



# SEED APPLIED TECHNOLOGIES



  
**PRECISION**<sup>™</sup>  
LABORATORIES

Results. Expect it.<sup>®</sup>



# SEED APPLIED TECHNOLOGIES

At Precision Laboratories, innovation isn't a buzzword – it's built into every product we design. Our products are university and field-tested to ensure biological performance and optimum value. Our specialized chemistries for plants, seeds, soil and water produce high-yielding crops and quality turfgrass.

**INNOVATIVE, SENSIBLE,  
EFFECTIVE PRODUCTS.**

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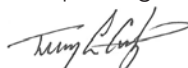
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## FROM OUR PRESIDENT

Thank you for taking the time to consider Precision's portfolio of seed applied technologies. Your assessment of the results these products deliver is the true measurement of their value. If you are a customer today, I trust you've seen that value. If you're new to Precision, I look forward to our demonstration of value to you.

Our daily activities focus on the three priorities of customer, employee and shareholder. Core values demonstrated by each member of the Precision team are identified in this graphic, those being an obsession about our customers, hard work as a team, a spirit of constantly learning and improving and delivering results, which you can expect.

  
Terry Culp  
President



## ADDING VALUE



### TECHNICAL EXPERTISE

- Collaboration with top researchers have validated claims of superior performance and quality
- Laboratory capabilities and resources to help you solve everyday problems
- Technical training to give your sales team the confidence to sell more effectively



### INNOVATION

- Basic manufacturing to build solutions from the molecule to completion
- Developing breakthrough products in the areas of:
  - Polymers
  - Pigments & dyes
  - Seed applied nutrition
  - Water Management



### RESULTS. EXPECT IT.

- Dedicated sales support
- Customized marketing support for your sales team

# THE BENEFITS OF SEED-APPLIED NUTRITION

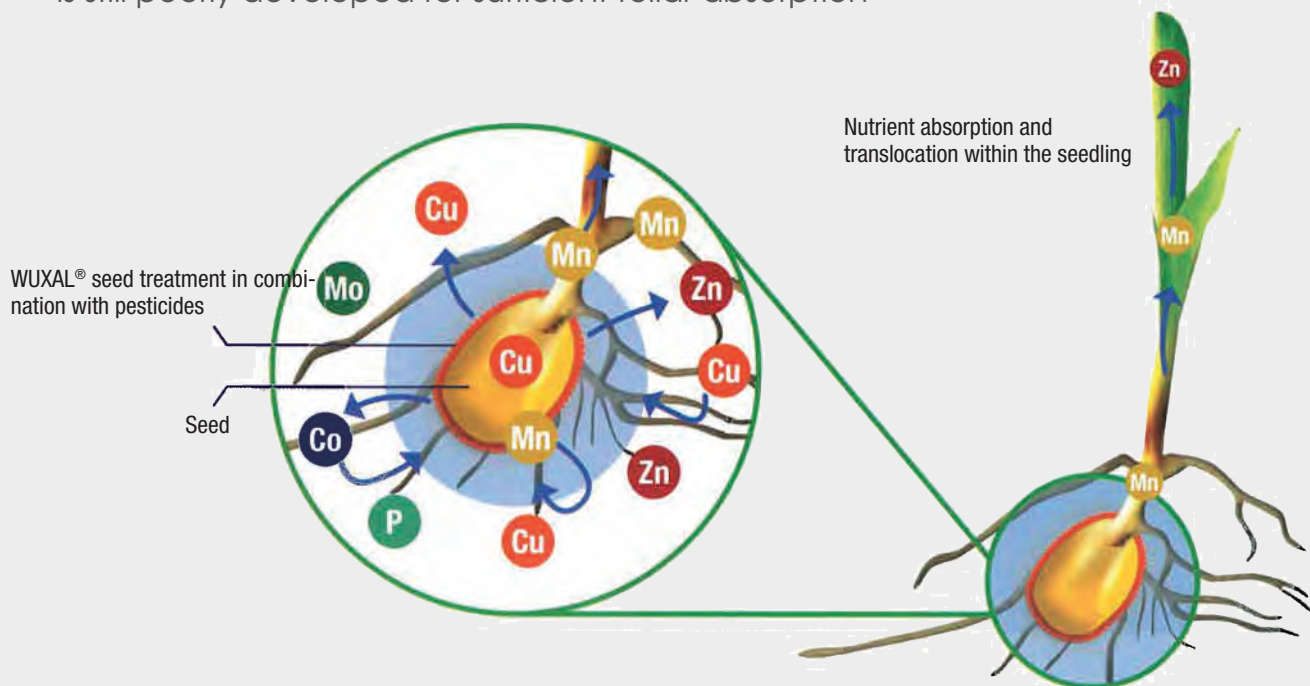


The most efficient means of supplying early micronutrient requirements of emerging crops is seed-applied nutrition. Seeds naturally have nutrient reserves, yet this often is not at optimal levels and could result in underdeveloped root systems. The early demand for enhanced nutrition may become critical under dry, drenched or cold soil conditions.

