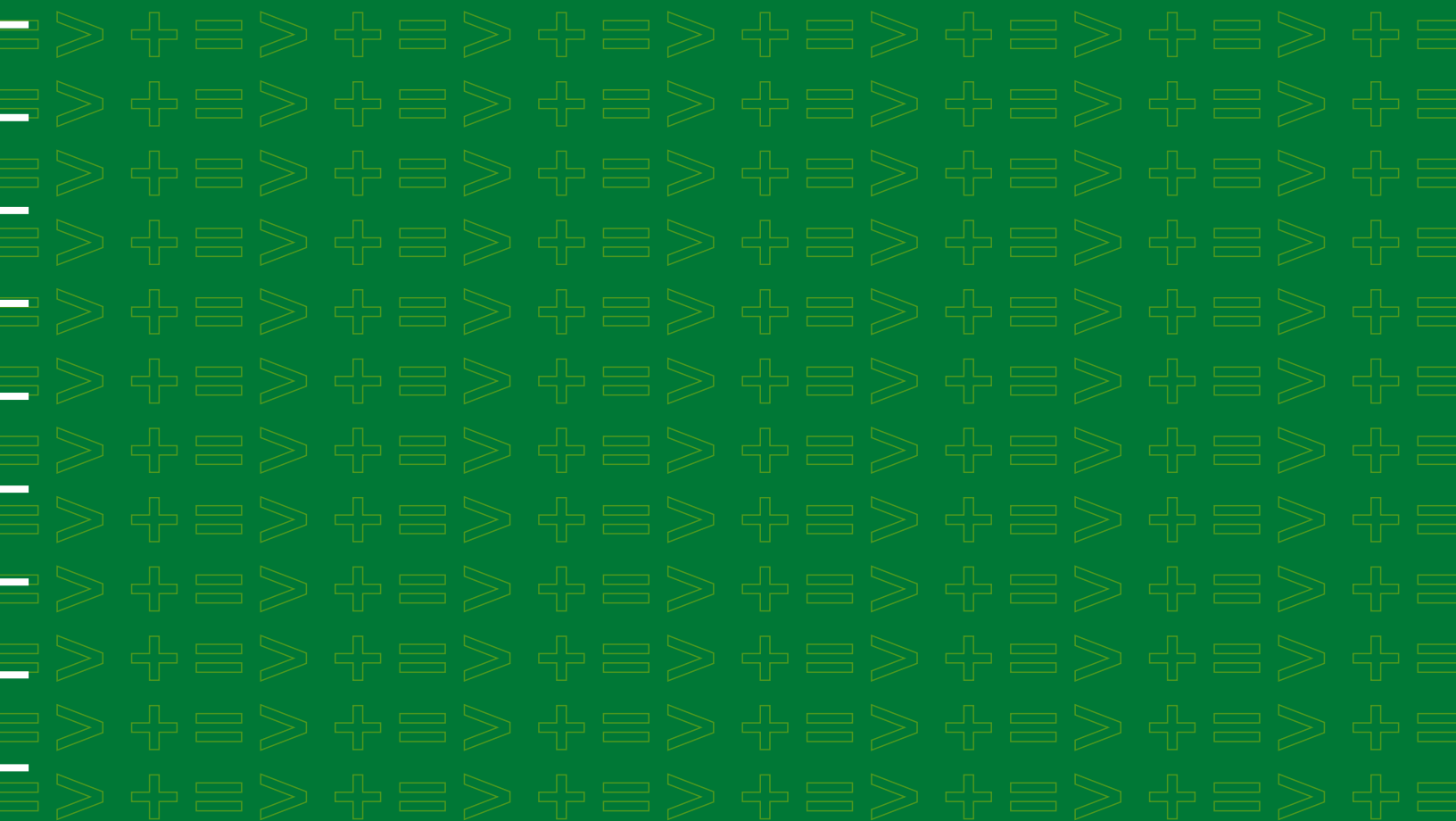




**Plus Equals More.**



**Business of Biologicals**  
**Vault® IP Plus Seed Treatment**

 **BASF**

We create chemistry



At BASF Agricultural Solutions, we are proud to bring growers agronomic solutions across the full spectrum of crop needs from seed to bin. And while our history may be in chemistry, we have leveraged that expertise and experience, and our high standards to build a world-class biological offering focused on grower's needs right here in the United States.

This business of biologicals isn't an easy one. We are literally working with living organisms and substances derived from nature. To produce these in a controlled environment, and ensure they stay fresh and active all the way to the seed treater, the grower, and then into the ground is no simple feat. That's why having a company like BASF behind these products makes a difference.

Today, we offer a variety of seed-applied biologicals that give growers greater choice in the way they provide an optimal growing environment, and control pests and diseases. From soybeans to peas and lentils to peanuts, growers across North America are benefiting from biological seed treatments. They have become an important part of sustainable farming practices by improving soil health and nutrient use efficiency.

