



Heads Up® Plant Protectants 2021 yield trials

Prepared by Colin Dutcheshen
December 6, 2021
Heads Up Plant Protectants
3002 Millar Ave
Saskatoon, SK
S7K 5X9

NON-GMO Soybean Variety Trials 2021

Varieties: HC-02 and HC-901

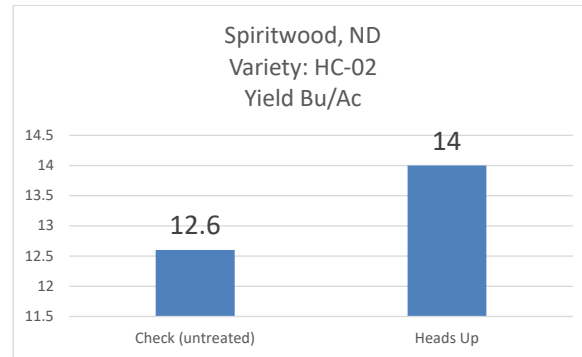
Goal: To evaluate Heads Up® Seed Treatment in two varieties of Non-GMO soybeans.

Notes:

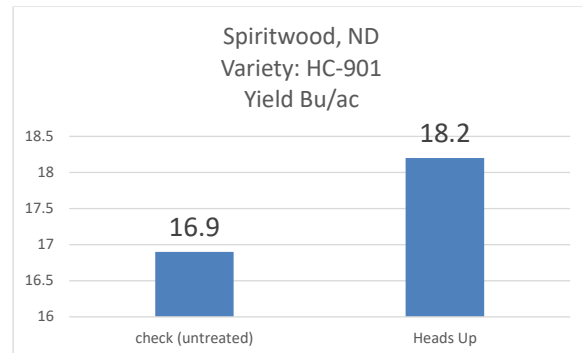
-Much of North Dakota experienced extreme drought in 2021 hence low yields

-Variety HC-901 is a small natto type. Variety HC- 02 is more of a general use soybean for multiple food applications

-Trial coordinated by Agassiz Seeds and conducted by HC International Inc.

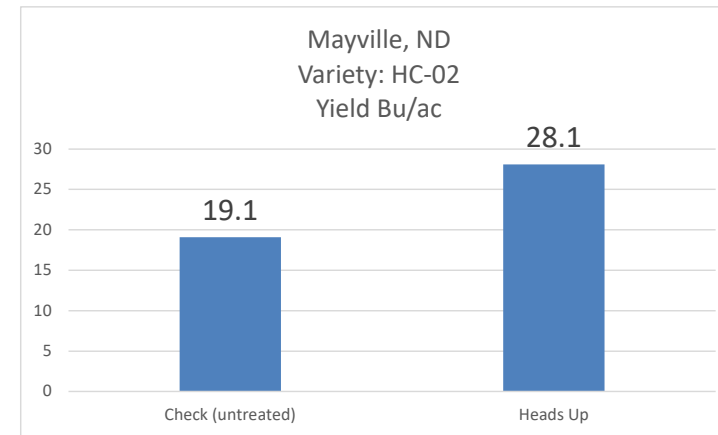


Yield advantage of Heads Up® +1.4 bu/ac over check

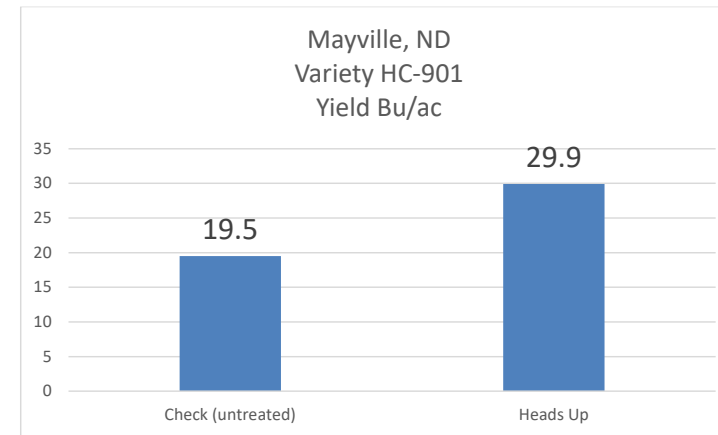


Yield advantage of Heads Up® +1.3 bu/ac over check

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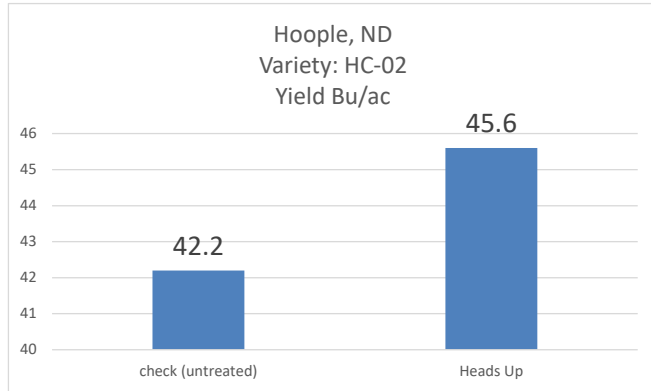


