pre-plant

PREVIOUS CROP
Soybeans

TILLAGE TYPE
Minimum-till

KORRECT®





PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT IN-FURROW
Season Pass® with MicroCarb® Diamond (5 gal)

FOLIAR AT V5
Korrect® (1 gal)
Sweet 'N Eezy® (1 qt)

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

BASE FERTILITY PROGRAM
MAP (150 lbs) & potash (100 lbs) applied in fall

PREVIOUS CROP
Soybeans

TILLAGE TYPE
Conventional

IRRIGATION
No

PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT IN-FURROW
Season Pass® with MicroCarb® Diamond (5 gal)

FOLIAR AT V5
Korrect® (1 gal)
Sweet 'N Eezy® (1 qt)

PLANTING DATE
May 2, 2020

HYBRID
DEKALB® DKC60-69RIB

PLANT POPULATION
34,000

ROW SPACING
30 inches

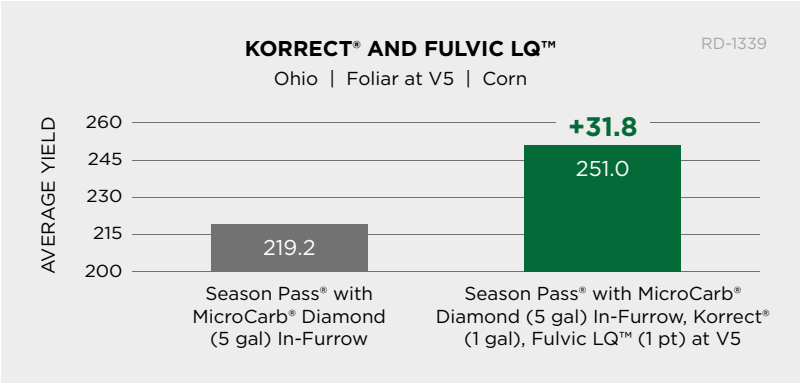
BASE FERTILITY PROGRAM
200 lbs of nitrogen applied pre-plant

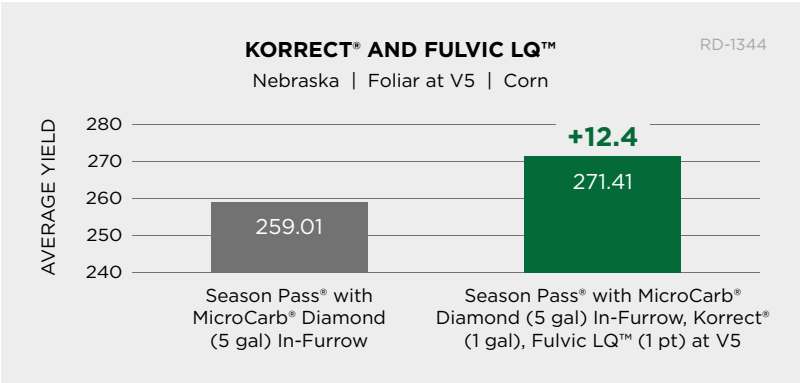
PREVIOUS CROP
Soybeans

TILLAGE TYPE
Minimum till

IRRIGATION
Pivot

KORRECT® | Fulvic LQ™





PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT IN-FURROW
Season Pass® with MicroCarb® Diamond (5 gal)

FOLIAR AT V5
Korrect® (1 gal)
Fulvic LQ™ (1 pt)

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

BASE FERTILITY PROGRAM
MAP (150 lbs) & potash (100 lbs) applied in fall

PREVIOUS CROP
Soybeans

TILLAGE TYPE
Conventional

IRRIGATION
No

PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT IN-FURROW
Season Pass® with MicroCarb® Diamond (5 gal)

FOLIAR AT V5
Korrect® (1 gal)
Fulvic LQ™ (1 pt)

PLANTING DATE
May 2, 2020

HYBRID
DEKALB® DKC60-69RIB

PLANT POPULATION
34,000

ROW SPACING
30 inches

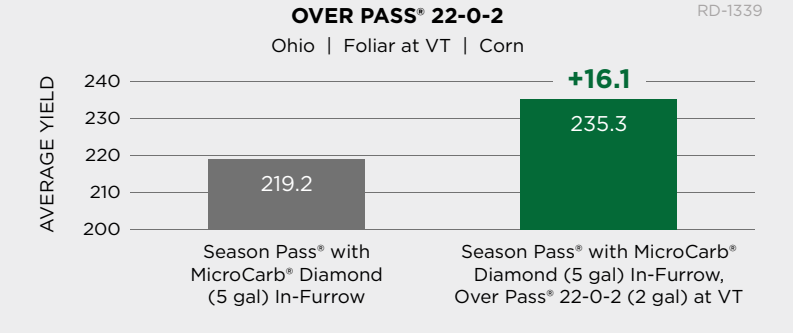
BASE FERTILITY PROGRAM
200 lbs of nitrogen applied pre-plant