The 2023 season is upon us, and we look forward to delivering the highest quality, freshest, most active biologicals that will help growers maximize yield potential and do the *biggest job on Earth*.

**Martin Horrocks**  
**BASF Agricultural Solutions**  
**Director, Seed Treatment North America**

## Did you know...

1. Inoculating your soybean seed yearly with healthy, active rhizobia reduces the risk of plants not having enough nitrogen.
2. Fresh, active rhizobia bacteria create healthy nodules for maximum nitrogen fixation and healthy, vigorous roots that can improve water and nutrient uptake.
3. Biological seed treatments have the potential to boost emergence, early-season growth, and yield potential in soybeans.
4. A robust inoculant seed treatment offers soybean growers an average yield increase of more than two bushels per acre over a base fungicide alone.
5. BASF Agricultural Solutions has been the leading global provider of biological seed treatments since 2013.



## True or false?

1. Rhizobia in the soil helps soybeans create nodules on the roots to produce nitrogen.
2. Soybean crops require a lot of oxygen.
3. It's important to look for a seed treatment with a high application rate.
4. *Fusarium* and *Rhizoctonia* are two major fungal pathogens that can cause root rot.
5. You only need to inoculate your soybeans once every few years.





Plus Equals More.

# BASF Agricultural Solutions Report Card

**Vault® IP Plus**  
Seed Treatment

Name	Grade	Teacher	School Year	Term	Date
Vault IP Plus	12th Grade	BASF Agricultural Solutions	2022-23	Second Semester	January 2023

## Soybean Liquid Inoculant Comparison

Products	Rhizobia Strain <sup>1</sup>	Product Contains Secondary Biological Active	In-Pack Rhizobia Count Claim	Meets Actual In-Pack Rhizobia Count Claim <sup>2</sup>	On-Seed Survival Claim	Meets Actual On-Seed Survival Claim <sup>2</sup>	Application Rate per CWT of Seed
<b>Vault® IP Plus</b>	A	✓	1 Season	✓	60	✓	1.1 fl. oz.
<b>Optimize® XC</b>	B	✗ <sup>**</sup>	1 Season	✓	120	✗ <sup>**</sup>	1.5 fl. oz.
<b>TagTeam® LCO XC</b>	B	✓	1 Season	✓	120	✗ <sup>**</sup>	1.5 fl. oz.
<b>Preside CL®</b>	D	✗ <sup>**</sup>	1 Season	✗ <sup>**</sup>	N/A	✗ <sup>**</sup>	2.5 fl. oz.
<b>Primo Ultra</b>	E	✗ <sup>**</sup>	1 Season	✗ <sup>**</sup>	120	✗ <sup>**</sup>	1.5 fl. oz.
<b>LalFix® Duo SL Proyield</b>	C	✓	1 Season	✓	90	✗ <sup>**</sup>	1.5 fl. oz.

<sup>1</sup> Same letters indicate same strain(s) as identified by genetic testing. Letter identifier is not an indicator of anything other than relative strain identity.

<sup>2</sup> A single unit for each inoculant product was purchased from the marketplace and stored under cool temperature conditions (per common label recommendations) until applied to the seed at labelled rate (within 1 month of labelled product expiration). Treated seed were stored at 50°F (10°C) for the duration of the on-seed assessment phase. Rhizobial cfu/mL and cfu/seed were both quantified using BASF SOP's whereby generally recognized growth media and serial dilution steps are used to allow visual enumeration of viable rhizobial cells.

A minimum threshold of ≥ 100,000 rhizobia per seed was used to assess stability performance (absence of seed treatment chemistry)

<sup>\*\*</sup> No available published on-seed stability claim but measured on-seed survival was less than 120 days in testing.

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Always read and follow label directions.



# Business of Biologicals Storage Matters

This bladder helps the rhizobia achieve their highest count and the best quality for a longer period.

Fresh rhizobia are stored here.

BASF biofungicides create a biofilm, like glue, that helps improve nutrient uptake at the roots.

Vault® IP Plus seed treatment holds two active biologicals for improved fungicidal activity.

For retailers actively treating soy seed with a premium inoculant, Vault® IP Plus seed treatment is the product of choice for the lowest use rate, highest quality and most consistent performance. Vault IP Plus seed treatment's advanced bladder helps the rhizobia in the inoculant achieve their highest count and maintain quality longer. This specific bladder is innovative and exclusive to BASF.

This innovative bladder, exclusive to BASF, is a unique patented design that delivers improved gaseous exchange. Storing rhizobia in this patented bladder ensures the highest quality rhizobia with improved survivability, making those rhizobia more robust, viable and effective at nodulation/nitrogen fixation. For retailers actively treating soy seed with a premium inoculant, Vault IP Plus seed treatment is the product of choice for the lowest use rate, highest quality rhizobia and most consistent performance.



To learn more about Vault® IP Plus seed treatment, visit BASF's [website](#) or [schedule an interview](#) with a BASF Technical Service Representative today!

