

Talc USA Trial Results

Talc USA Soybean Trial Results



Talc 80/20 + MicroSURGE for Soybeans



**Talc 80/20
w/graphite**



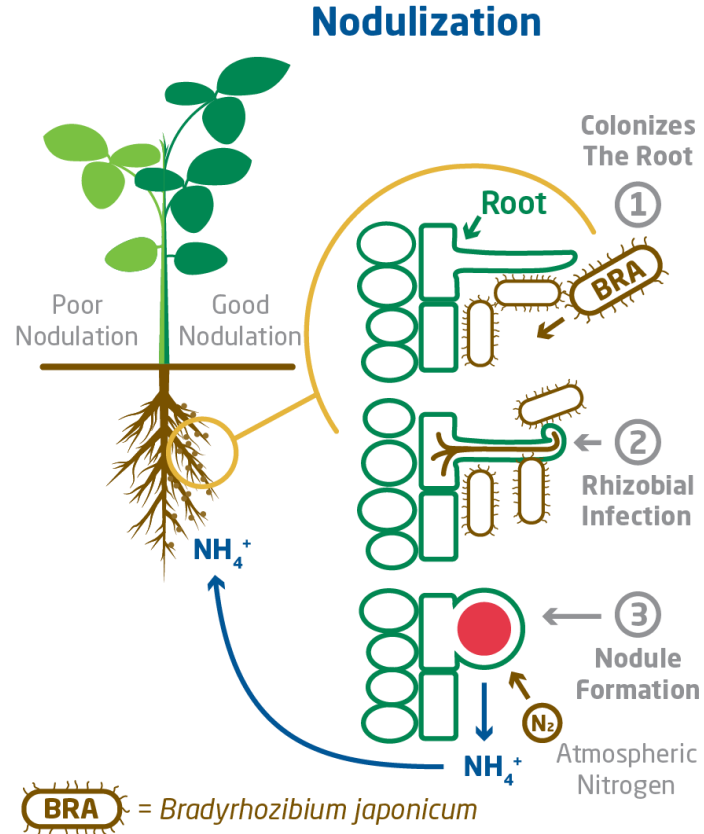
**MicroSURGE
Soybean Inoculant**
*Contains
Bradyrhizobium japonicum*

MicroSURGE for Soybeans

Inoculant: *Bradyrhizobium japonicum*

Symbiotic nitrogen-fixing soil bacterium

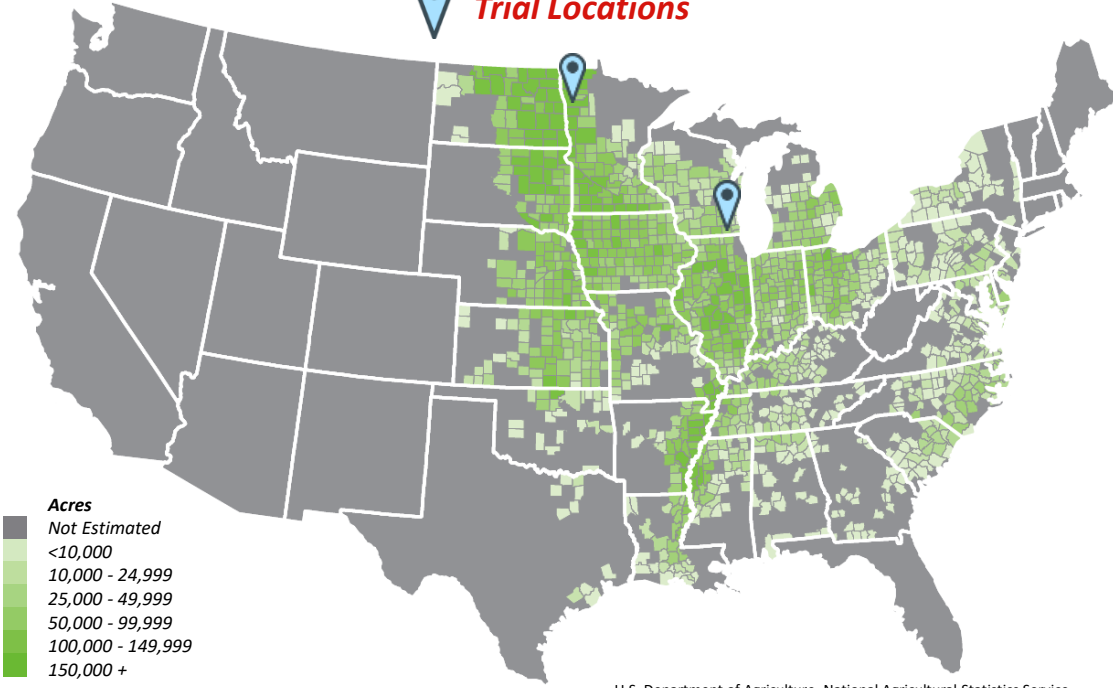
Legume crops are a host for the N_2 -fixing bacteria, *B. japonicum* and they can obtain up to 50% or more of their N needs through biological nitrogen fixation are present in the soil



Inceptive + MicroSURGE for Soybeans

2023 Soybean Trial Locations and Yield Results

 **Trial Locations**



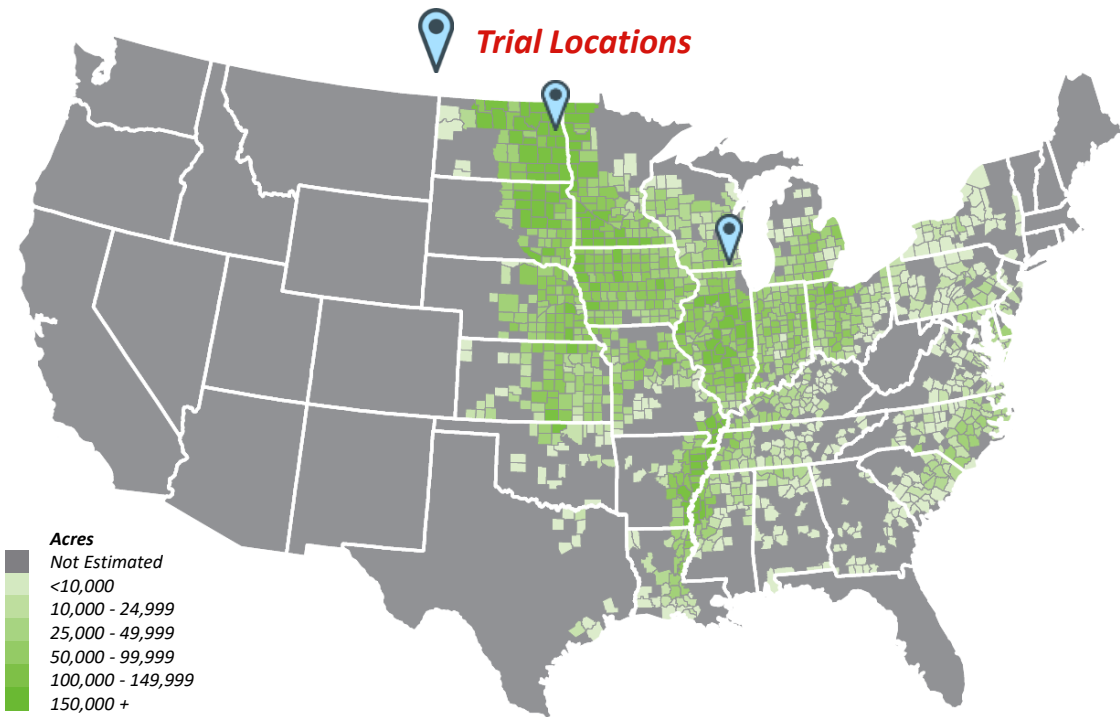
Acres
Not Estimated
<10,000
10,000 - 24,999
25,000 - 49,999
50,000 - 99,999
100,000 - 149,999
150,000 +

U.S. Department of Agriculture, National Agricultural Statistics Service

Location	Yield Increase
MN	-2.1 bu/ac
WI	1.75 bu/ac
Averaged Results	
Yield Increase	-0.2 bu/ac

Inceptive + MicroSURGE for Soybeans + Molybdenum

2023 Soybean Trial Locations and Yield Results



U.S. Department of Agriculture, National Agricultural Statistics Service

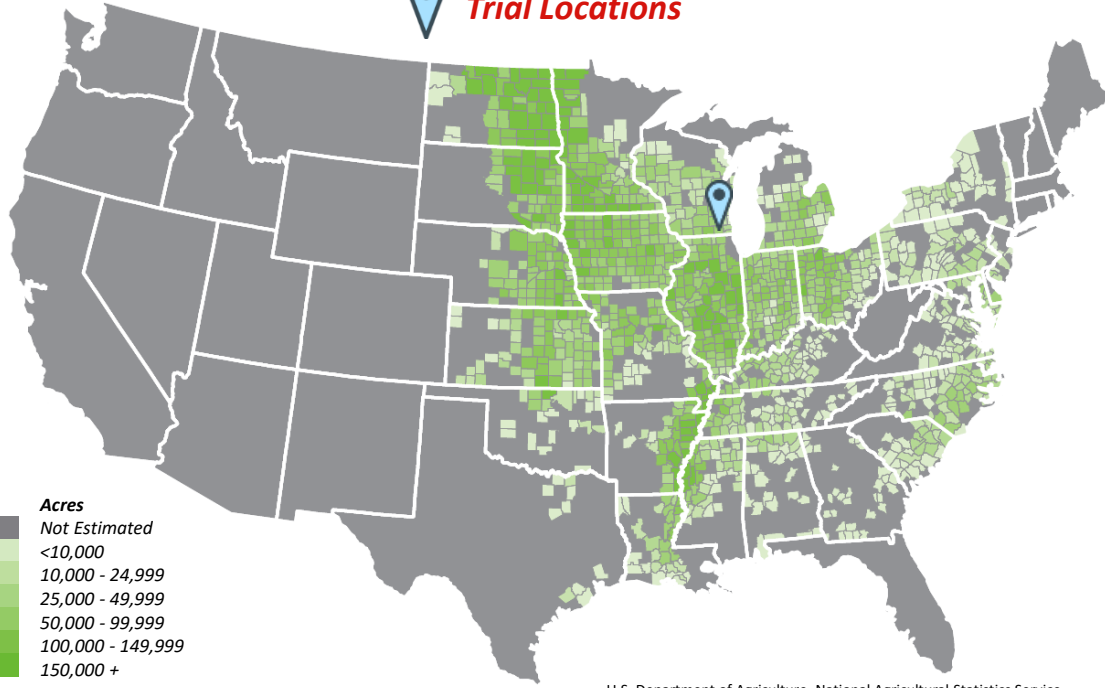
Location	Yield Increase
ND	-0.60 bu/ac
WI	3.96 bu/ac
Averaged Results	
Yield Increase	1.68 bu/ac

BRANDT® EnzUp® SeedFlow™ Zn

2023 Soybean Trial Locations and Yield Results



Trial Locations



Acres

Not Estimated

<10,000

10,000 - 24,999

25,000 - 49,999

50,000 - 99,999

100,000 - 149,999

150,000 +

U.S. Department of Agriculture, National Agricultural Statistics Service

Location
BRANDT EnzUp Seed Flow Zn

Yield
Increase

WI

4.59 bu/ac

Location
BRANDT EnzUp Seed Flow Zn
+ MicroSURGE + Inceptive

Yield
Increase

WI

5.57 bu/ac

TALC USA

A BRANDT COMPANY

Talc 80/20 + MicroSURGE for Soybeans

2022 Soybean Trial Locations and Yield Results

 **Trial Locations**



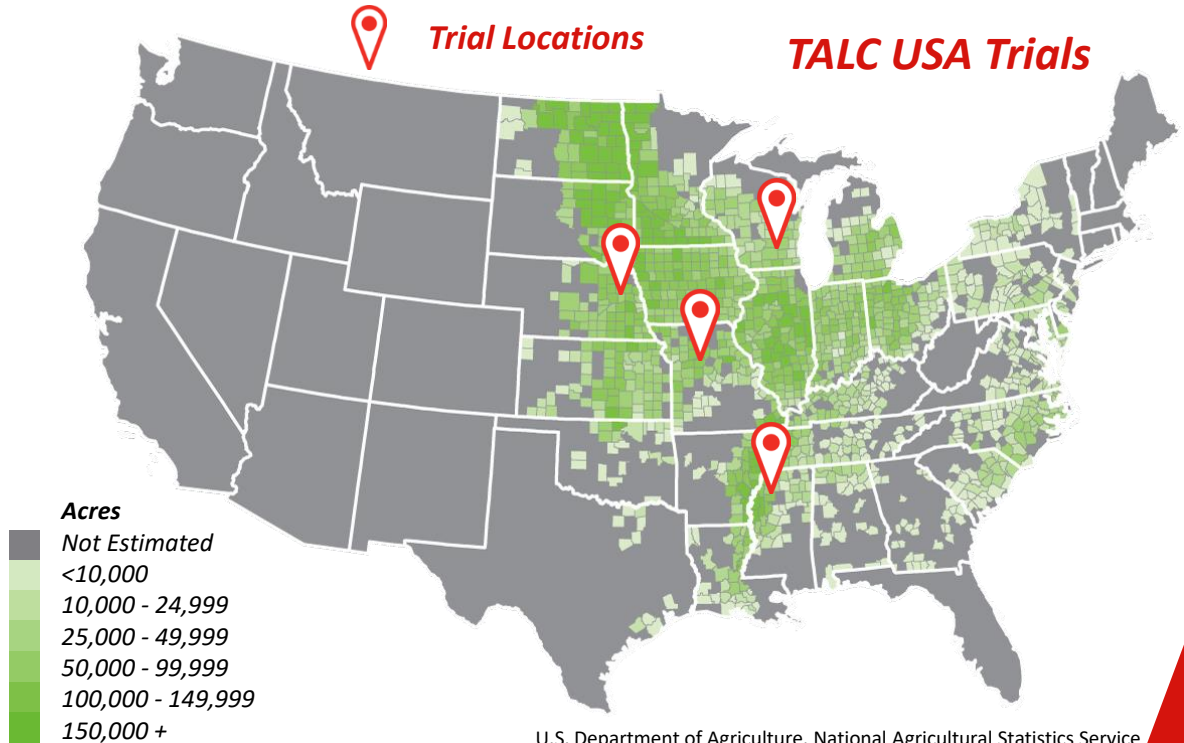
U.S. Department of Agriculture, National Agricultural Statistics Service