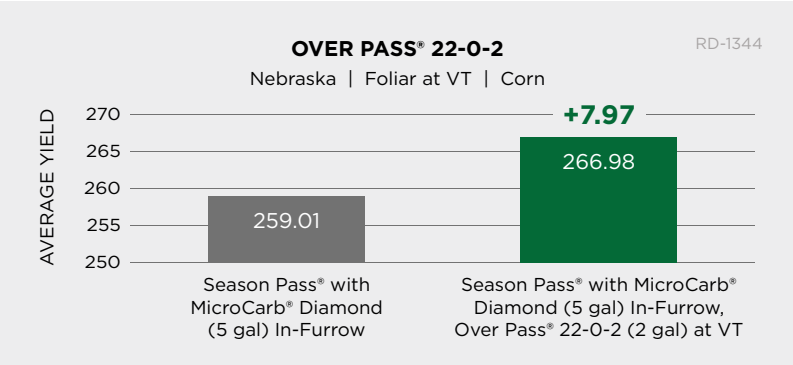
PREVIOUS CROP
Soybeans

TILLAGE TYPE
Minimum till

IRRIGATION
Pivot

OVER PASS® 22-0-2





PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT IN-FURROW
Season Pass® with MicroCarb® Diamond (5 gal)

FOLIAR AT VT
Over Pass® 22-0-2 (2 gal)

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

BASE FERTILITY PROGRAM
MAP (150 lbs) & potash (100 lbs) applied in fall

PREVIOUS CROP
Soybeans

TILLAGE TYPE
Conventional

IRRIGATION
No

PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT IN-FURROW
Season Pass® with MicroCarb® Diamond (5 gal)

FOLIAR AT VT
Over Pass® 22-0-2 (2 gal)

PLANTING DATE
May 2, 2020

HYBRID
DEKALB® DKC60-69RIB

PLANT POPULATION
34,000

ROW SPACING
30 inches

BASE FERTILITY PROGRAM
200 lbs of nitrogen applied pre-plant

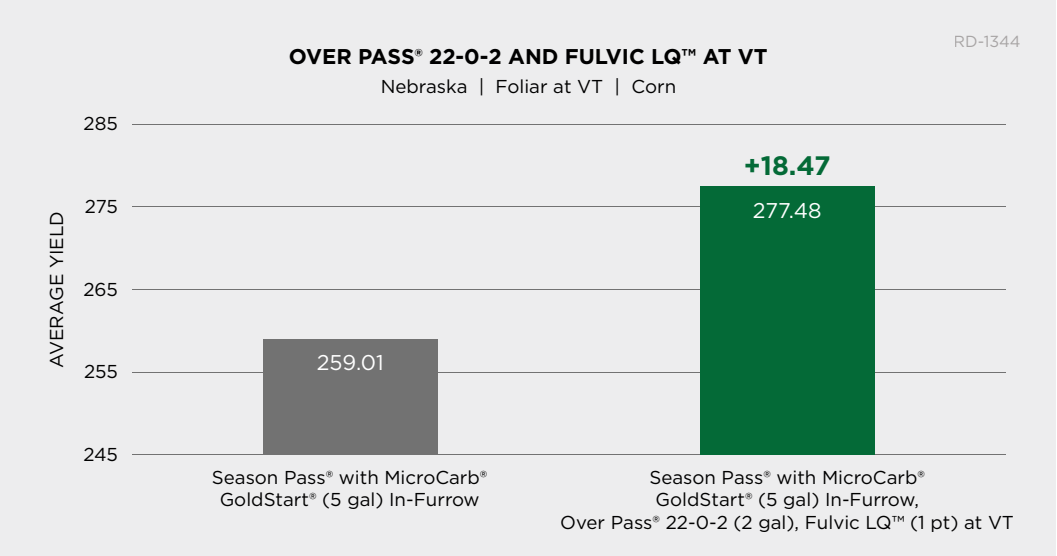
PREVIOUS CROP
Soybeans

TILLAGE TYPE
Minimum till

IRRIGATION
Pivot

OVER PASS® 22-0-2 | Fulvic LQ™

At the VT growth stage, when the crop is beginning pollination, minimizing stress is essential to ensure all viable kernels become pollinated and produce maximum yield. The application of Over Pass 22-0-2 and Fulvic LQ provided essential nutrients to the crop, allowing the crop to focus on filling out the ear. At harvest, this treatment yielded an 18.47 bu/A advantage.