As soon as the seed starts to soak up water, the nutrient seed coat will slowly diffuse into the surrounding area around the seed. The nutrients will be rapidly absorbed by the developing root system. Other fractions of the nutrient seed coat will also be absorbed into the seed and will stimulate germination. As a result, the young seedlings become more vigorous and can develop more rapidly providing the plant a good start.

## ***Nutrient seed treatment:***

- Boosts early growth
- Improves health and vigor of seedlings
- Creates uniform plant emergence
- Better root development
- Enhanced crop resistance to herbicide stress
- Improved water and nutrient supply to the plant
- Shows higher efficiency than any early foliar spray when the leaf surface is still poorly developed for sufficient foliar absorption





**WUXAL® TERIOS ZN+ SEED TREATMENT**

A nutrient suspension for seed treatment with special emphasis on zinc. The composition of Wuxal Terios Zn+ meets the specific requirements of cereals, especially for crops with higher zinc requirements like rice and corn, or when growing on soils with low zinc availability. Wuxal Terios Zn+ suspension creates an even distribution on the seed surface and sticks well on the seeds. It can be used in combination with other seed treatments like fungicides and insecticides.

Use Rates*		Package Size	Product Weight
Rice Seed, Dry	1.50 fl. oz./cwt	2 x 2 gal 30 gal	11.43 lbs./gal.
Corn	2.0 fl. oz./cwt		
Grain Sorghum (milo)	2.0 fl. oz./cwt		

\*Other seed types listed on label



**WUXAL® TERIOS MN+ SEED TREATMENT**

This seed-applied nutrition for soybeans is immediately available to the seedling, regardless of soil moisture and temperature conditions. It contains fully-chelated manganese (Mn) to ensure availability to the plant.

Crop*	Dosage Rate	Water Dilution	Slurry Treatment Rate	Package Size	Product Weight
Soybeans	1.50 fl. oz./cwt	1.50 fl. oz./cwt	3.00 fl. oz./cwt	2 x 2 gal 30 gal	11.18 lbs./gal

\*Other seed types listed on label



**WUXAL® TERIOS SEED TREATMENT**

A nutrient suspension for seed treatment with nitrogen, phosphorus, copper, manganese, molybdenum and zinc. The composition of Wuxal Terios meets the specific requirements of cereals in the early stages of development for improved seedling emergency and early plant vigor. Wuxal Terios is especially beneficial to seedling establishment and growth in stressful environments. Wuxal Terios suspension creates an even distribution on the seed surface and sticks well on the seeds. It can be used in combination with other seed treatments like fungicides and insecticides.

Crop*	Dosage Rate	Water Dilution	Slurry Treatment Rate	Package Size	Product Weight
Wheat	2.30 fl. oz./cwt	2.30 fl. oz./cwt	4.60 fl. oz./cwt	2 x 2 gal 30 gal	11.84 lbs./gal

\*Other small grains listed on label

**SEED ENHANCEMENTS**



**HYDRALINK™  
SEED-APPLIED WATER MANAGEMENT**

A **seed-applied** water management product formulated to provide an optimal moisture environment around the seed for improved germination and emergence, stand establishment and yield.

Use Rates	Package Size	Product Weight
<b>Corn:</b> 1.0 – 2.0 fl. oz. per 100 pounds of seed (0.5 – 1.0 fl. oz. per unit of seed)	2 x 2.5 gal	9.35 lbs per gal
<b>Soybean:</b> 1.0 – 1.5 fl. oz. per 100 pounds of seed (0.5 – 1.0 fl. oz. per unit of seed)		



**PRISM™ - SCP2020  
SEED COATING POLYMER**

PRISM SCP2020 is a seed coating polymer designed for maximum reduction of dust-off and rub-off of active, improved seed flow and plantability. The product can be applied with all seed treatment pesticides or other seed-applied products through commercial seed-treating equipment.