Location	Yield Increase
SGS America, Aurora, SD	4.7 bu/ac
Mid-South Ag Research, Proctor, AR	6.2 bu/ac
Delta Crop and Research, Holly Ridge, MS	10.4 bu/ac
Buckeye Ag Testing, Urbana, OH	1.1 bu/ac
North Central Research Station, St. Johns, MI	4.4 bu/ac
Elite Research, Aurora, NE	1.6 bu/ac
BRANDT Research Farm, Pleasant Plains, IL	1.8 bu/ac
University of Illinois, Champaign, IL	2.2 bu/ac
TSM, Catlin, IL	5.4 bu/ac
KS	3.7 bu/ac
MN	-3.8 bu/ac
MO	4.7 bu/ac
ND	1.9 bu/ac
WI	0.3 bu/ac
Averaged Results	
Yield Increase	3.4 bu/ac
Grower ROI @!4/bu	\$45.14/ac

Talc USA Soybeans Trial Locations and Yield Results

MicroSURGE + Inceptive - 2016-2021

Location	Yield Increase
Mississippi	3.3 bu/ac
Missouri	3.5 bu/ac
Nebraska	3.6 bu/ac
Wisconsin	3.1 bu/ac
Averaged Results	
Yield Increase	3.4 bi/ac
Grower ROI @\$14/bu	\$40.44/ac



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Talc 80/20 + Encompass



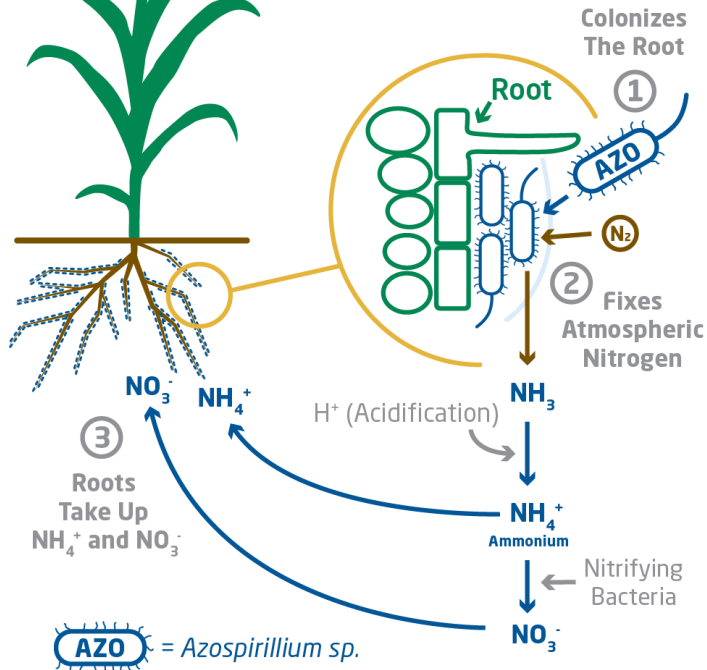
Talc 80/20
w/graphite



Encompass
*Contains
Azospirillum &
Pseudomonas*

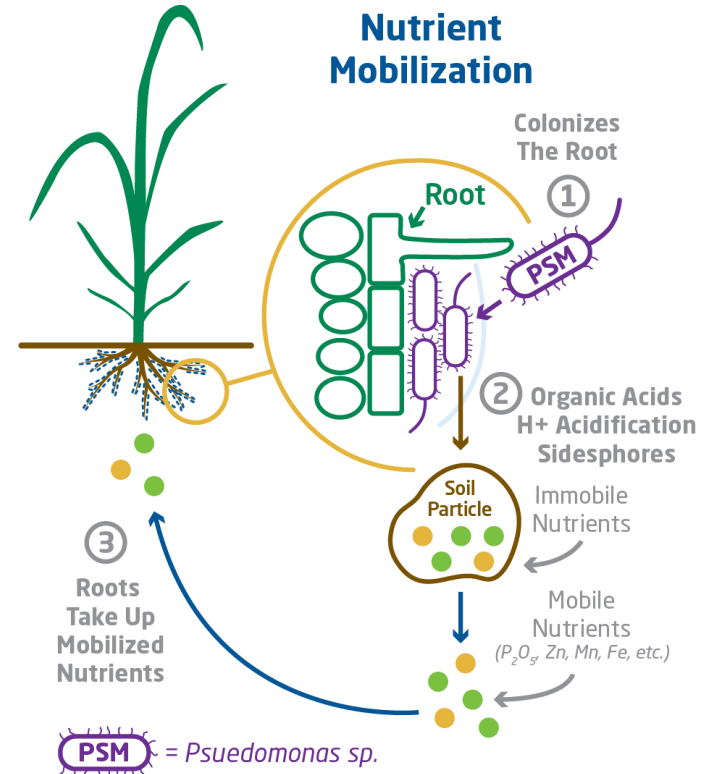
Azospirillum sp. (2 species)

N Fixation from Atmosphere



Pseudomonas sp. (3 species)

Nutrient Mobilization

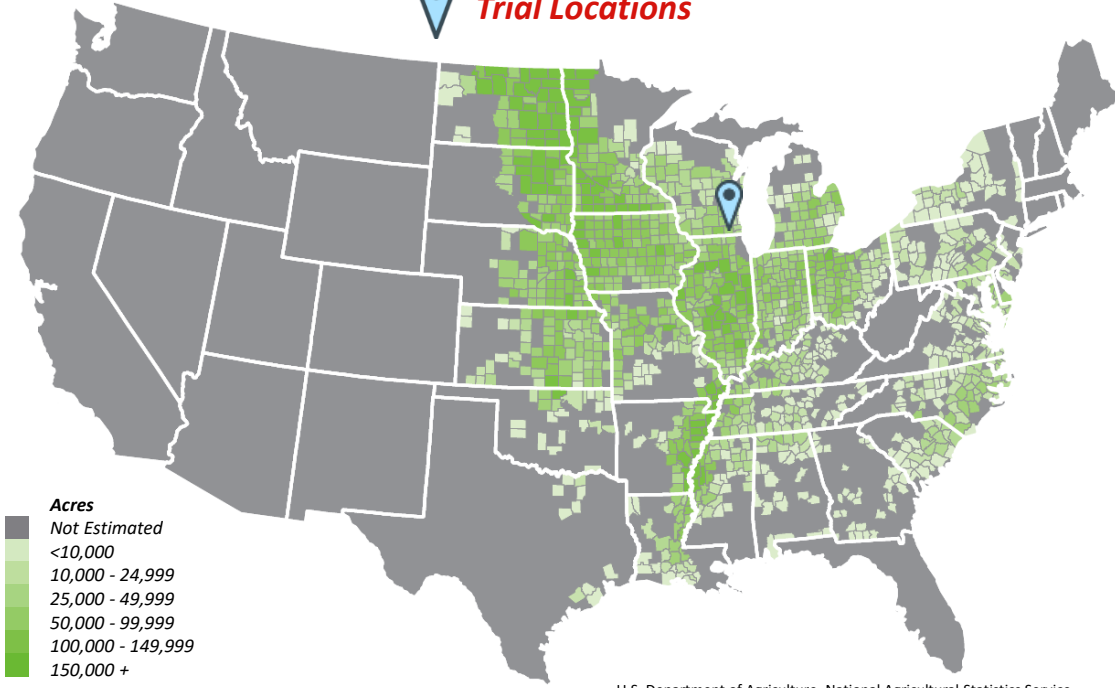


Encompass - Dry

2023 Soybean Trial Locations and Yield Results



Trial Locations



Location	Yield Increase
WI	3.8 bu/ac

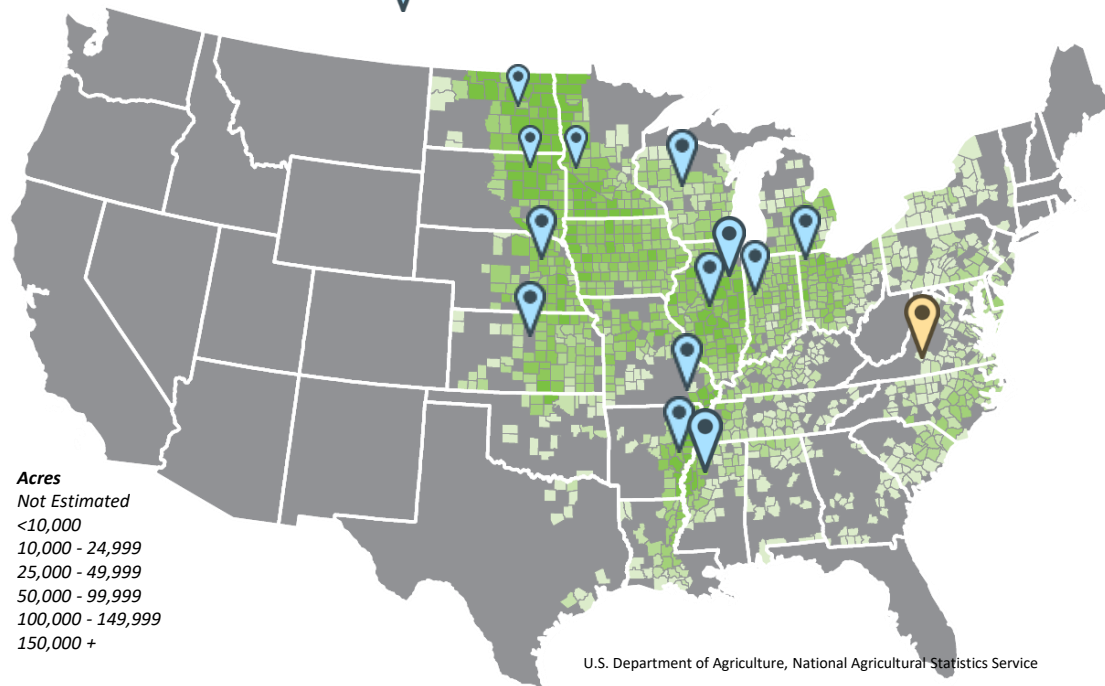
U.S. Department of Agriculture, National Agricultural Statistics Service

Talc 80/20 + Encompass

2022 Soybean Trial Locations and Yield Results



Trial Locations



Location	Yield Increase
SGS America, Aurora, SD	0.7 bu/ac
Mid-South Ag Research, Proctor, AR	3.5 bu/ac
Delta Crop and Research, Holly Ridge, MS	9.0 bu/ac
Buckeye Ag Testing, Urbana, OH	-1.0 bu/ac
North Central Research Station, St. Johns, MI	2.4 bu/ac
Elite Research, Aurora, NE	4.0 bu/ac
BRANDT Research Farm, Pleasant Plains, IL	1.2 bu/ac
U of Illinois	2.4 bu/ac
Indiana	4.3 bu/ac
Kansas	1.0 bu/ac
Minnesota	-1.7 BU/AC
North Dakota	2.1 bu/ac
Wisconsin	2.0 bu/ac
Virginia (Encompass + Inceptive)	8.3 bu/ac
Averaged Results	
Yield Increase Encompass	2.5 bu/ac
Grower ROI @\$14/bu	\$26/ac