Yield advantage of Heads Up® +9 bu/ac over check

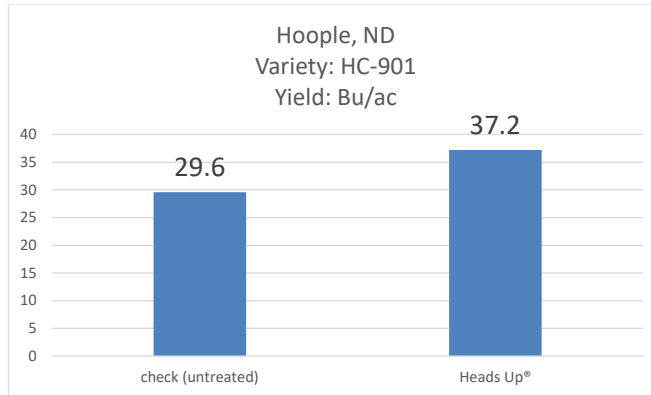


Yield advantage of Heads Up® +10.4 bu/ac over check

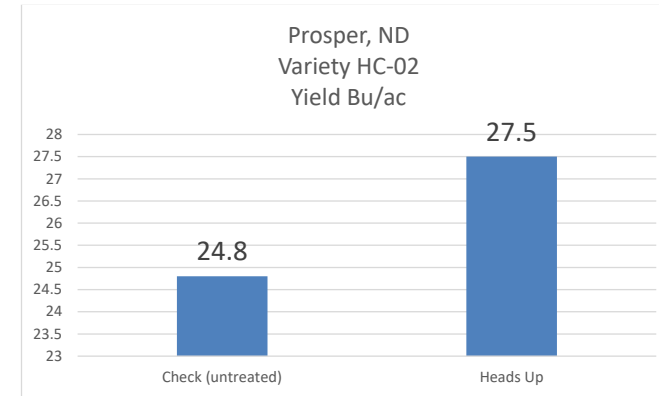
Heads Up Plant Protectants



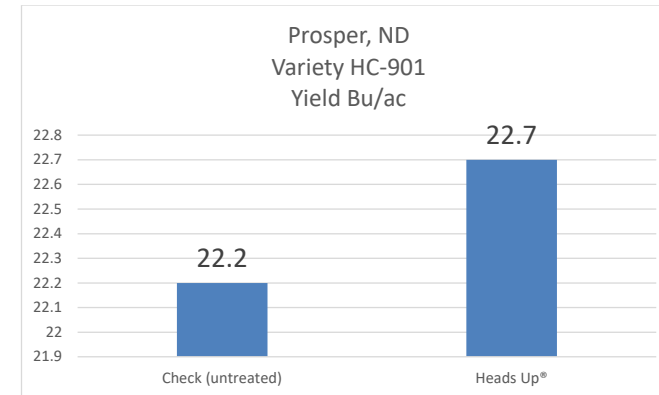
Yield advantage of Heads Up® +3.4 bu/ac over check



Yield advantage of Heads Up® +7.6 bu/ac over check



Yield advantage of Heads Up® +2.7 bu/ac over check



Yield advantage of Heads Up® +0.5 bu/ac over check

Summary

Variety HC-02: Heads Up averaged +4.1 bu/a better than untreated

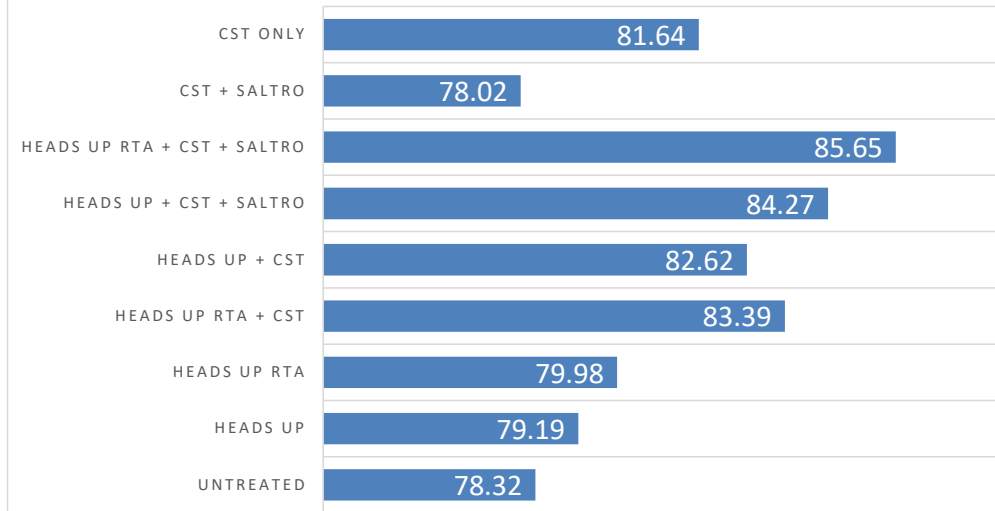
Variety HC-901: Heads Up averaged +4.9 bu/ac better than untreated



“Below is the results of the trial we did in SW MN. This was a dry year so there was very little white mold present. The hills burnt off pretty bad so I narrowed the strip down to this small area.”