Use Rates	Package Size	Product Weight
Field or seed corn - Use 0.5–1.5 mg /kernel or 1.2–3.5 fl oz per 80,000 kernel bag (assumes of 1,600 seeds/lb). Specific rate dependent on rate of pesticide applied. Soybean - 0.5-1.0 fl oz per 100 lb of seed Cereals - 1.0-3.0 fl oz per 100 lb of seed Use on all other seed types at a rate of 1-6fl oz/cwt. Specific rate will vary based on seed type and other products applied	2 x 2.5 gal	9.43 lbs per gal

**NOTES**

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### PRISM™ - SCARLET SEED COLORANT

Specifically formulated to provide unsurpassed color characteristics necessary to enhance seed appearance and create unique identification for treatments and varieties. Available colors are scarlet, azure, violet and emerald.

Colorant Required per 100 lb. (45 kg) of Seed*	Package Size	Product Weight
<b>Large Light Seed*</b> Corn, Soybeans, Wheat, Sorghum	2 x 2.5 gal	9.26 lbs per gal



### PRISM™ - AZURE SEED COLORANT

Specifically formulated to provide unsurpassed color characteristics necessary to enhance seed appearance and create unique identification for treatments and varieties. Available colors are scarlet, azure, violet and emerald.

Colorant Required per 100 lb. (45 kg) of Seed*	Package Size	Product Weight
Corn, Soybeans, Wheat, Sorghum	2 x 2.5 gal	9.5 lbs per gal



### PRISM™ - EMERALD SEED COLORANT

Specifically formulated to provide unsurpassed color characteristics necessary to enhance seed appearance and create unique identification for treatments and varieties. Available colors are scarlet, azure, violet and emerald.

Colorant Required per 100 lb. (45 kg) of Seed*	Package Size	Product Weight
Corn, Soybeans, Wheat, Sorghum	2 x 2.5 gal	9.9 lbs per gal



### PRISM™ - VIOLET SEED COLORANT

Specifically formulated to provide unsurpassed color characteristics necessary to enhance seed appearance and create unique identification for treatments and varieties. Available colors are scarlet, azure, violet and emerald.

Colorant Required per 100 lb. (45 kg) of Seed*	Package Size	Product Weight
Corn, Soybeans, Wheat, Sorghum	2 x 2.5 gal	9.45 lbs per gal

\*Other seed types listed on label

# WUXAL® TERIOS Zn<sup>+</sup>

## TECHNICAL BULLETIN



### **GIVE YOUR CORN THE RIGHT START!**

WUXAL Terios Zn<sup>+</sup> seed-applied nutrition for corn is immediately available to the seedling, regardless of soil moisture and temperature conditions. It contains fully-chelated micronutrients to ensure availability to the plant.

### **BENEFITS:**

- Improved seedling stress resistance
- Enhanced seedling health & vigor
- Expedited root development
- Uniformity of seedling emergence
- Optimization of seeding rates
- Increased yield

### **WUXAL TERIOS Zn<sup>+</sup> GUARANTEED ANALYSIS: 5-0-0**

Total Nitrogen (N) .....	5.000%
3.50% Ammoniacal Nitrogen	
1.50% Urea Nitrogen	
Zinc (Zn) .....	8.000%
4.0% Chelated Zinc (Zn)	
4.0% Zinc Oxide (Zn)	