Talc 80/20 + MicroSURGE



**Talc 80/20
w/graphite**



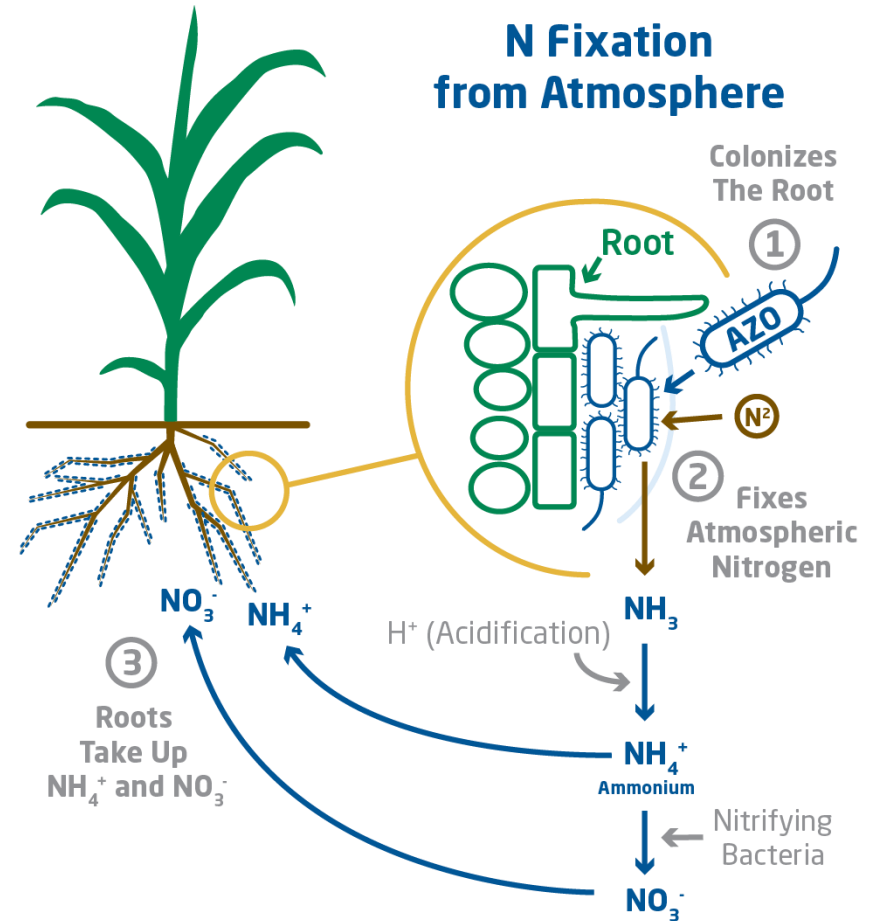
MicroSurge
*Contains 2 strains of
Azospirillum*

MicroSurge

Inoculant: *Azospirillum* sp.

Azospirillum sp. colonizes root surfaces and establishes symbiotic association with the plant.

Azospirillum sp. fixes nitrogen from the atmosphere into ammoniacal nitrogen that plants can utilize

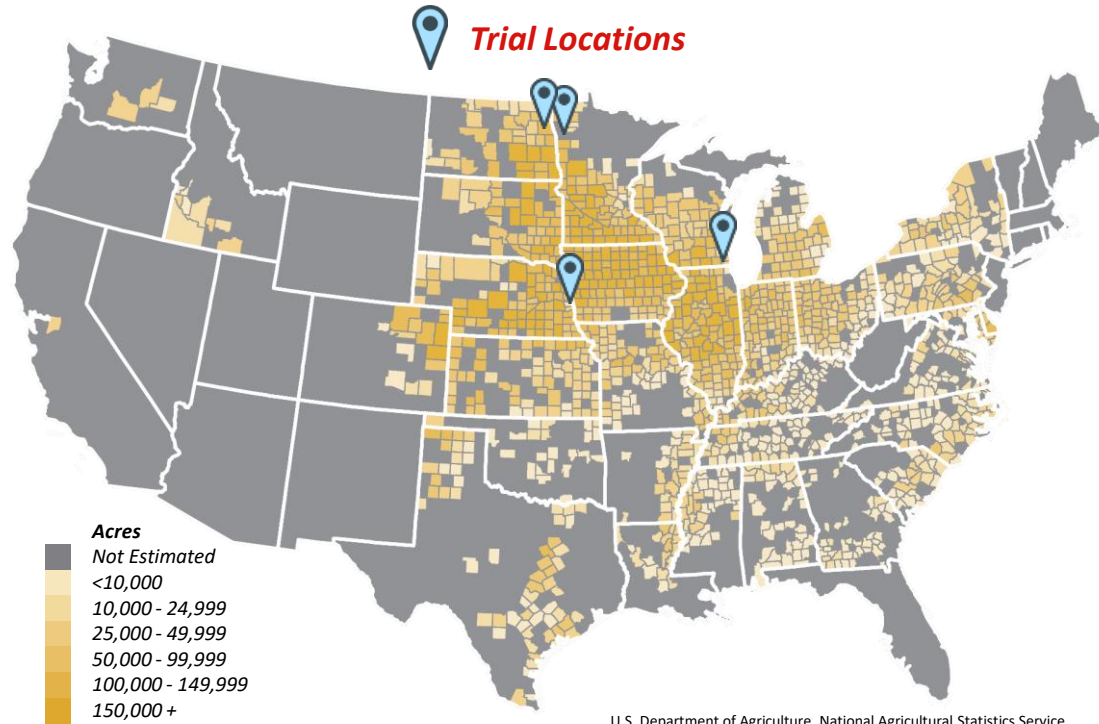


Talc USA Corn Trial Results



Inceptive + MicroSURGE for Corn

2023 Corn Trial Locations and Yield Results



U.S. Department of Agriculture, National Agricultural Statistics Service

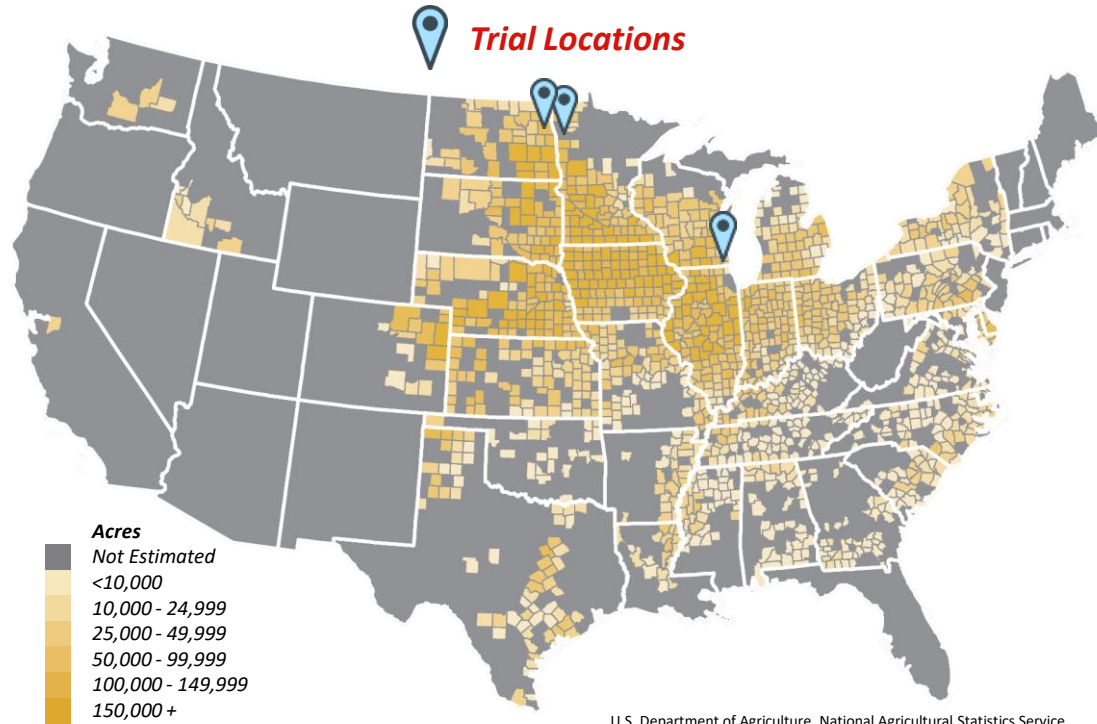
Location	Yield Increase
Dry MicroSURGE + Inceptive	
MN	2.2 bu/ac
NE	11 bu/ac
ND	0.1 bu/ac
WI	8.81 bu/ac
WI	6.1 bu/ac

Averaged Results	
Yield Increase	5.9 bu/ac

Location	Yield Increase
Liquid MicroSURGE + Inceptive	
WI	11.6 bu/ac

BRANDT® EnzUp® SeedFlow™ Zn

2023 Corn Trial Locations and Yield Results

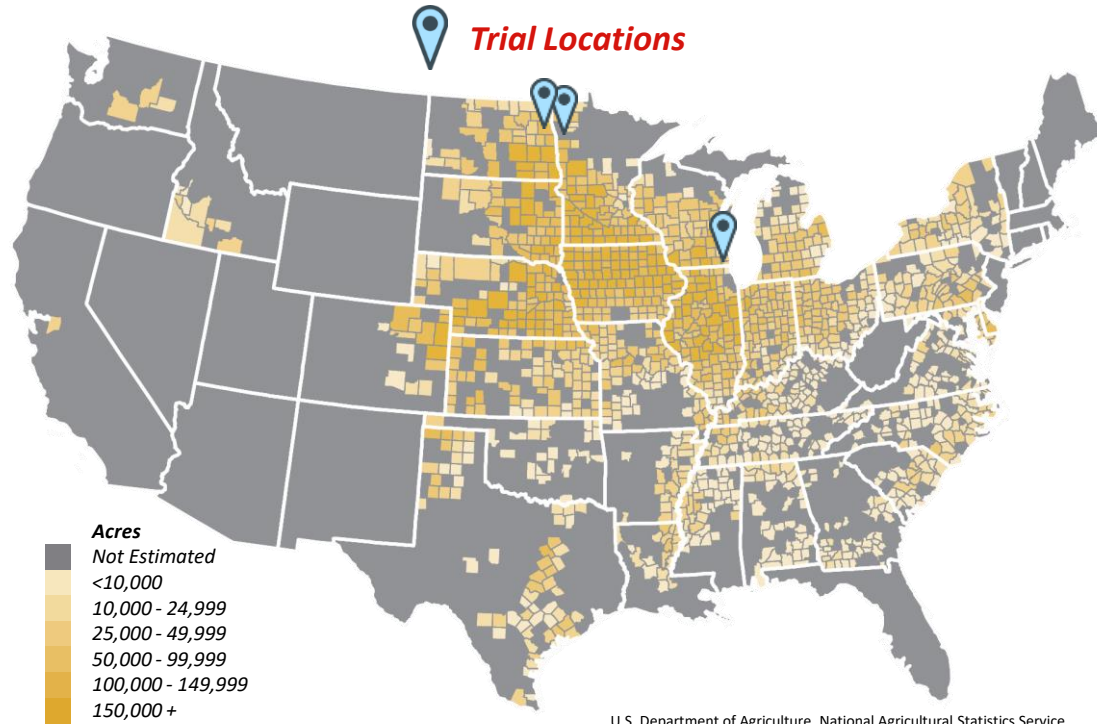


Location BRANDT EnzUp SeedFlow Zn	Yield Increase
MN	2.6 bu/ac
ND	5.8 bu/ac
WI	6.0 bu/ac
Averaged Results	
Yield Increase	4.8 bu/ac

Location BRANDT EnzUp SeedFlow Zn + MicroSURGE + Inceptivo	Yield Increase
ND	14.8 bu/ac
WI	11.7 bu/ac
Averaged Results	
Yield Increase	13.2 bu/ac