- Nutrien, SD
- Yield advantage of Heads Up® +1.9 bu/ac

**2021 HEADS UP SEED TREATMENT TRIALS
AGRI-TECH CONSULTING
WHITEWATER, WI (YIELD BU/AC)**



Trial conducted by Agri-Tech Consulting, Whitewater, WI 2021.

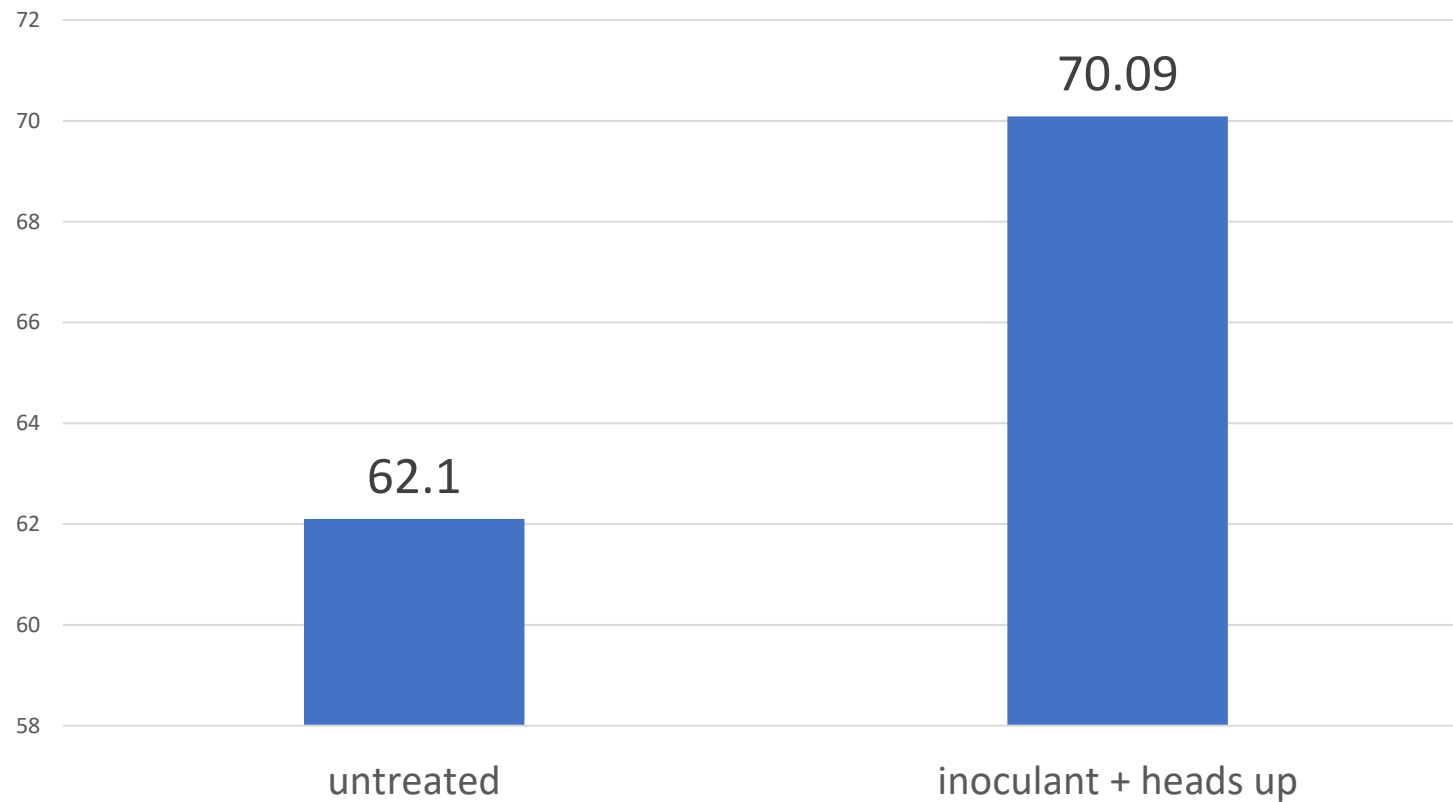
CST used was CruiserMaxx®

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Heads Up® and Heads Up® RTA are registered trademarks of Heads Up Plant Protectants, Inc.