**PRODUCT USE RATE:** Corn: 2 fl oz/cwt





# WUXAL® TERIOS Zn<sup>+</sup>

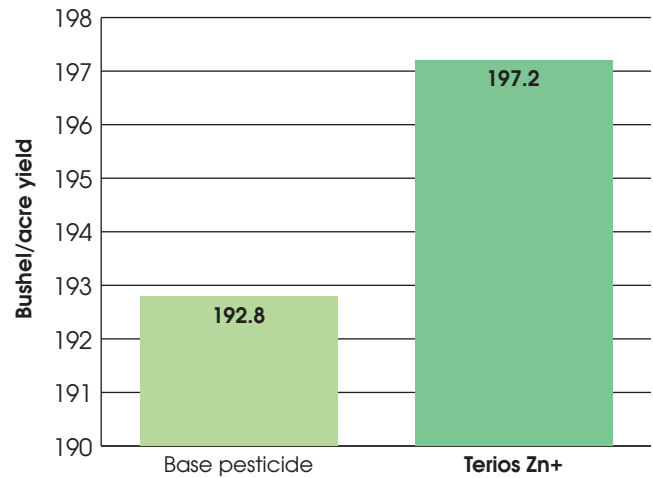
## RESEARCH



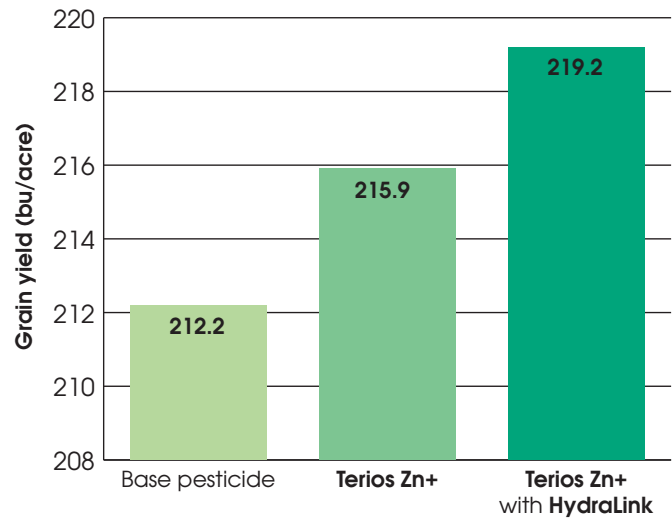
### CONTINUOUS EVALUATIONS ENSURE...

- Low dust-off from in-slurry and overtreat applications
- Seed flow in combination with multiple active ingredients
- Plantability with vacuum and finger pickup planters
- Customer-specific testing capabilities

**2016 – 2020 Terios Zn+ Corn Yield Summary  
Results – IA, IL, NE, WI**



**Terios Zn+ with HydraLink  
Results – IL, NE, WI**



# HYDRALINK™

## SEED-APPLIED WATER MANAGEMENT



**HydraLink™** is a new, innovative seed-applied water management product formulated to provide an optimal moisture environment around the seed for improved germination and emergence, stand establishment and yield. With an improved moisture environment, **HydraLink** also enhances the performance of other seed-applied inputs. It is particularly beneficial when used in combination with seed-applied nutrition products such as Wuxal® Terios Zn<sup>+</sup>, Wuxal Terios Mn<sup>+</sup> and Wuxal Terios CoMo, where it provides for improved nutrient uptake and use.

### HYDRALINK FORMULATION

- Low use rate liquid formulation that provides an optimal moisture environment around the seed
- Easy to handle, low viscosity formulation with good temperature stability
- Excellent slurry compatibility with most seed treatment pesticides and other seed-applied products
- Ideal complement to seed-applied nutrition products on corn and soybeans, as well as rhizobia inoculant on soybeans

### USE RATE

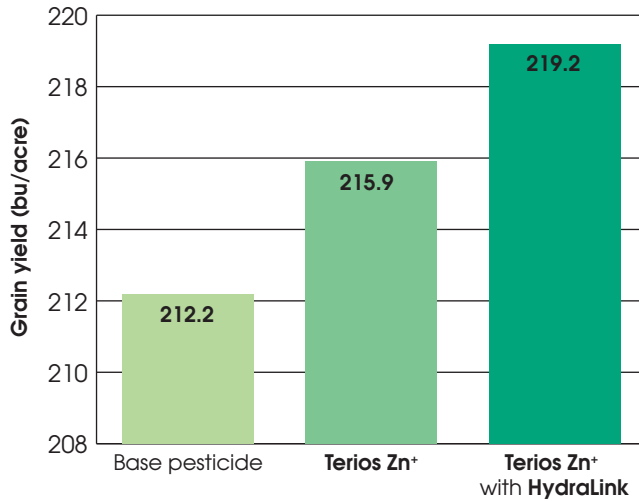
- Corn – 1.0-2.0 fl. oz. per 100 pounds of seed (0.5-1.0 fl. oz. per unit)
- Soybean – 1.0-1.5 fl. oz. per 100 pounds of seed (0.5-1.0 fl. oz. per unit)