Inceptive + Dry MicroSURGE for Corn + Molybdenum

2023 Corn Trial Locations and Yield Results



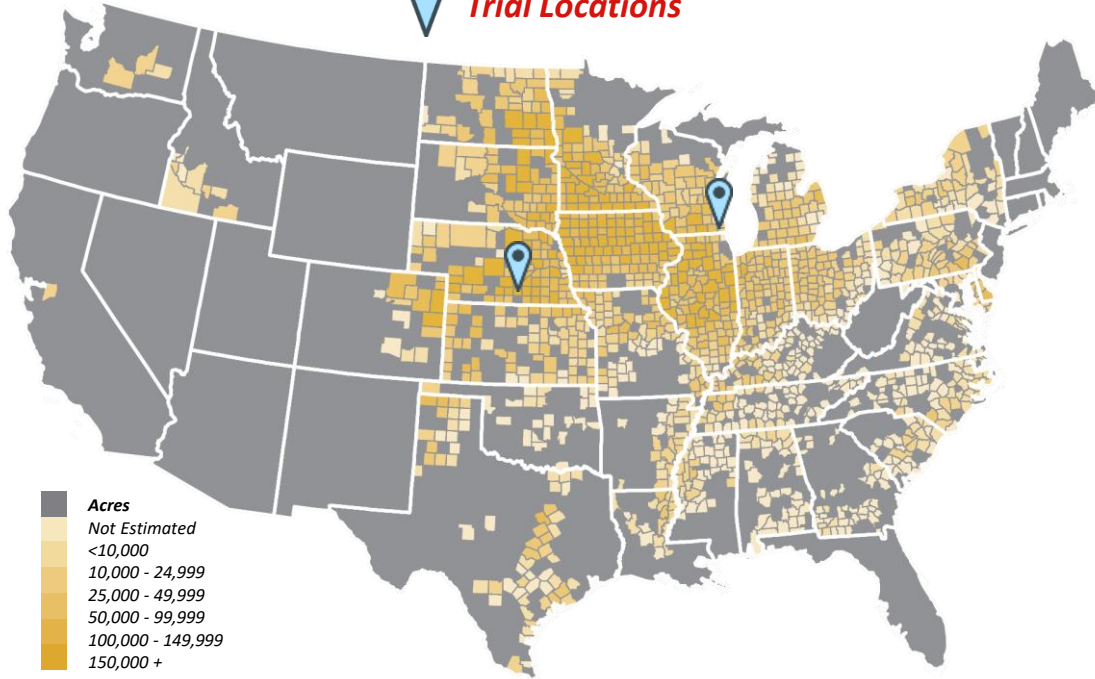
Location BRANDT EnzUp SeedFlow Zn	Yield Increase
MN	4.2 bu/ac
ND	5.4 bu/ac
WI	9.01 bu/ac
Averaged Results	
Yield Increase	6.2 bu/ac

Encompass

2023 Corn Trial Locations and Yield Results



Trial Locations



Location Encompass Dry	Yield Increase
WI	3.43 bu/ac

Location Encompass In-Furrow	Yield Increase
WI	5.97 bu/ac

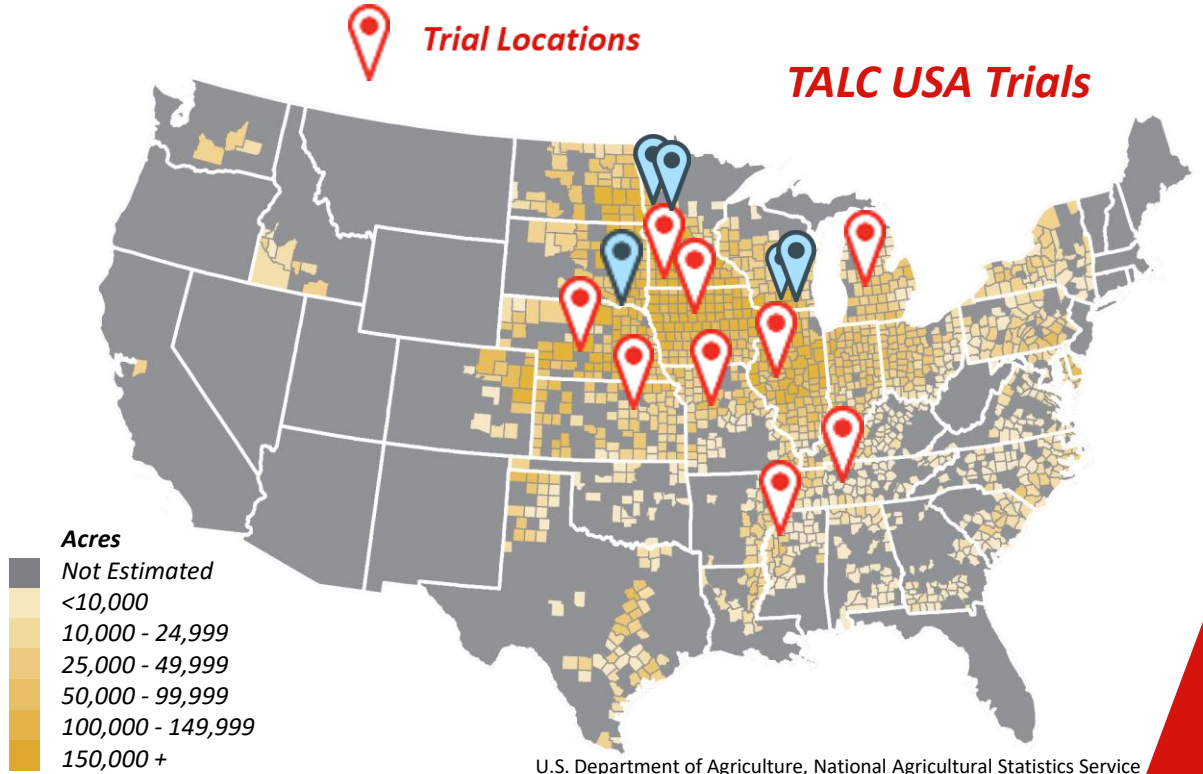
Location Encompass Dry + Inceptive	Yield Increase
NE	7.8 bu/ac
WI	3.43 bu/ac


Averaged Results	
Yield Increase	5.6 bu/ac

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TALC USA Corn Trial Locations and Yield Results with MicroSURGE + Inceptive - 2013-2022

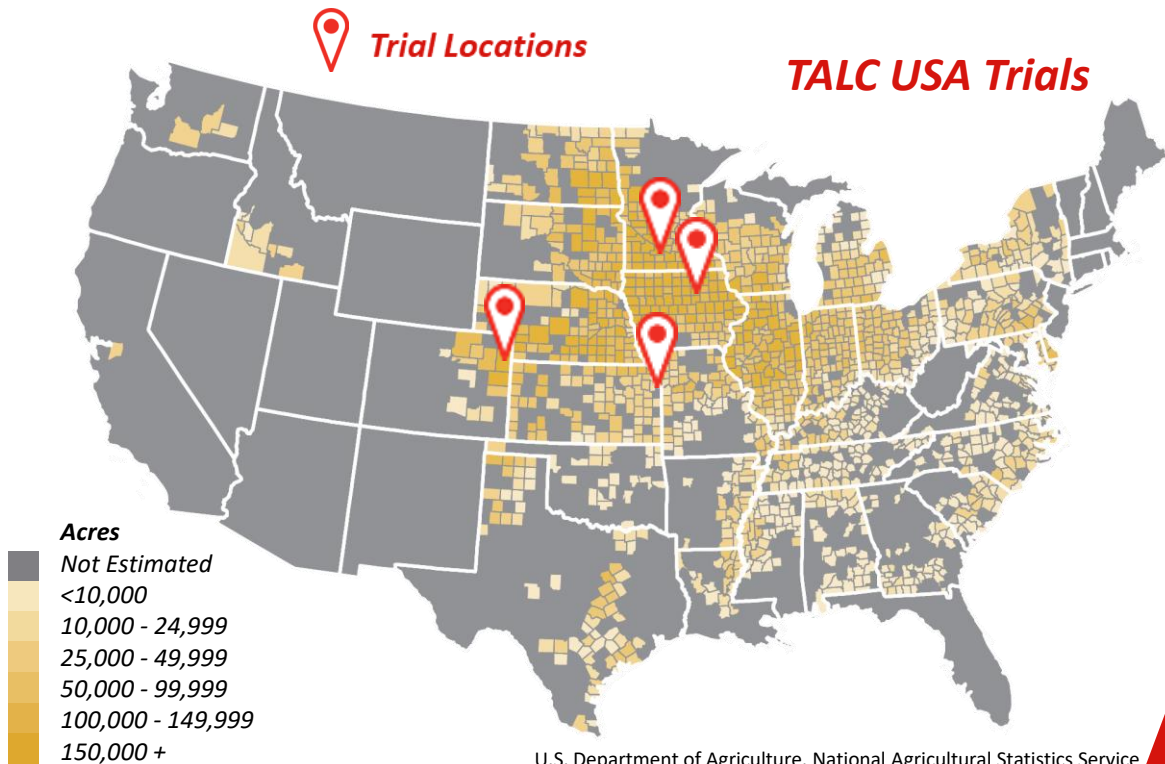
Location	Yield Increase
Agri-Tech Whitewater Wi 2022	4.81 bu/ac
KayJay AG Wilkin County Mn 2022	3.7# bu/ac
Agri-Tech Whitewater Wi 2022	12.8 bu/ac
Cedar County Ne 2022	10.9bu/ac
Norman County Mn 2022	8.0 bu/ac
Illinois	7.4 bu/ac
Iowa	5 bu/ac
Michigan	17.7 bu/ac
Minnesota	5.9 bu/ac
Mississippi	6 bu/ac
Missouri	6.1 bu/ac
Nebraska	6.8 bu/ac
Tennessee	5.5 bu/ac
Wisconsin	8.9 bu/ac
Averaged Results	
Yield Increase	7.8 bu/ac
Grower ROI @\$6/bu	\$42.74



 **2022 Trials**

Talc USA Corn Trial Locations and Yield Results with Dry MicroSURGE Corn 2013-2021

Location	Yield Increase
Colorado	10 bu/ac
Iowa	6.1 bu/ac
Minnesota	4.5 bu/ac
Missouri	7.1 bu/ac
Averaged Results	
Yield Increase	8.1 bu/ac
Grower ROI @\$6/bu	\$46.50



Talc USA Corn Trial

MicroSURGE + Inceptive vs Pivot Bio

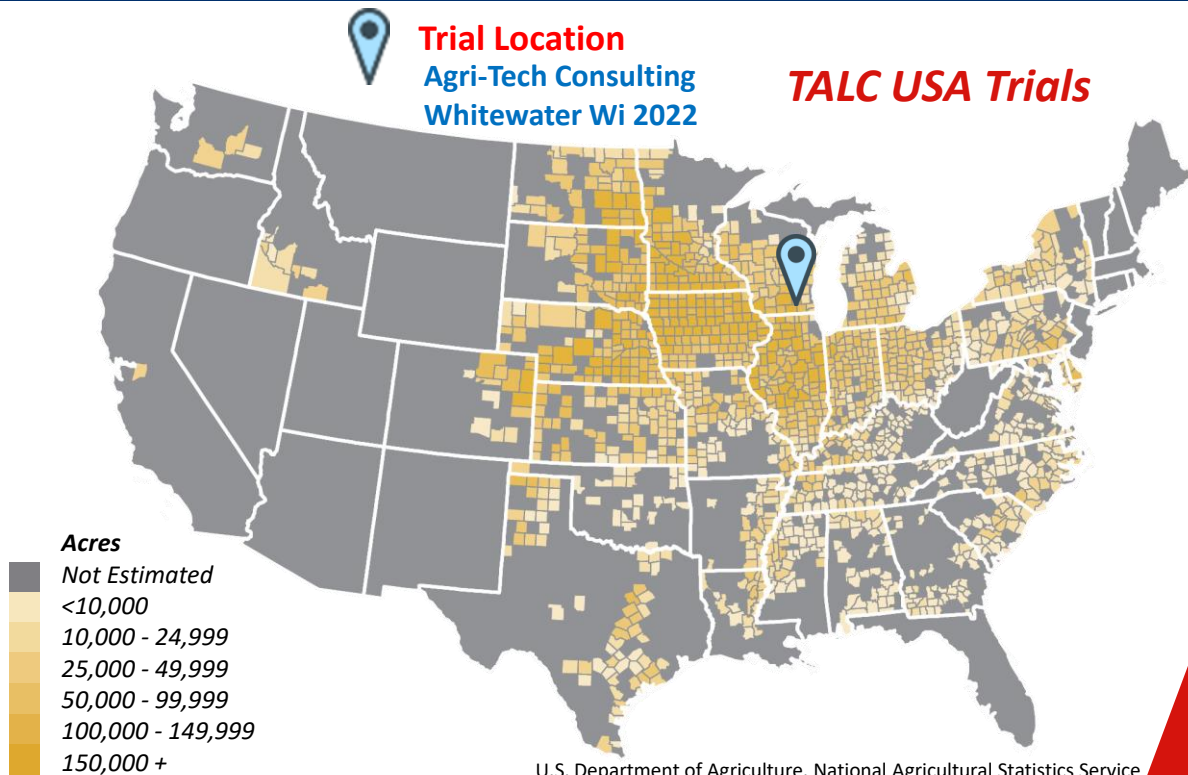
2022

Treatment	Yield
Control 100% Fertilizer	252.1 bu/ac
Control 80% Fertilizer	229.2 bu/ac
Dry MicroSURGE Inceptive 80% Fertilizer	242 bu/ac
Dry Pivot Bio 80% Fertilizer	241 bu/ac