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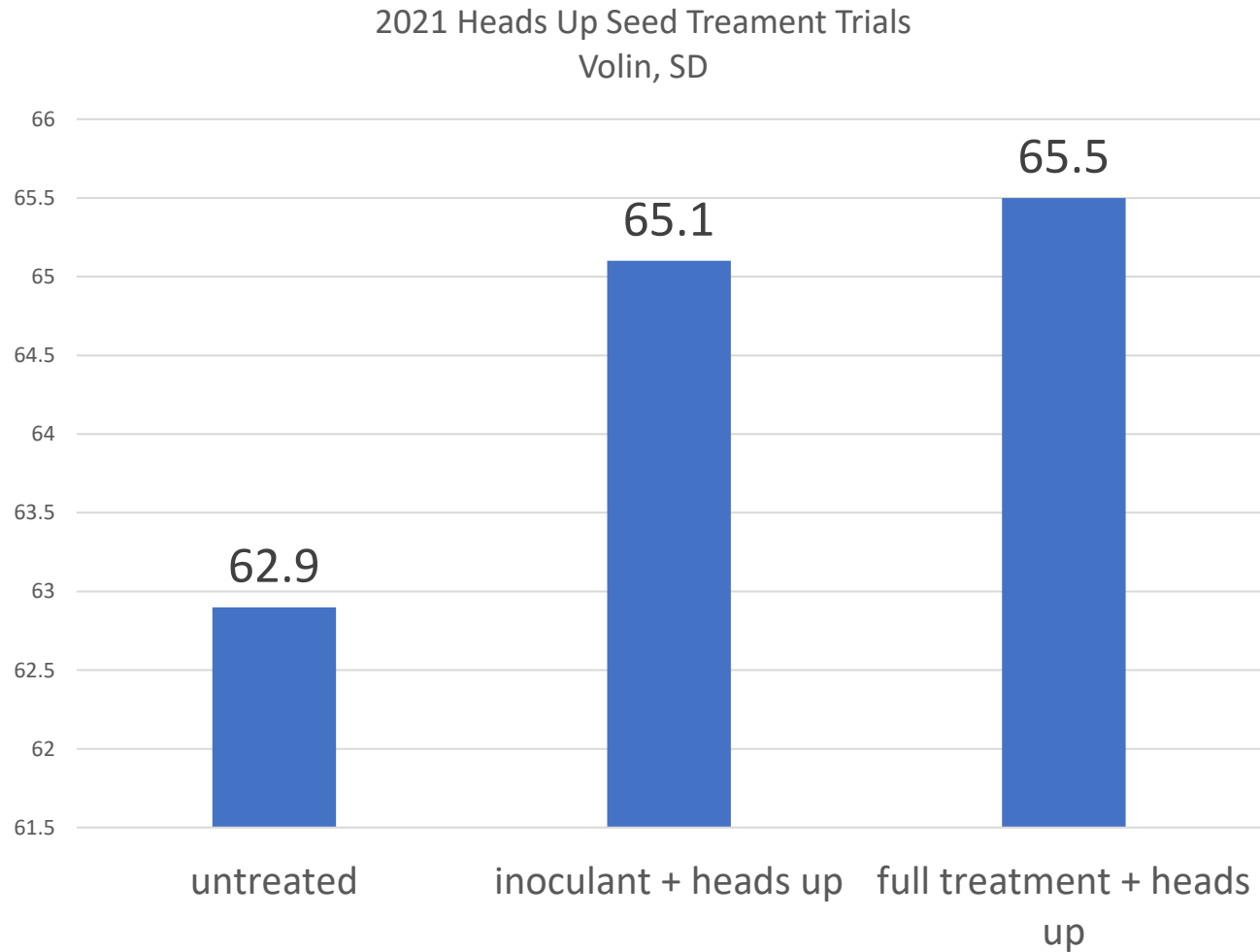
2021 Heads Up Seed Treatment Trial Volin, SD



Trial Coordinator: Tyler Carda, Southeast Ag Supply, Volin, SD

Variety: Pioneer 31T64E

Yield advantage of Heads Up® + Inoculant --- 7.9 bu/ac



Trial Coordinator – Tyler Carda, Southeast Ag Supply, Volin, SD

Variety: Pioneer 26T23E

*Full treatment (Gaucho, Lumisena, PPST2030, Evergol)

Yield advantage of Heads Up® + Inoculant -----2.2 bu/ac

HeadsUp: 2021 SDS seed treatments study "Protocol#2" summary table, Hinds Research Farm, Ames, IA

Tr	Treatments	StCt1	StCt2	SS-SDS Inc%	Vigor*	SDS-DX1	SDS-DX2	SDS-DX3	YLD Bu/Ac	YLD Mt/Ha
1	Heads up RTA @0.5 fl oz/cwt + cst @4.8 oz/cwt	536.67a	545.33	0.00b	7.66a	0.01a	0.06b	0.10b	47.21a	3.17a
2	Heads up RTA @0.5 fl oz/cwt + cst @4.8 oz/cwt + Ceramax @1.23 oz/cwt	534.33a	524.00	0.00b	8.00a	0.00a	0.00b	0.00b	48.28a	3.24a
3	Ceramax @1.23 oz/cwt + cst @4.8 oz/cwt	535.67a	536.00	0.00b	7.66a	0.06a	0.13ba	0.21ba	44.64a	3.00a
4	Cst @4.8 oz/cwt + saltro @1.52 oz/cwt	520.33a	527.33	0.00b	8.00a	0.00a	0.00b	0.00b	48.98a	3.29a
5	Cst @4.8 oz/cwt only	523.67a	519.33	0.19a	8.33a	0.11a	0.23a	0.36a	45.25a	3.04a