PLOT INFORMATION

LOCATION
Aurora, Nebraska

DESCRIPTION OF TREATMENT

IN-FURROW
Season Pass® with MicroCarb® GoldStart® (5 gal)

FOLIAR AT V5
Over Pass® 22-0-2 (2 gal)
Fulvic LQ™ (1 pt)

PLANTING DATE
May 6, 2020

HYBRID
DEKALB® DKC60-69RIB

PLANT POPULATION
34,000

ROW SPACING
30 inches

BASE FERTILITY PROGRAM
200 lbs of nitrogen applied pre-plant

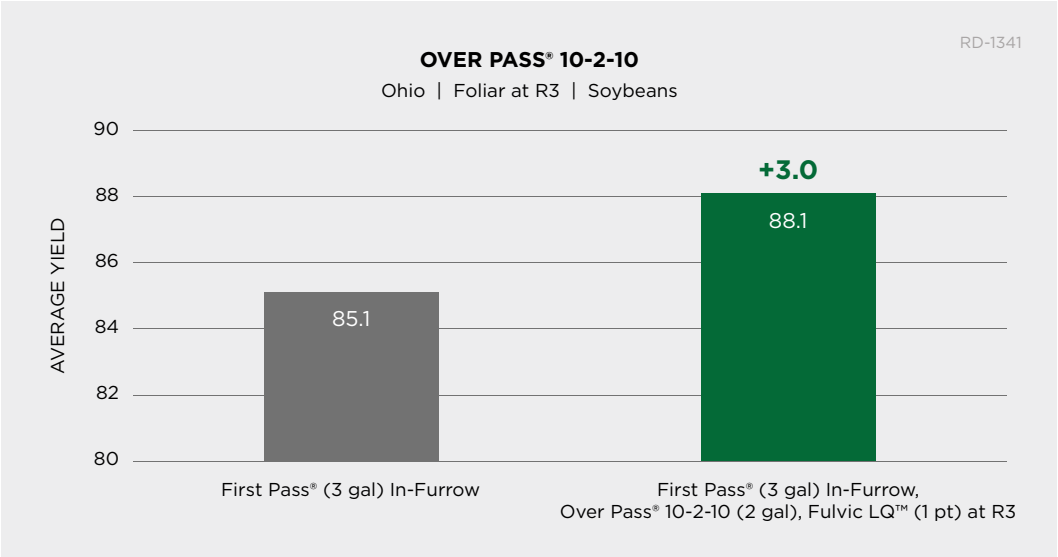
PREVIOUS CROP
Soybeans

TILLAGE TYPE
Minimum-till

SOYBEAN FOLIAR

OVER PASS® 10-2-10

The reproductive stages in a soybean crop are when yield is determined. Crop stress during the reproductive stages will have a negative impact on yield at harvest. By supplementing nutrients with the application of Over Pass 10-2-10, crop stress was managed, and a yield increase was observed.



PLOT INFORMATION

LOCATION
Troy, Ohio

DESCRIPTION OF TREATMENT

IN-FURROW
First Pass® (3 gal)

FOLIAR AT R3
Over Pass® 10-2-10 (2 gal)
Fulvic LQ™ (1 pt)

PLANTING DATE
May 13, 2020

HYBRID
P1197AMXT

PLANT POPULATION
32,000

ROW SPACING
30 inches

HERBICIDES
Weedmaster® (32 oz)
Metribuzin (6 oz)
Acuron® (3 qt)
Atrazine (1 qt)