Results

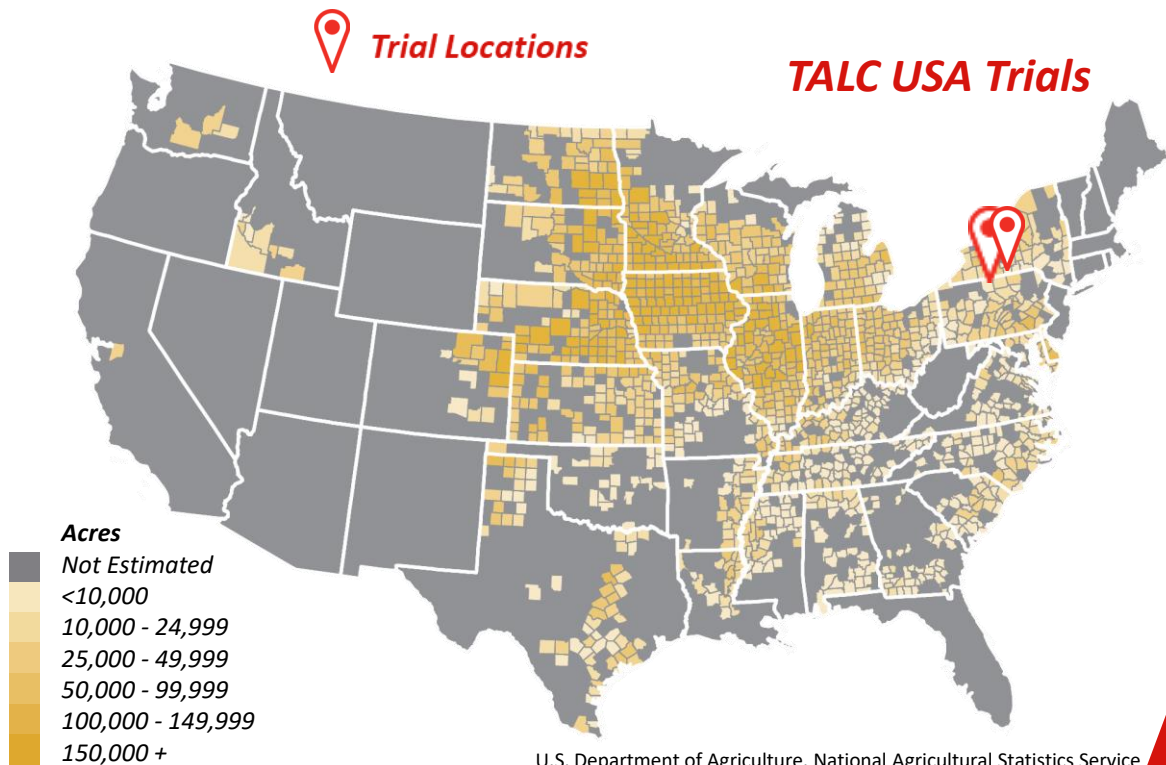
MicroSURGE + Inceptive
13 bu more than 80%
Control and 1 bu more than
Pivot Bio

More yield and about
\$20/Acre less cost than Pivot
Bio



Talc USA Corn Trial Locations and Yield Results with Liquid Encompass In-Furrow 2022

Location	Yield Increase
Wayne County New York #1	21.4
Wayne County New York #2	21.5
Averaged Results	
Yield Increase	21.45
Grower ROI @\$6/bu	\$113.20



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Talc USA Cotton Trial Results

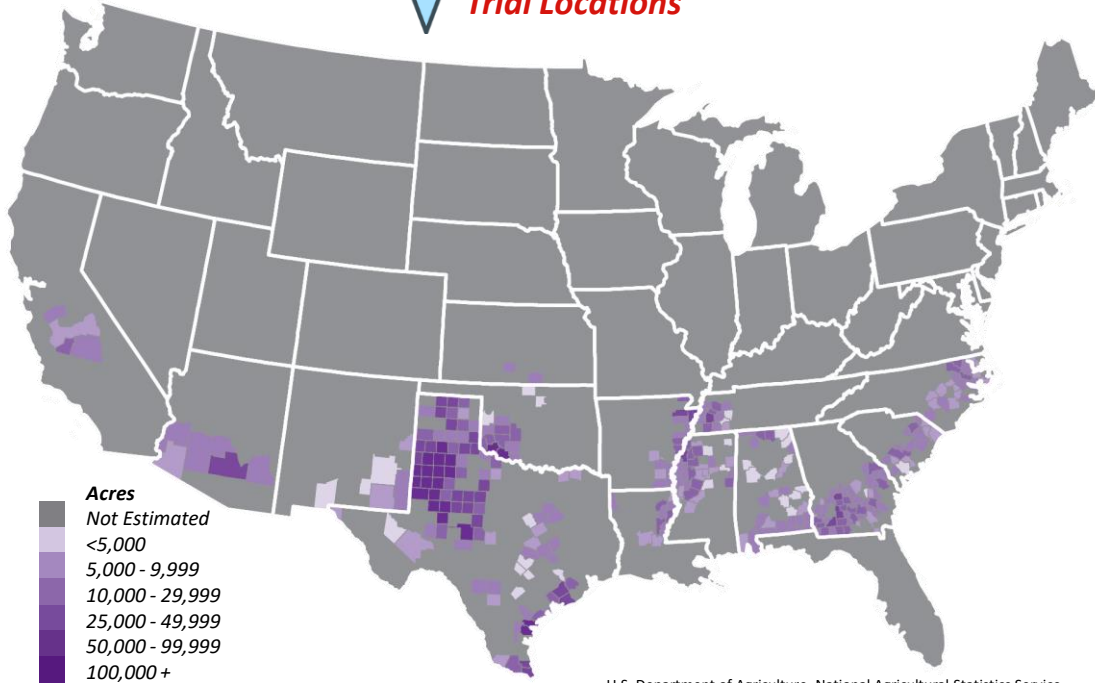


Dry MicroSURGE for Cotton

2023 Cotton Trial Locations and Yield Results



Trial Locations



Acres
Not Estimated
<5,000
5,000 - 9,999
10,000 - 29,999
25,000 - 49,999
50,000 - 99,999
100,000 +

Location

Yield Increase

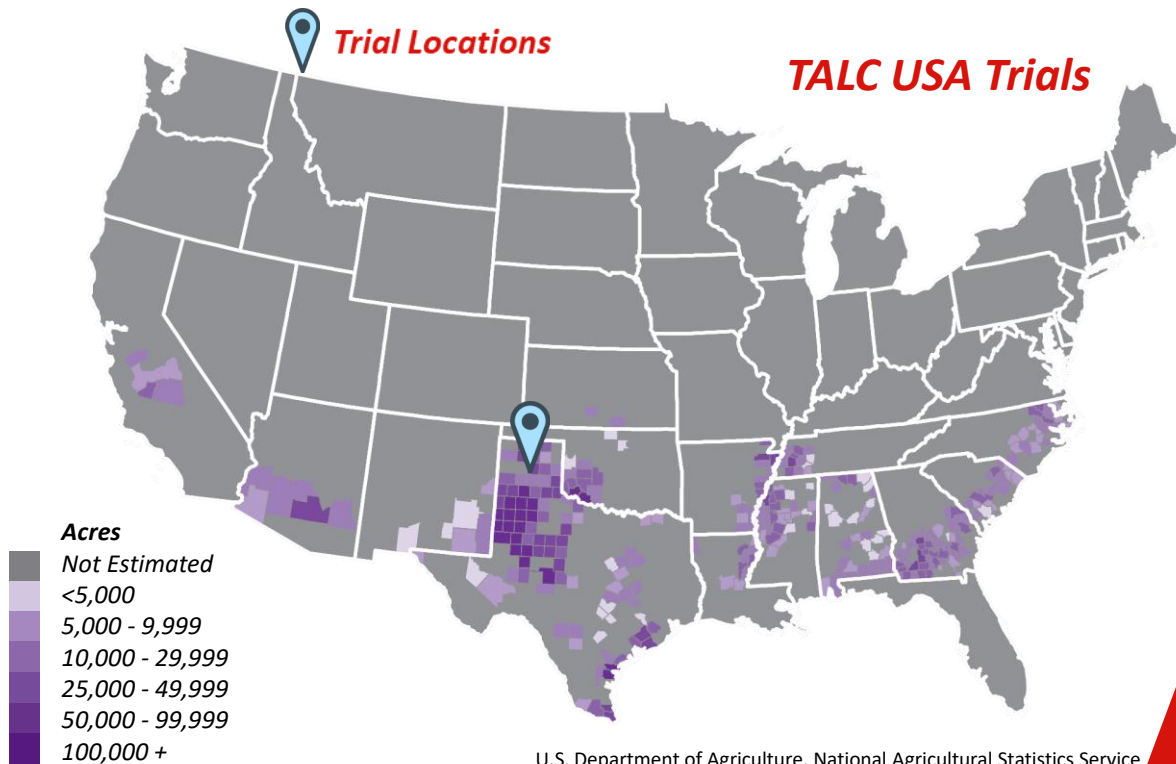
Multi State-Mid South 2023
11 Counties

27 lb/ac

U.S. Department of Agriculture, National Agricultural Statistics Service

2022 Cotton Trial Locations and Yield Results using Inceptive to control Nematodes

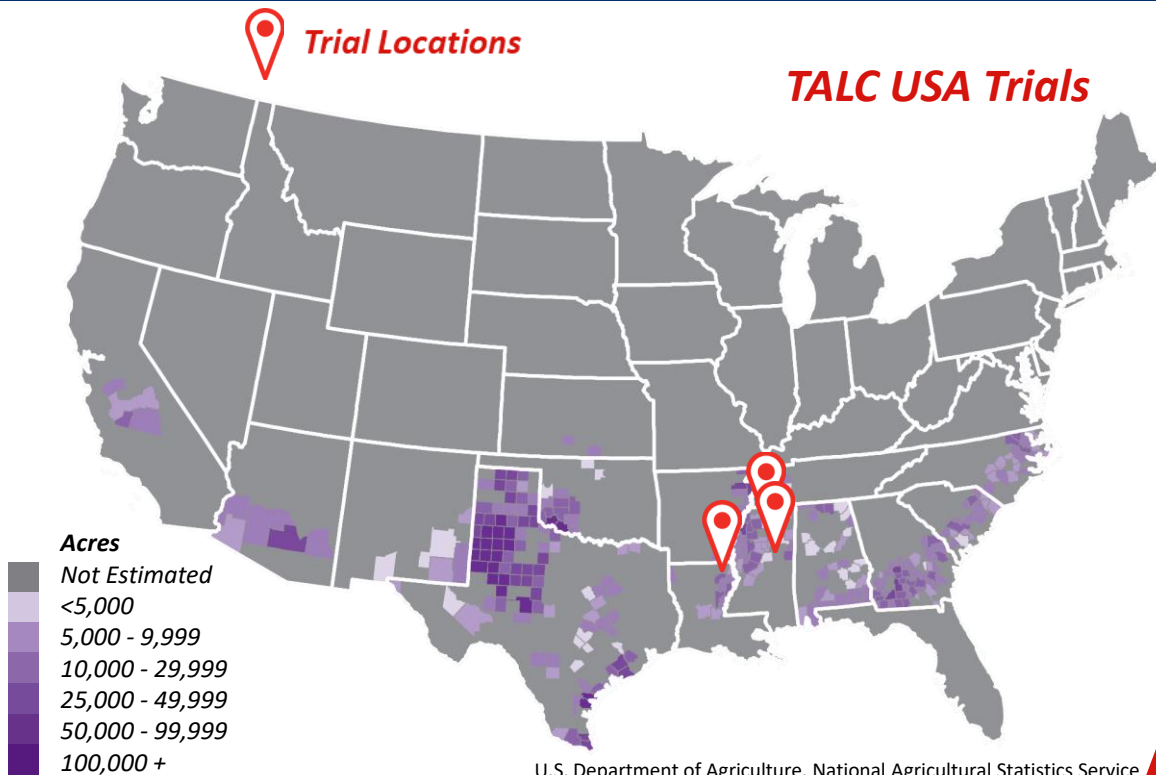
Location	Yield Increase
Cotton Center Texas Susceptible variety	304 # lint/ac
Cotton Center Texas Resistant variety	-55# lint/ac
*Susceptible variety with Inceptive out yielded the resistant variety	
Averaged Results	
Yield Increase	125# lint/ac
Grower ROI @ \$.80/#	\$97.36/ac



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Talc USA Cotton Trial Locations and Yield Results using MicroSURGE + Inceptive