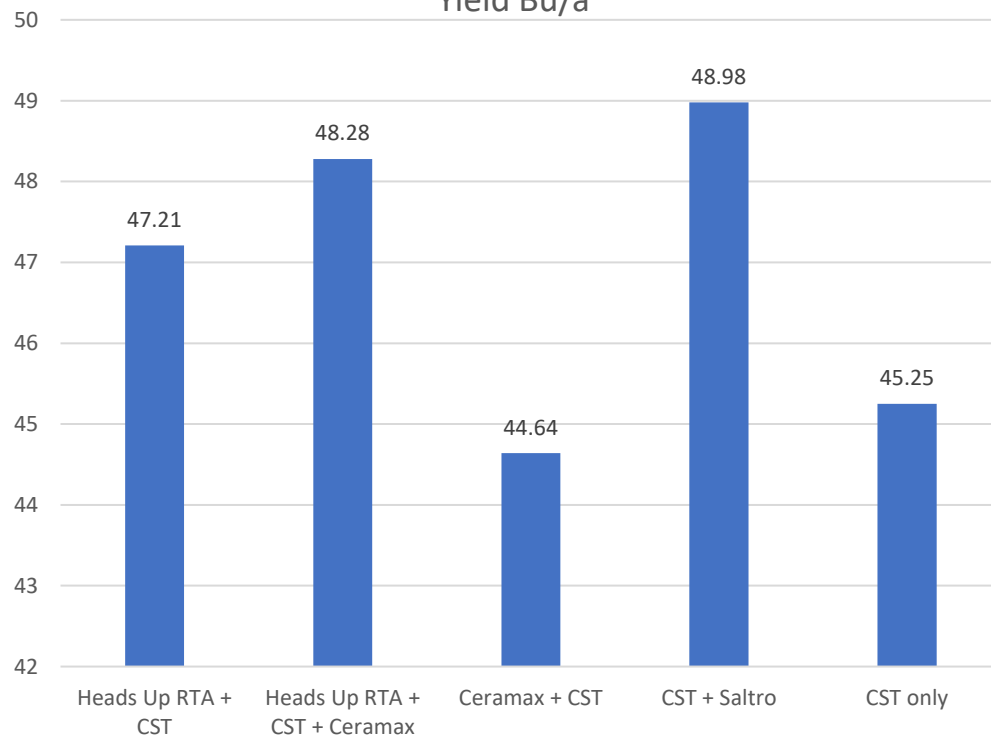
StCt= Stand counts per plot; SS-SDS Inc%= Seedling stage SDS incidence%, Vigor=on 1-9 scale, where 1 is poor and 9 is excellent, SDS-DX= SDS disease index;

Note: CWT= 100 lb seed; 100 lb = 45.3592 kg, 1 fl oz = 29.57 ml

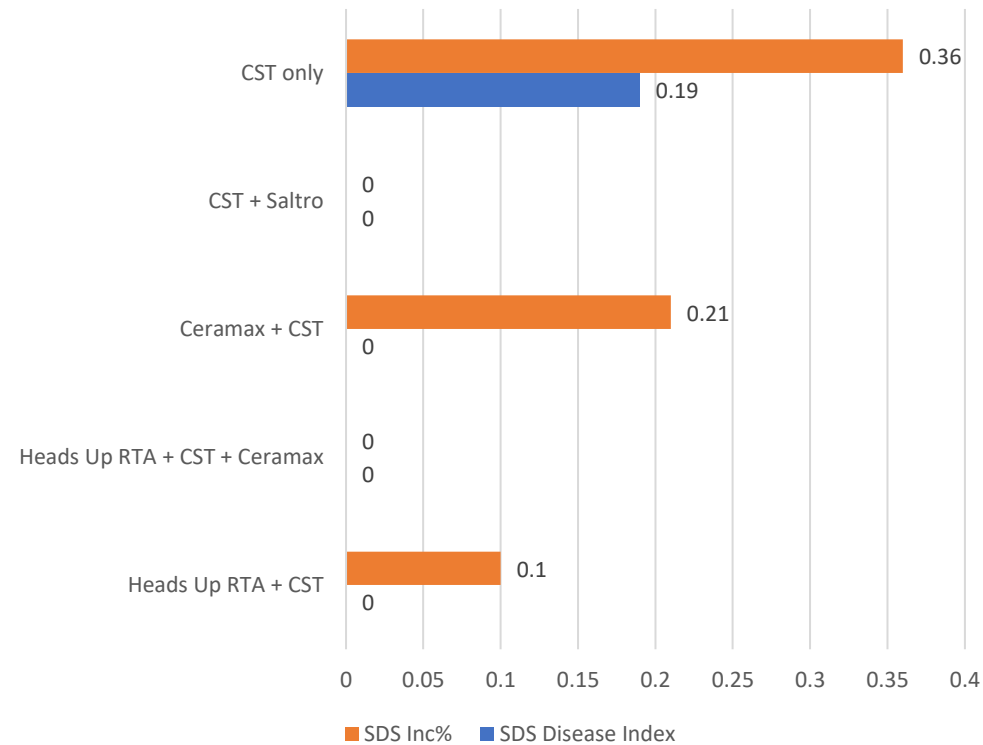
Results are average of 3 replications each with a plot size of 10 ft wide x 17.5 ft long in a 30-inch row spacing.