### PACKAGING

- 2 x 2.5 gallons per case

# WUXAL® TERIOS ZN<sup>+</sup> and HYDRALINK™

*LINKING UP TO PROVIDE HIGHER CORN YIELDS*

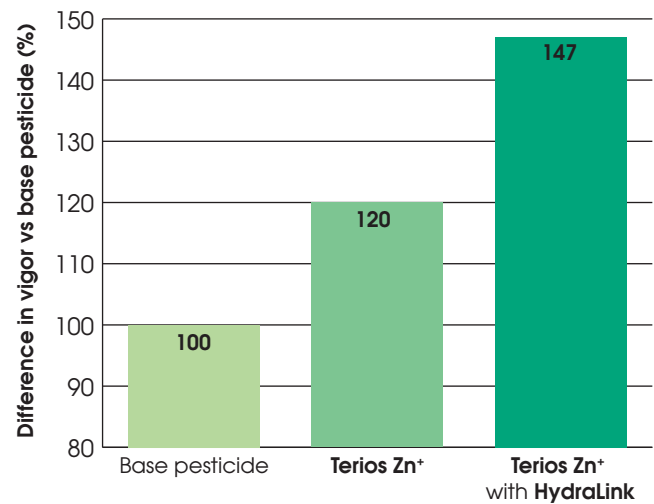


# 7.0

bushel per acre increase with  
**Terios Zn<sup>+</sup> and HydraLink**

# 47%

increase in vigor with  
**Terios Zn<sup>+</sup> and HydraLink**



Control



Terios Zn<sup>+</sup>



Terios Zn<sup>+</sup> and HydraLink

The corn yield and vigor results are the summary of eleven small plot 3rd party research trial locations in IL, NE, and WI.



# PRISM™ SCP2020

## SEED COATING POLYMER



PRISM™ SCP2020 is a new seed coating polymer from Precision Laboratories designed for optimized coverage, maximum reduction of dust-off and retention of active, improved seed flow and plantability.

**Optimized Coverage** for improved seed to seed uniformity and treatment delivery

**Minimum Dust-off** for enhanced operator and environmental safety along with treatment efficacy

**Maximized Retention** to ensure active ingredient is delivered to the field for treatment performance

**Improved Seed Flow** for reduction of treater bridging and flow for application and planting ease

**Enhanced Plantability** for accurate planting for improved stand and yield

### PRODUCT FORMULATION

- Product can be applied with all seed treatment pesticides or other seed-applied products through commercial seed-treating equipment
- Easy to handle formulation with excellent mixing and slurry compatibility
- Formulation designed for minimum treater build-up
- Applies easily without seed stickiness and bridging

### USE RATE

- Field or seed corn - Use 0.5–1.5 mg /kernel or 1.2–3.5 fl oz per 80,000 kernel bag (assumes of 1,600 seeds/lb). Specific rate dependent on rate of pesticide applied.
- Soybean - 0.5-1.0 fl oz per 100 lb of seed
- Cereals - 1.0-3.0 fl oz per 100 lb of seed
- Use on all other seed types at a rate of 1-6 fl oz/cwt. Specific rate will vary based on seed type and other products applied

### DIRECTIONS FOR USE

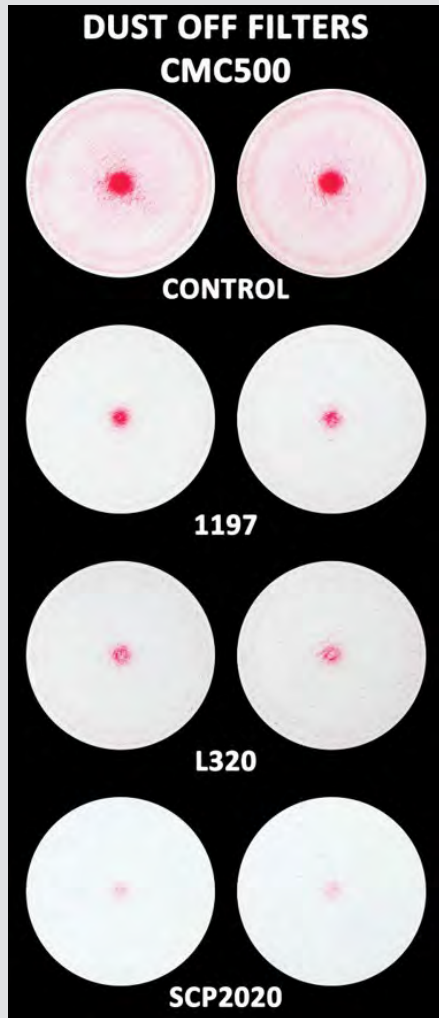
- Determine required amount of each tank mix component based on use rate, seed size, and amount of seed to be treated.
- Ensure all products are uniformly mixed prior to use.
- Fill mix tank with required amount of water followed by PRISM SCP2020, all seed treatment components, and PRISM Seed Colorant.
- Maintain constant agitation throughout entire mixing and treating process.