Location	Yield Increase
Richland Parish, Mississippi 2020	-5# lint/ac
Yazoo County, Mississippi 2020	144# lint/ac
Hinds County, Mississippi 2020	48# lint/ac
Averaged Results	
Yield Increase	62# lint/ac
Grower ROI @ \$.80/#	\$46.41/ac



Talc USA Wheat Trial Results

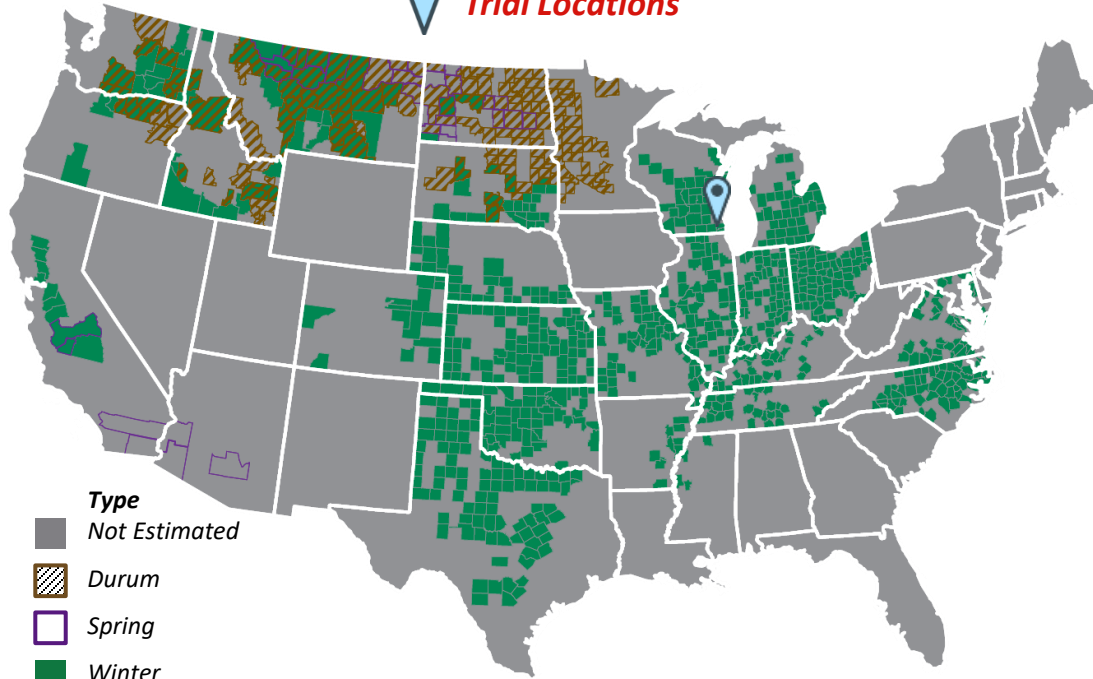


Dry MicroSURGE for Small Grains

2023 Wheat Trial Locations and Yield Results



Trial Locations



Location
Spring Wheat

Yield
Increase

WI

2.11 bu/ac

Location
Winter Wheat

Yield
Increase

WI

4.2 bu/ac

Type

Not Estimated

Durum

Spring

Winter

U.S. Department of Agriculture, National Agricultural Statistics Service

TALC USA

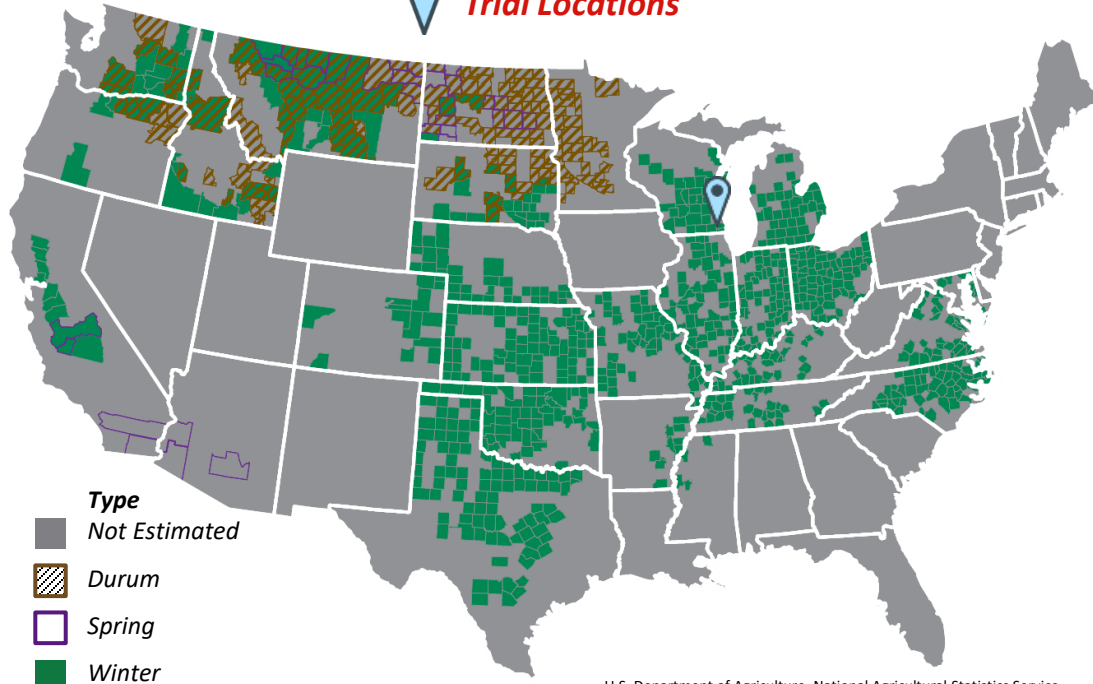
A BRANDT COMPANY

BRANDT EnzUp Grain ST

2023 Spring Wheat Trial Locations and Yield Results



Trial Locations



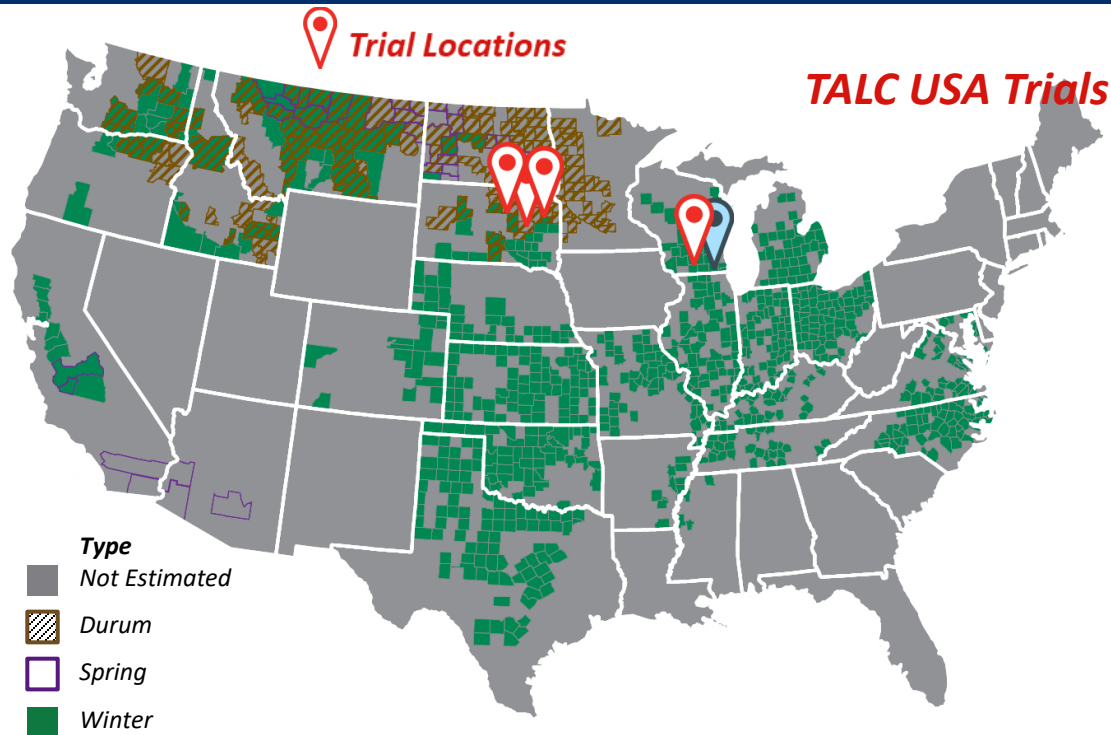
Location	Yield Increase
BRANDT EnzUp Grain ST	
WI	3.13 bu/ac

Location	Yield Increase
BRANDT EnzUp Grain ST + MicroSURGE + Inceptive	
WI	4.72 bu/ac

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Wheat Trial Locations and Yield Results Using Dry Small Grain MicroSURGE

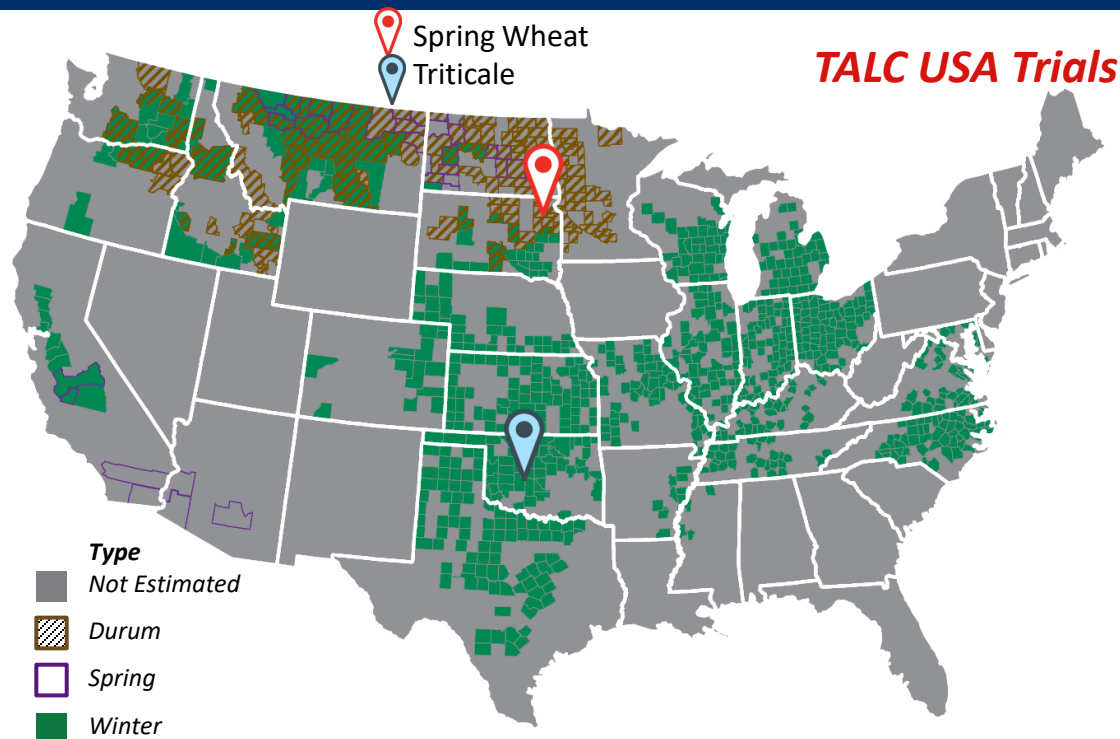
Location	Yield Increase
Agri-Tech #1 Whitewater Wi 2022	4.7 bu/ac
Agri-Tech #2 Whitewater Wi 2022	3.2bu/ac
Agri-Tech #1 Whitewater Wi 2021	2.8 bu/ac
Agri-Tech #2 Whitewater Wi 2021	2.9 bu/ac
Agri-Tech #3 Whitewater Wi 2021	4.0 bu/ac
Faulton S Dakota 2018	2.2 bu/ac
Hoven S Dakota 2018	8.0 bu/ac
Bristol S Dakota #1 2018	5.0 bu/ac
Bristol S Dakota #2 2018	6.9 bu/ac
Faulton S Dakota #2 2108	3.5 bu/ac
Faulton S Dakota #3 2108	1.8 bu/ac
Averaged Results	
Yield Increase	4.1 bu/ac
Grower ROI @\$8.50/bu	\$30.90/ac



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Wheat Trial Locations and Protein Increase Using Dry Small Grain MicroSURGE