Means within column followed by the same letter(s) are not significantly different from each other at 5% level of significance ($P < 0.05$).

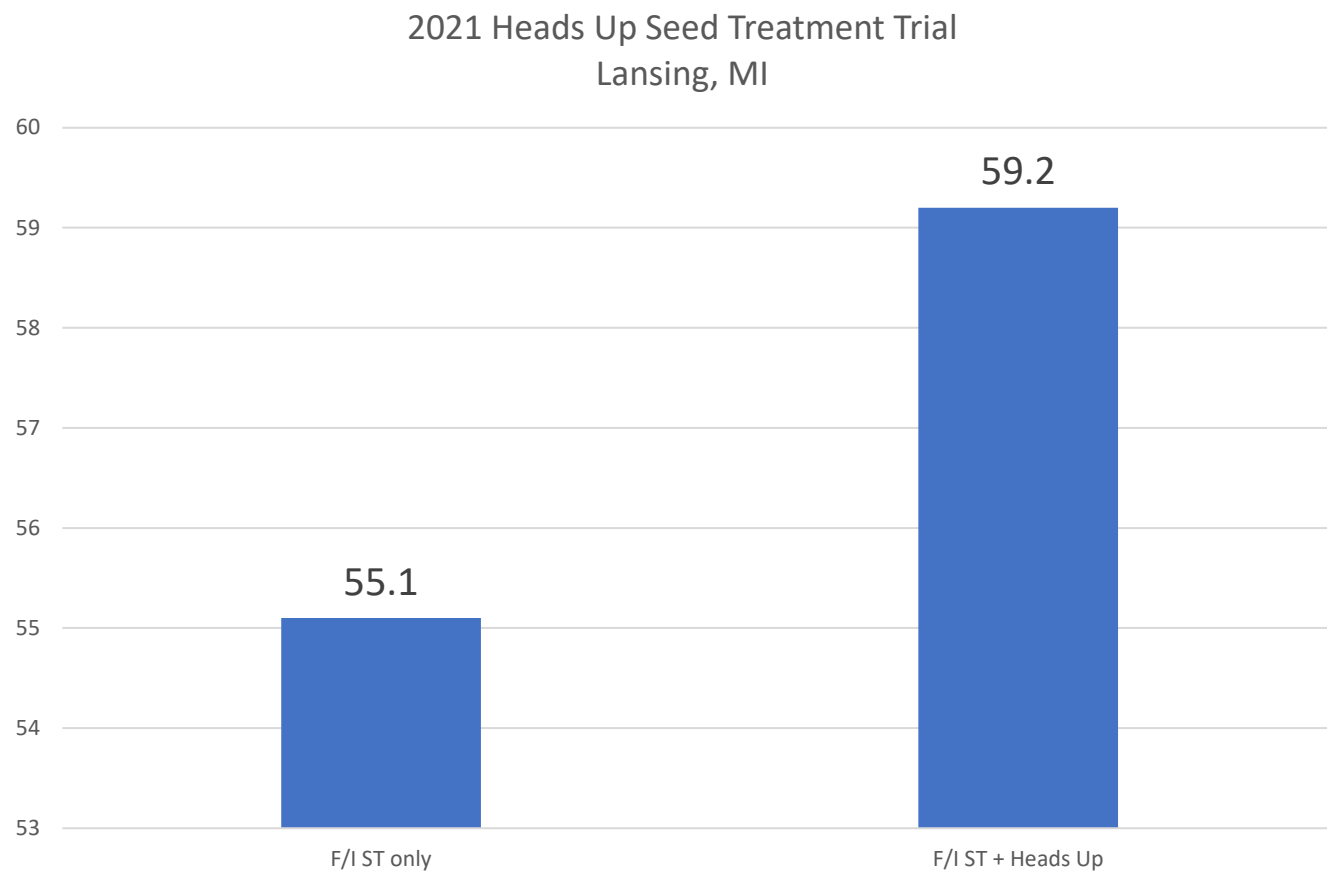
2021 SDS Seed Treatment Study - ISU, SS. Navi -
Yield Bu/a



2021 SDS Seed Treatment Study - ISU, S.S. Navi



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Saltro® is trademark of Syngenta