BASE FERTILITY PROGRAM
MAP (150 lbs) & potash
(100 lbs) applied in fall

PREVIOUS CROP
Soybeans

TILLAGE TYPE
Conventional

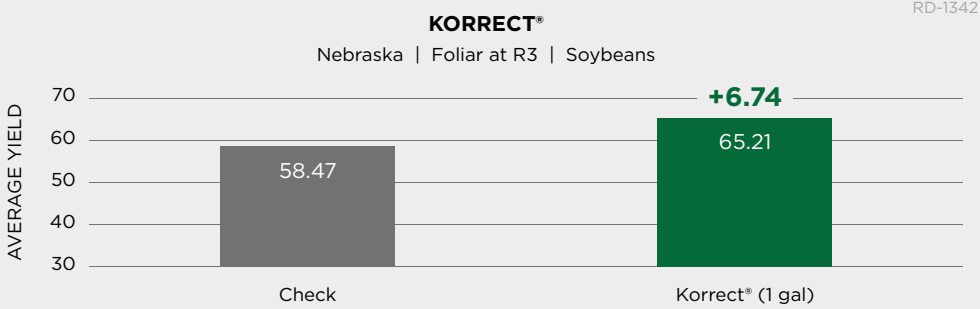
IRRIGATION
No

SOIL TEST INFORMATION

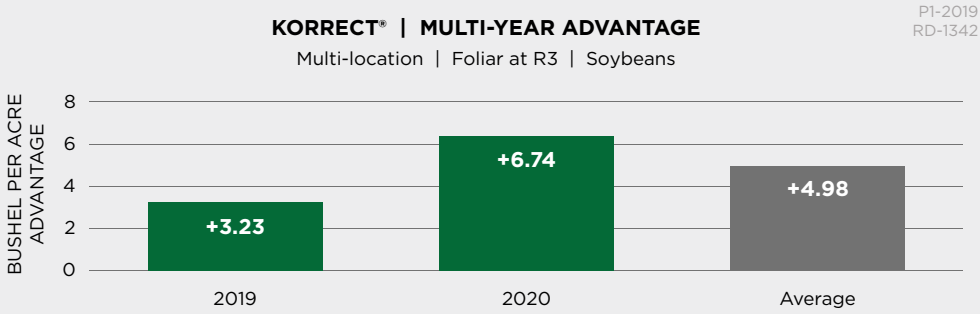
pH	6.1
CEC	15.8
% OM	3.4
P ppm	35
K ppm	157
Mg ppm	450
Ca ppm	1600

KORRECT®

RD-1342



P1-2019
RD-1342



PLOT INFORMATION

LOCATION
Blue Hill, Nebraska

DESCRIPTION OF TREATMENT
Korrect® (1 gal)