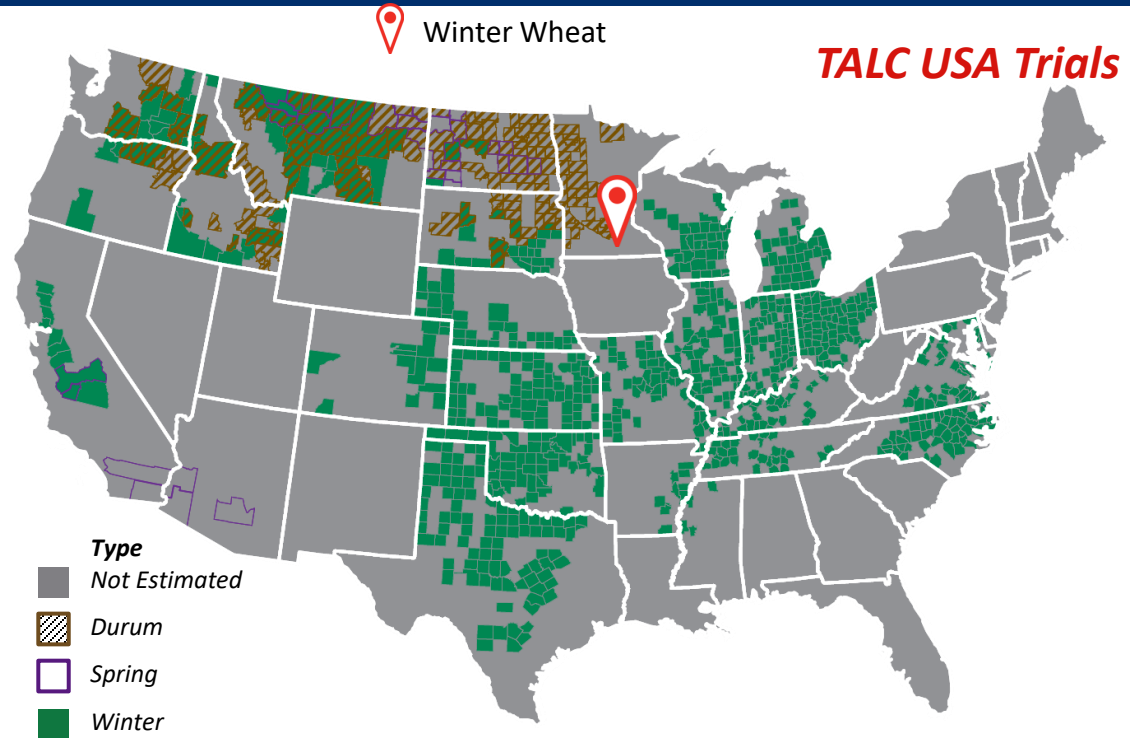
Location	Protein Increase
Faulkton S Dakota 2018	1%
Hoven S Dakota 2018	1.2%
Bristol S Dakota #1 2018	1%
Bristol S Dakota #2 2018	1.2%
Faulkton S Dakota #2 2108	1.2%
Faulkton S Dakota #3 2108	.7%
So Central Ok #1 2017	1.5%
So Central Ok #2 2017	3.2%
So Central Ok #3 2017	.4%
So Central Ok #4 2017	-.9%
So Central Ok #5 2017	1.0%
So Central Ok #6 2017	1.8%
Averaged Results	
Avg Protein Increase	1%



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Wheat Trial Locations and Falling Numbers Using Dry Small Grain MicroSURGE

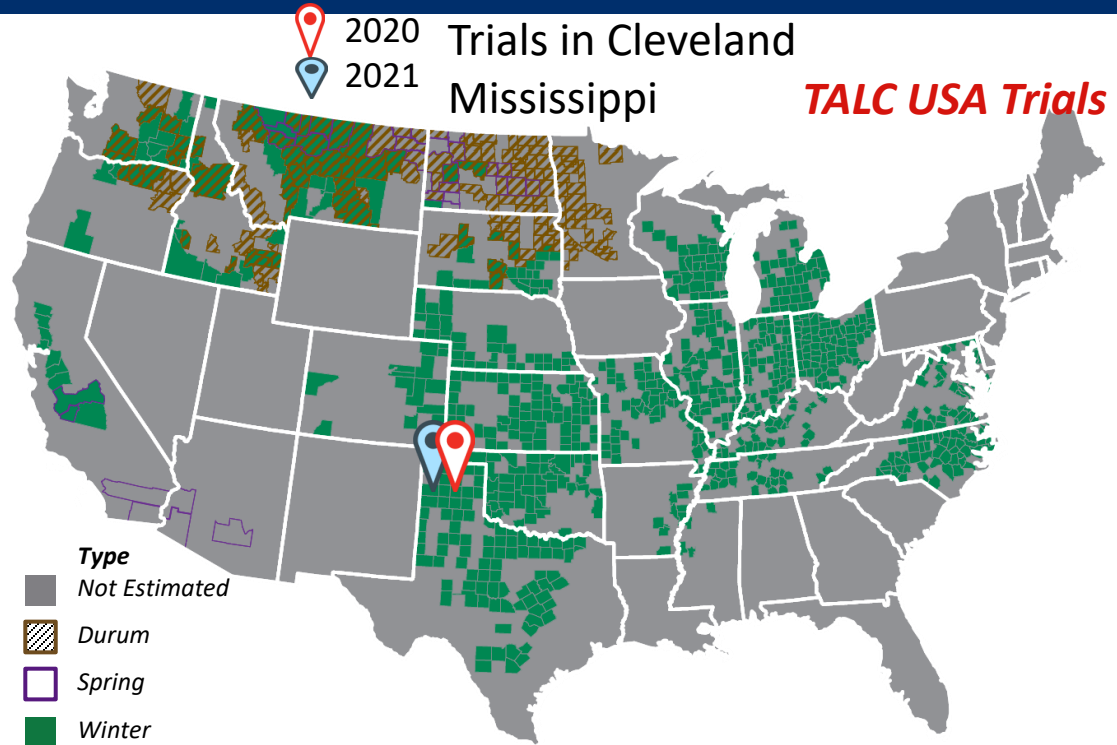
Location	Falling Numbers
Agri-Tech Consulting Whitewater, Wi 2022	Control 345 MicroSurge 355
Agri-Tech Consulting Whitewater, Wi 2022	Control 326 MicroSurge 342
Averaged Results	
Falling Numbers Increase	13



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Rice Trial Locations and Yield Results Using Dry Small Grain MicroSURGE

Location	Yield Increase
Paddy #1 2020	11 bu/ac
Paddy #2 2020	16 bu/ac
Paddy #3 2020	5 bu/ac
Paddy #4 2020	8 bu/ac
#1 2021	4.0 bu/ac
#2 2021	2.2 bu/ac
#3 2021	8.0 bu/ac
Averaged Results	
Yield Increase	8 bu/ac
Grower ROI @\$10/bu	\$76/ac



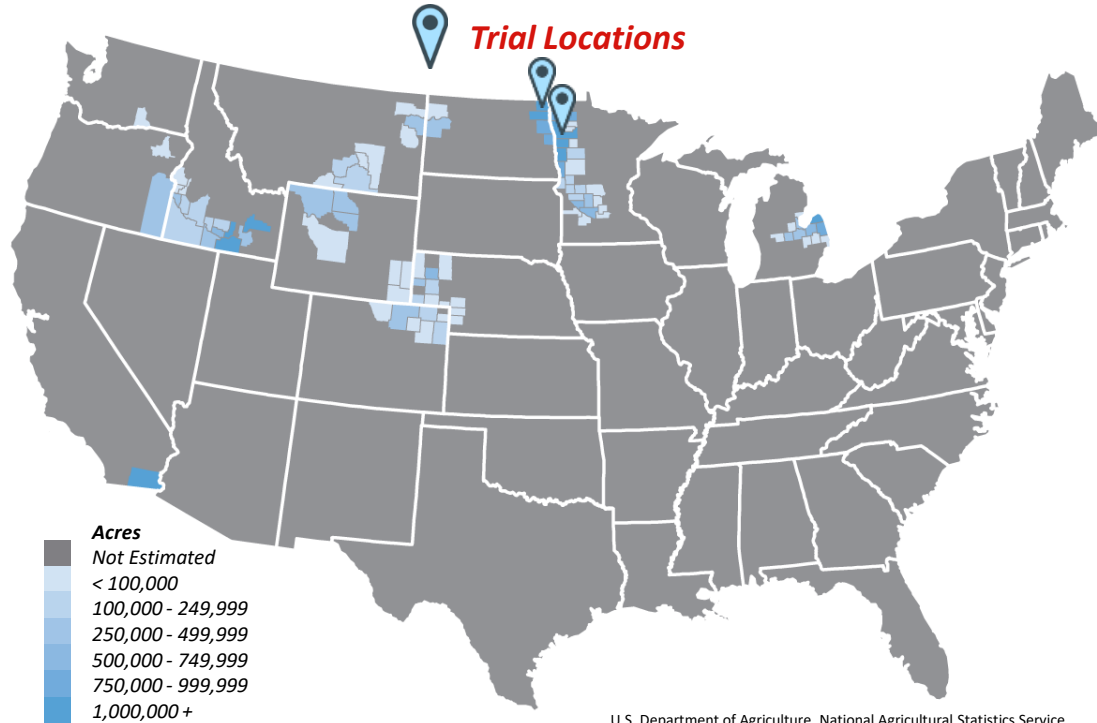
U.S. Department of Agriculture, National Agricultural Statistics Service

Talc USA Sugarbeet Trial Results



MicroSURGE for Sugar Beets

2023 Sugar Beet Trial Locations and Yield Results



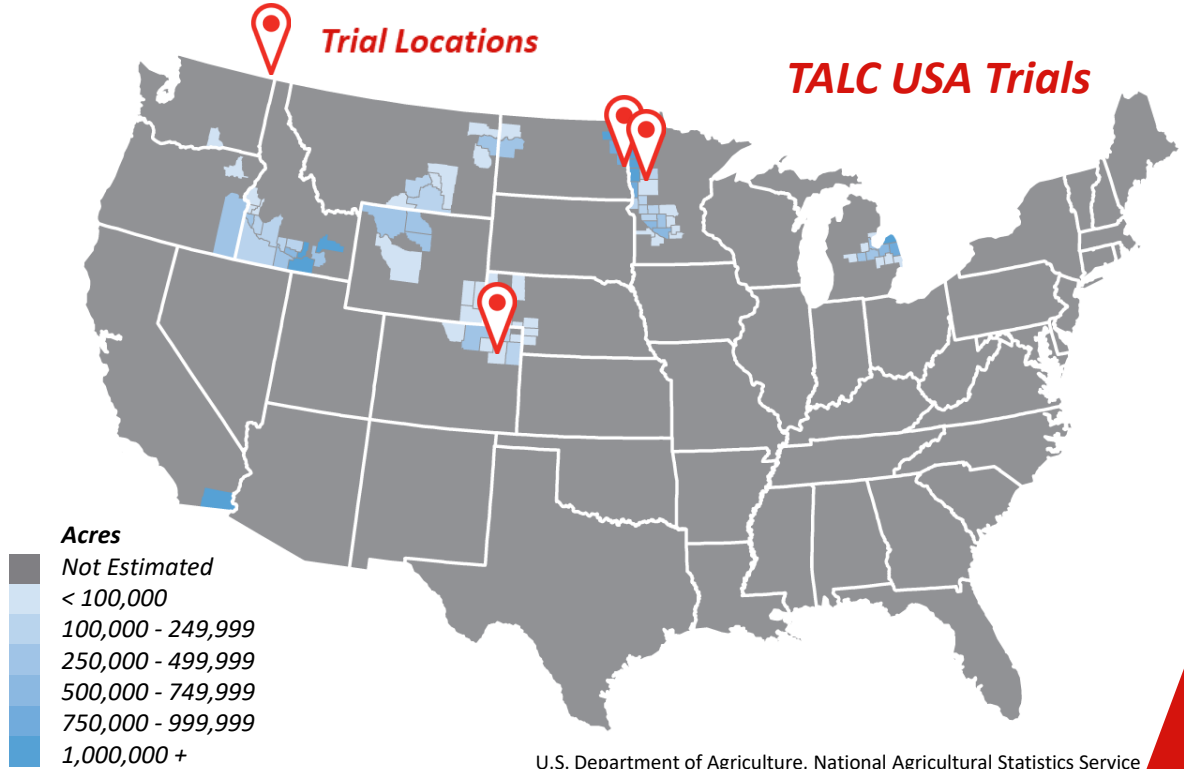
Location MicroSURGE + Inceptive	\$/ac Advantage
ND	\$25

Location MicroSURGE + Inceptive + BRANDT EnzUp SeedFlow Zn	\$/ac Advantage
MN	\$85.68
ND	\$26.43
Averaged Results	
Yield Increase	\$56.06