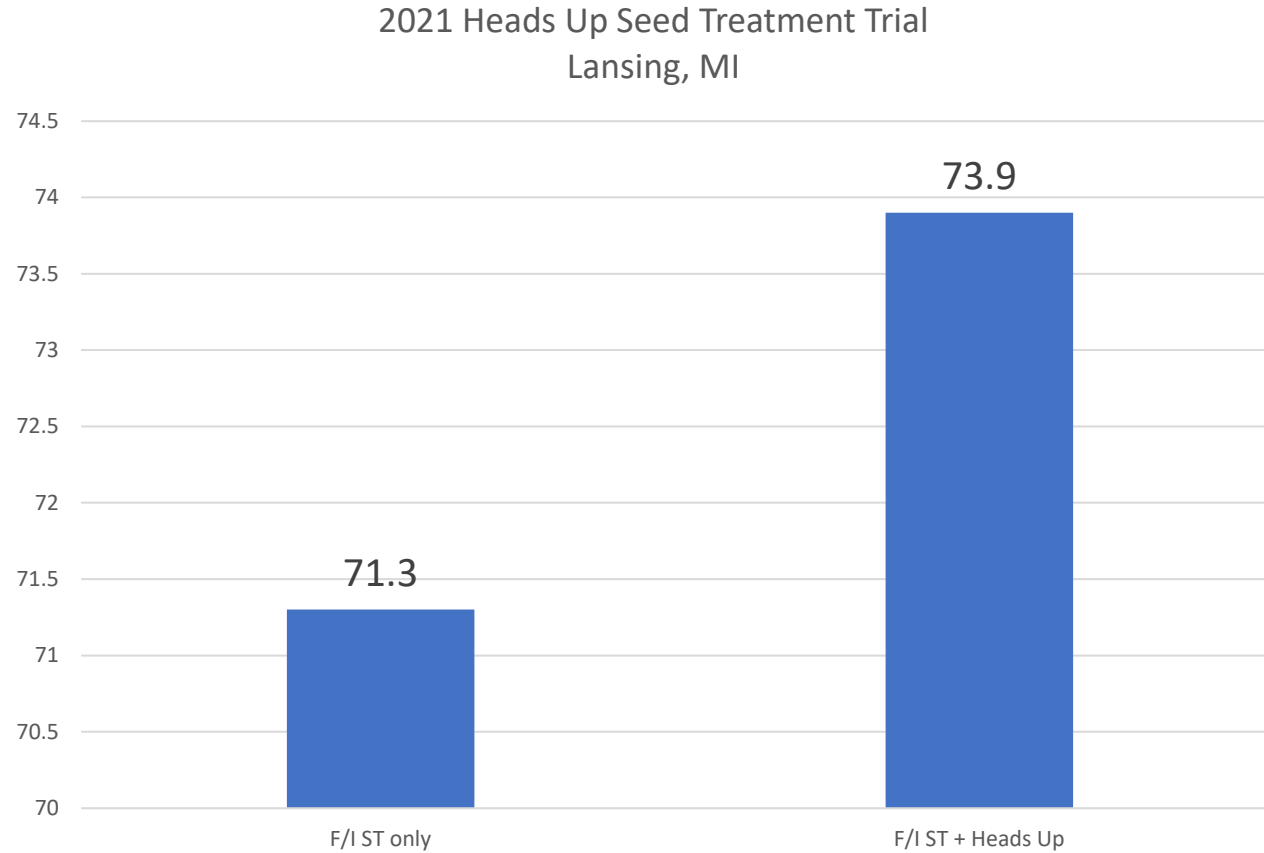


Trial Conductor: Justin Schneider, LG Seeds

Notes: varety 2025

-Field had heavy white mold pressure

Yield advantage of Heads Up® +4.1 bu/a



Trial Coordinator: Justin Schneider, LG Seeds

Field notes: variety 2025

Field had slightly above avg. white mold pressure

Yield advantage of Heads Up® +2.6 bu/ac

Testimonial

- I had two different farms where I ran heads up trials. Both farms had white mold and one also had areas of sds. From my observations there was a visual difference in white mold pressure between the heads up and non. The soys treated with heads up still showed some white mold pressure but I would say it was 1/3 to 1/2 less pressure. In heavy white mold areas of the field the yield difference was 3+ bu/ac, advantage heads up. When I look at whole field differences from both farms where disease pressure varies it was 1.8bu/ac, advantage heads up.

SDS was observed on the untreated, I struggled to find sds where heads up was applied

Justin S, Michigan

Testimonial

We had a lot of white mold pressure in our area this year and the soybeans treated with Heads Up definitely stood out. We saw a 7-10bu/ac yield advantage in our trials with using the Heads Up product and our security guard treatment together.

Ty

Wayne, NE

Testimonial

- “We have been using Heads Up for two years, and continue to use it as we have seen it benefit our yields and better overall plant health”
-Cheney V, Pipestone, MN

What is Heads Up® Seed Treatment?

- Heads Up® is a biological seed treatment derived from naturally occurring plant extracted biochemicals
- The product is manufactured in North America, with head offices in Saskatchewan, Canada
- Additional offices in Eagan, MN, Quad Cities, IL and Lansing, MI



Manufacturing Facility



Industrial Spray Dryer



Extraction Tank

How does Heads Up[®] work?

- While not a fungicide, Heads Up[®] is a combination of plant extracted chemistries that are active in inducing disease resistance in several crops.

What crops can Heads Up[®] mitigate the risks of disease?

- Heads Up[®] is EPA registered for use on the following crops: Soybeans, Corn, Wheat, Peas, Tomatoes, Chickpeas, Edible Beans, other Beans.
- Most commonly used as a preventative step to help suppress the following diseases:

Soybeans: Sclerotinia sclerotiorum (white mold), rhizoctonia (root rot), and fusarium virguliforme (sudden death syndrome)

Edible Beans: Sclerotinia sclerotiorum (white mold), rhizoctonia (root rot)

Potatoes: Rhizoctonia Black Scurf

How is Heads Up[®] Applied?