PRISM is a trademark of Precision Laboratories, LLC

# PRISM™ SCP2020

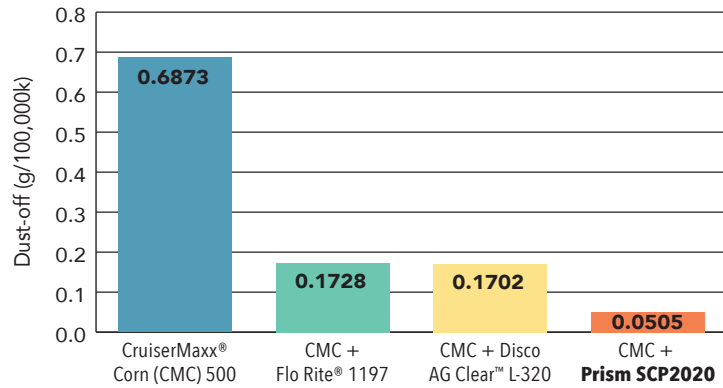
## SEED COATING POLYMER

Below are the Huebach dust filters after dust-off assessment. The reduced color with **SCP2020** reflects the reduction of dust-off compared to competitive polymers.



The Huebach Dustmeter is the international standard equipment for assessing respirable dust-off from seed.

### Dust-off improvement

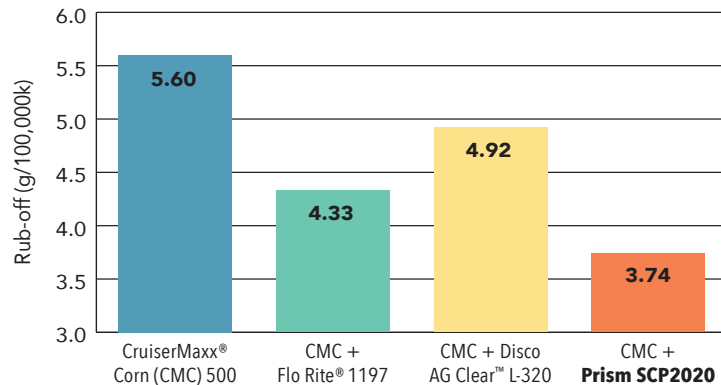


**SCP2020** showed a 71% reduction in dust-off compared to Flo Rite® 1197 and a 70% reduction compared to Disco AG Clear™ L-320.

Reduction of respirable dust with **SCP2020** means less exposure for the seed processor and the grower at the time of planting.

It also minimizes the potential for impact on honeybees.

### Rub-off improvement



**SCP2020** showed a 14% reduction in coating loss compared to Flo Rite® 1197 and a 24% reduction compared to Disco AG Clear™ L-320.

Reduction in non-respirable coating loss means improved active ingredient retention, protecting the seed treatment investment, and maximizing potential performance for the grower.

All products applied at the 0.50 mg/seed rate of Cruiser 5FS (Prism SCP2020, Flo Rite 1197 - 0.92 mg/seed; Disco AG Clear L-320 - 0.65 mg/seed). Seed used for the study was a medium flat with a count of 1,706 seed/lb. Seed coating rub-off or loss evaluated as part of the Huebach dust-off assay. Seeds are tumbled in the drum for 120 seconds, and the contents of the drum are screened through a sieve. Seeds are then weighed to determine loss of coating.

CruiserMaxx® is a registered trademark of Syngenta

Flo Rite® is a registered trademark of BASF

Disco AG Clear L-320 is a trademark of Incotec

PRISM is a trademark of Precision Laboratories, LLC

# THE PROVE PROGRAM

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*Partner Research, Observation, and Validation Experience*

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The **PROVE Program** from Precision Laboratories demonstrates performance and value of new, innovative products for the marketplace.



## **P - Partner**

We collaborate with partners interested in evaluating new technologies that will shape the future of the industry.



## **R - Research**

Our efforts include large-scale, real-world applications, along with small-plot experiments that allow us to closely examine product performance.



## **O - Observe**

The trial observations allow us to demonstrate that our products are innovative, sensible and effective for our end users.



## **V - Validate**

Members of our Product Management and Marketing Team work closely with our PROVE Program partners to validate performance, fit and return on investment.



## **E - Experience**

The PROVE Program provides first-hand experiences with new products, increasing confidence in and excitement for our latest innovations.