Sugar Beet Trial Locations and Yield Results

Dry MicroSURGE Sugarbeet

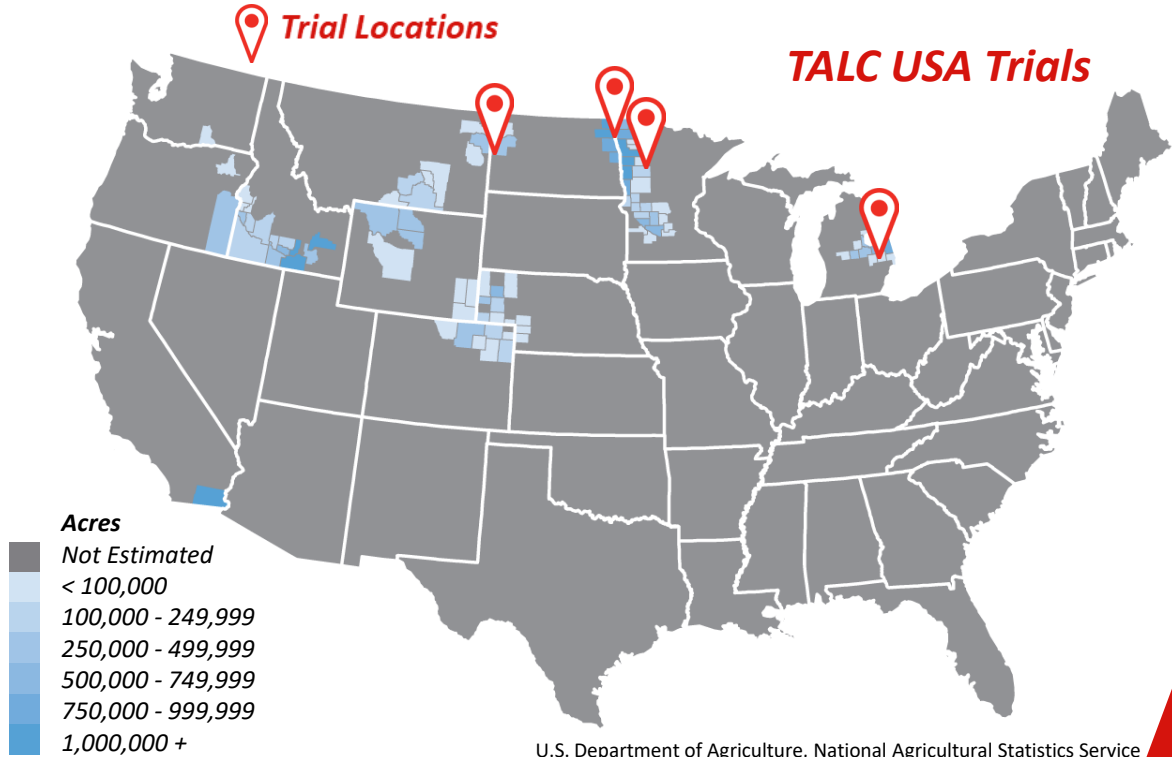
Location	Yield Increase
IRF, Yuma Colorado 2013	\$177/ac
IRF, Yuma Colorado 2014	\$85/ac
IRF, Yuma Colorado 2015	\$89/ac
IRF, Yuma Colorado 2016	\$174/ac
Minnesota 2019-2022	\$56/ac
North Dakota 2019-2022	\$52/ac
Averaged Results	
\$/ac Increase w/o Co	\$54/ac
Grower ROI	\$51.5/ac



Sugar Beet Trial Locations and Yield Results

Dry MicroSURGE Sugarbeet + Inceptive

Location	Yield Increase
Minnesota 2019-2022	\$77/ac
Richland Co Montana 2021	\$65/ac
North Dakota 2019-2022	\$72/ac
Michigan 2021	\$31/ac
Averaged Results	
\$/ac Increase	\$61/ac
Grower ROI	\$56/ac



Talc USA Field Bean Trial Results

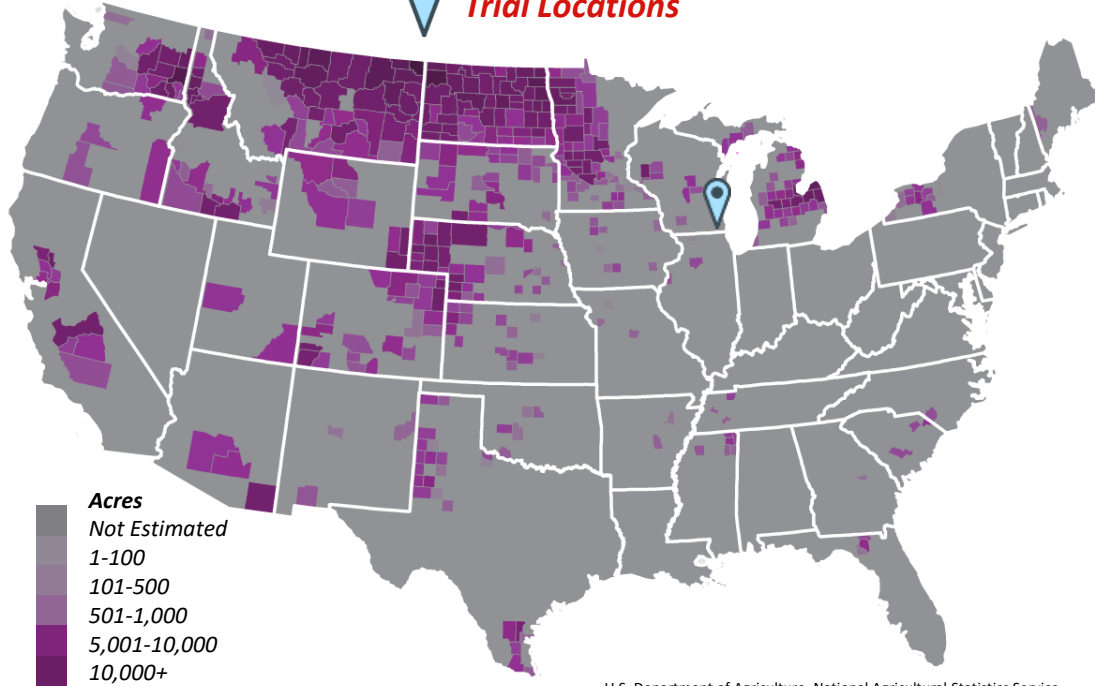


MicroSURGE for Dry Field Beans

2023 Dry Field Bean Trial Locations and Yield Results



Trial Locations



Location MicroSURGE	Yield Increase
WI	161 lb/ac

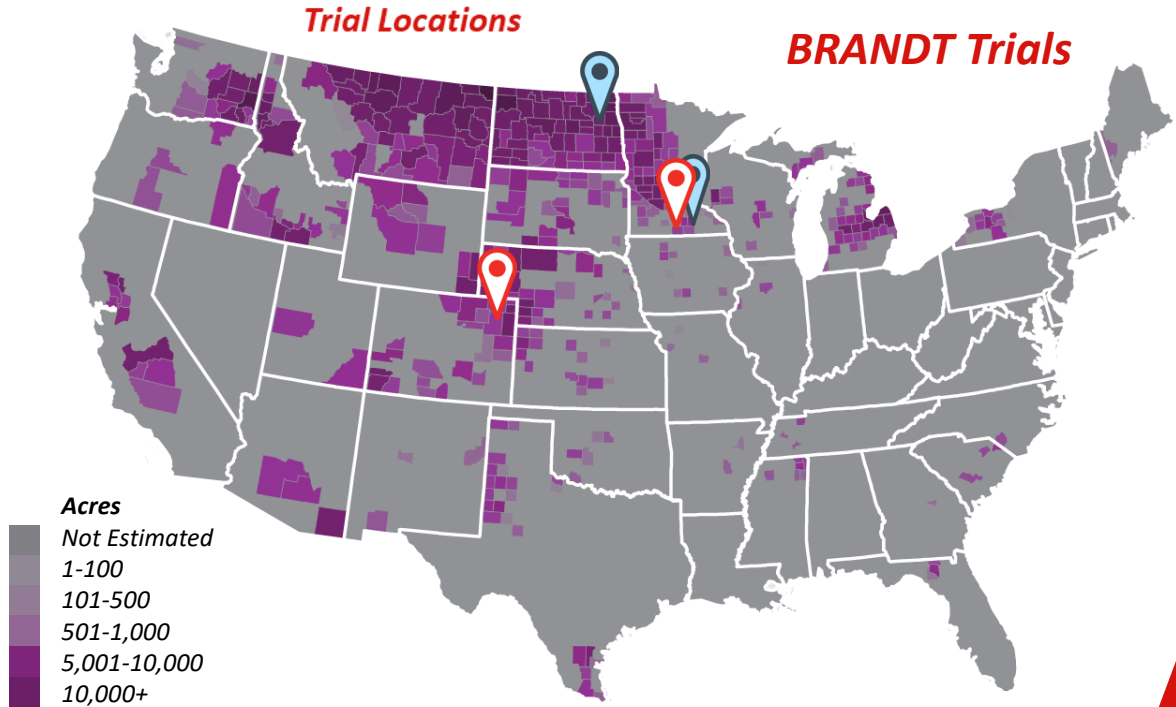
Location MicroSURGE + Inceptive	Yield Increase
WI	360 lb/ac

U.S. Department of Agriculture, National Agricultural Statistics Service

Dry Field Bean Trial Locations and Yield Results

Dry Field Bean MicroSURGE

Location	Yield Increase
Agri-Tech Whitewater Wi 2021	183#/ac
Agri-Tech Whitewater Wi 2022	197#/ac
IRF, Yuma Colorado 201	241#/ac
Steele County N Dakota 2022	121/ac
Polk County Minnesota	112#/ac
Averaged Results	
Yield Increase	171#/ac
Grower ROI @ \$.40/#	\$65.73/ac



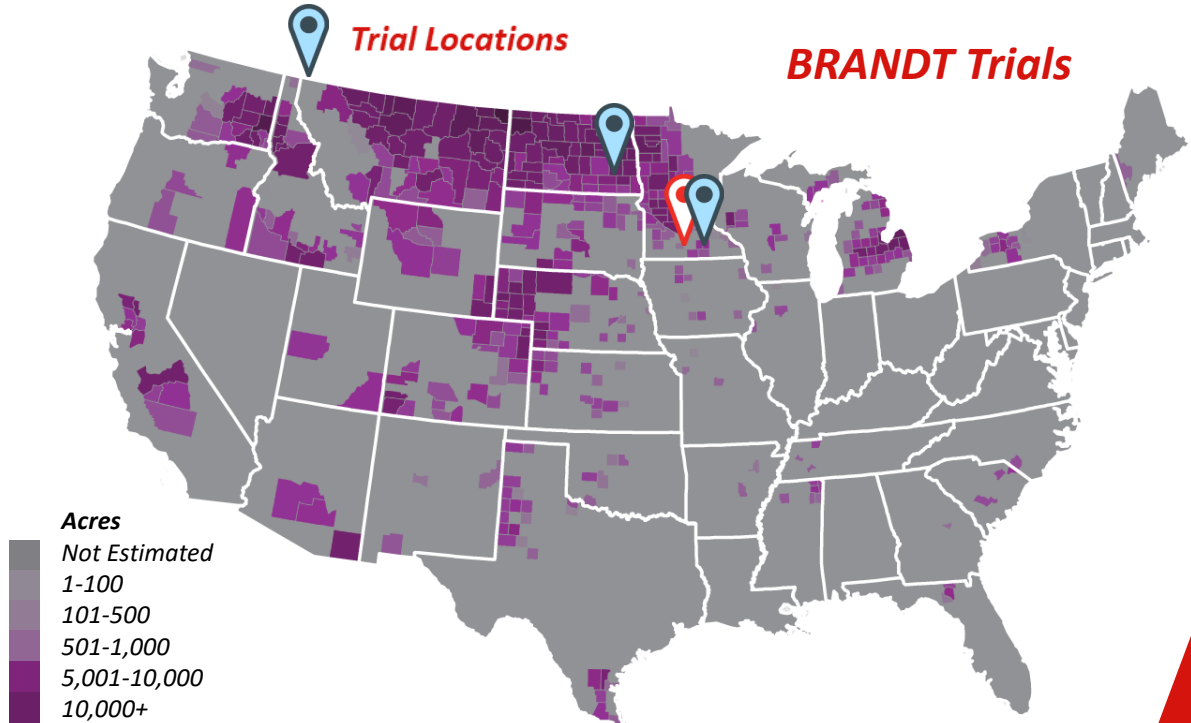
U.S. Department of Agriculture, National Agricultural Statistics Service



Dry Field Bean Trial Locations and Yield Results

Dry Field Bean MicroSURGE + Inceptive

Location	Yield Increase
Agri-Tech Whitewater Wi 2021	341#/ac
Agri-Tech Whitewater Wi 2022	451#/ac
Ayr, North Dakota 2022	270#/ac
Averaged Results	
Yield Increase	354#/ac
Grower ROI @ \$.40/#	\$132.77/ac



U.S. Department of Agriculture, National Agricultural Statistics Service