- Heads Up[®] is applied to your seed as a seed treatment by your local seed dealer or ag retailer.
- The product typically is applied through seed treating equipment, and is compatible with other treatments/inoculants.
- The product can also be used for Organic Production and is OMRI[™] registered



Other Benefits

- Heads Up[®] is an effective tool and the only EPA registered seed treatment to suppress sclerotinia white mold and SDS in soybeans.
- The product is naturally derived (environmentally safe as it does not contain synthetic chemicals)
- Can be applied well in advance of planting (stable shelf life and does not contain living organisms)
- Can be used in combination with traditional chemistries and other biologicals for multiple modes of action to fight yield robbing disease pathogens

What can Heads Up[®] offer for White Mold protection?

Strip Trial Wisconsin 2019

Brown patches attributed to white mold

Yield advantage +7.7 bu/a when Heads Up[®] was used in addition to standard fungicide/insecticide seed treatments



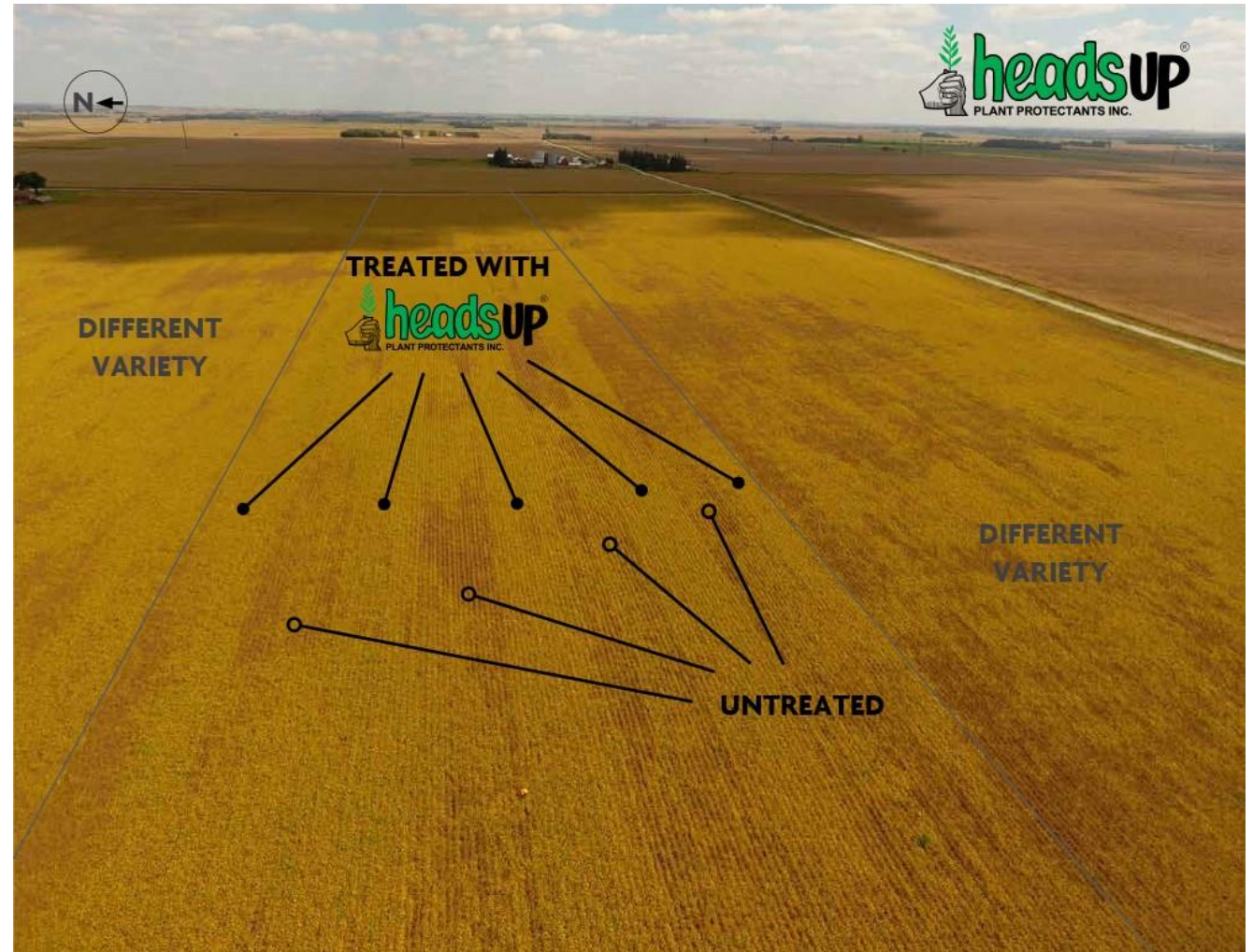
What can Heads Up[®] offer for Soybean Sudden Death Syndrome Protection?

Soybean Strip Trial 2018, Clear lake, IA.

Brown patches in field depicts symptoms of Soybean SDS.

Field split untreated (naked seed) vs treated with Heads Up[®] Seed Treatment only

Yield advantage of Heads Up[®] +3.9 bu/a



Other Benefits

- Improved Plant health