TREATMENT TIMING
Foliar at R3

PLANTING DATE
May 29, 2020

HYBRID
PV2419X

PLANT POPULATION
140,000

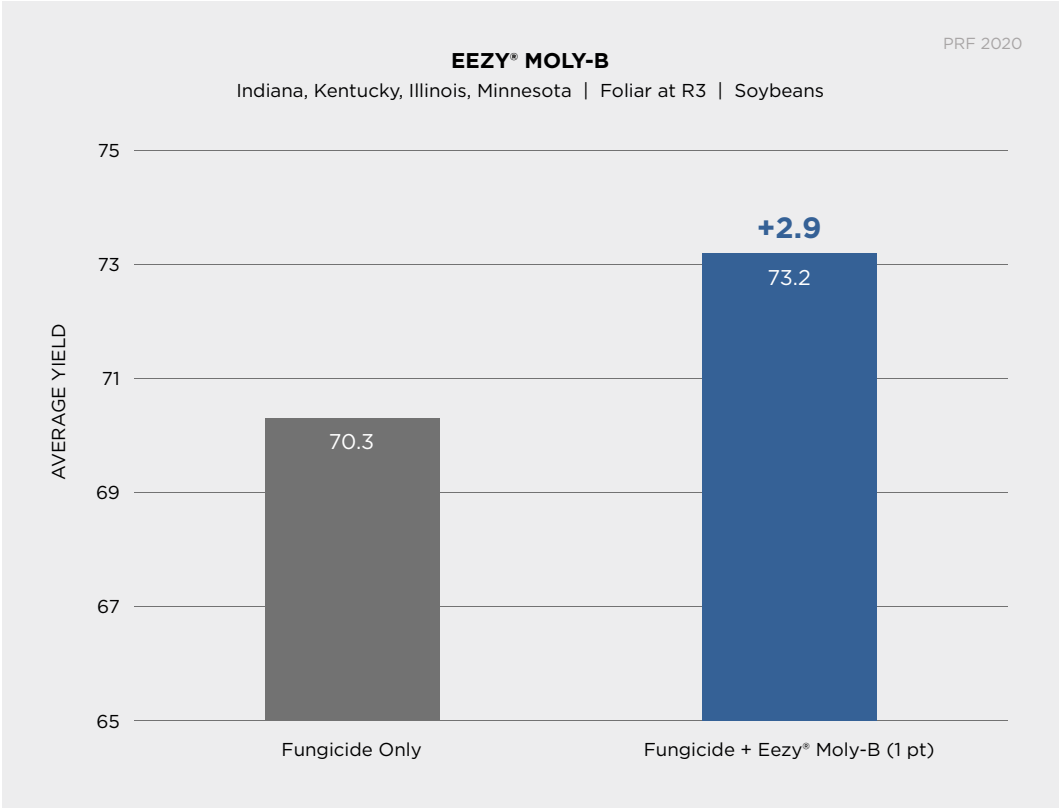
ROW SPACING
30 inches

PREVIOUS CROP
Corn

TILLAGE TYPE
Conventional

IRRIGATION
Yes

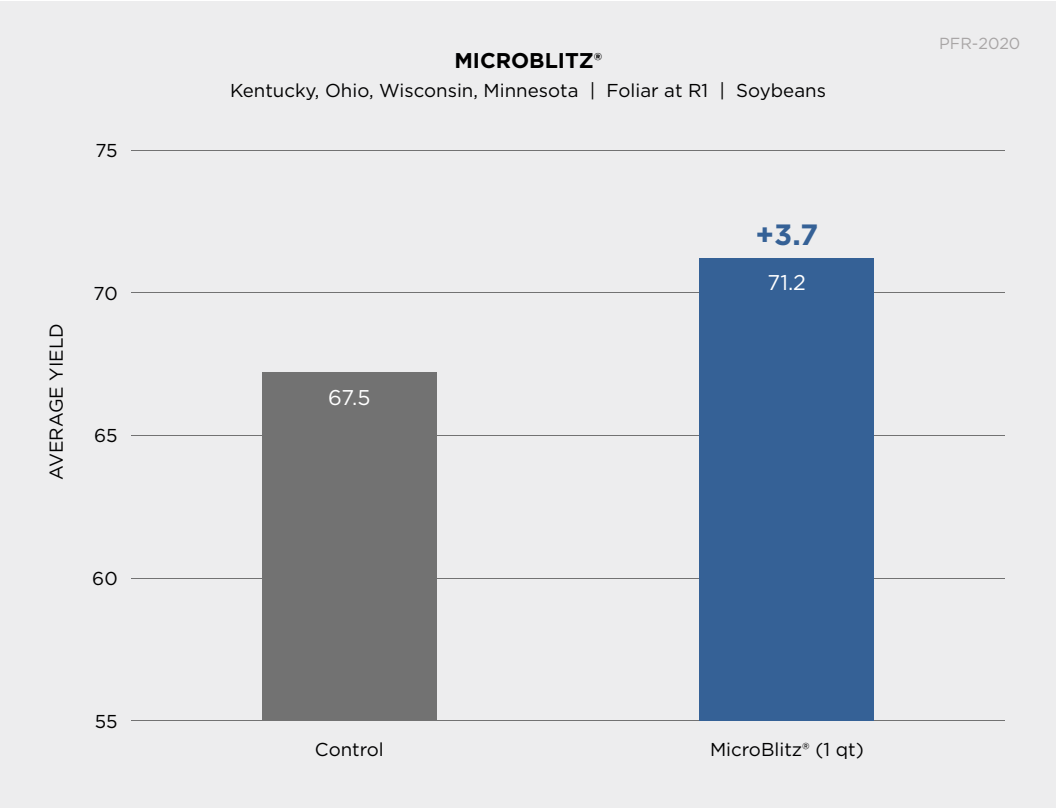
EEZY® MOLY-B



"As soybean yield levels increase, it is not surprising to see responses to supplemental fertility. Our two-year averages show a strong response to a few of the products that provide additional boron."

– Beck's PFR Book 2020, page 160

MICROBLITZ®



PFR PROVEN™

BECK'S

"When faced with a thin stand of soybeans, our first-year data indicates that it still pays to invest in the crop, whether that incudes a fungicide pass or foliar nutrition application."

– Beck's PFR Book 2020, page 150

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