



VERDESIAN LIFE SCIENCES

Verdesian Product Update

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 PRESIDE *CL*[®]

Powered by

 TAKE OFF[®]



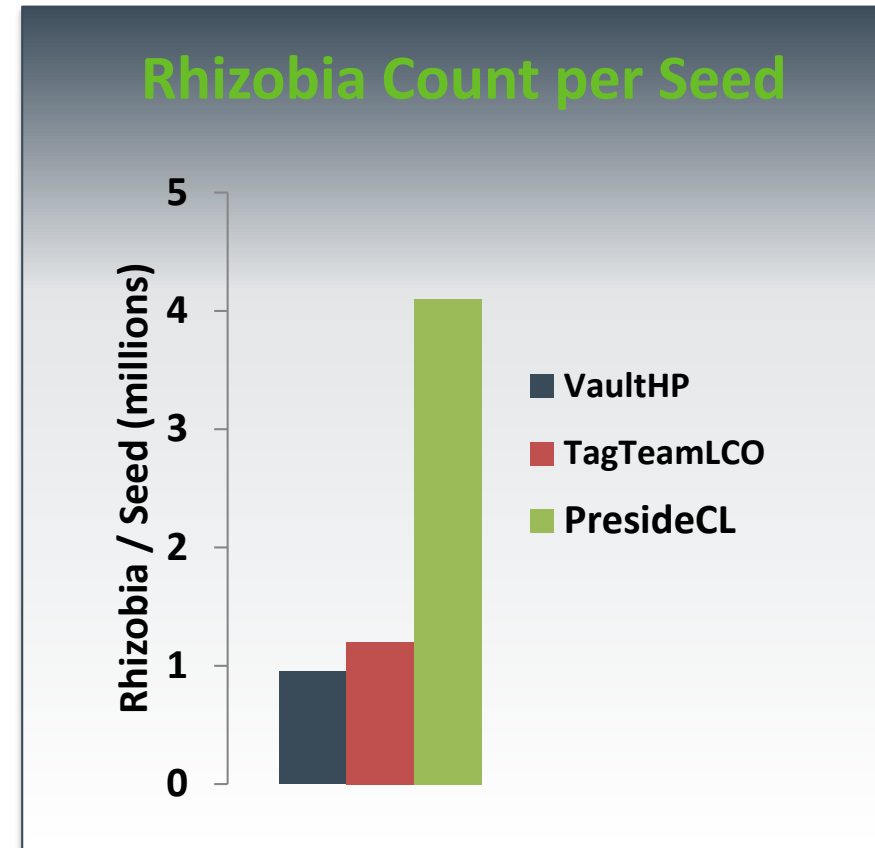
PRESIDE CL[®] benefits

- Operational benefit
 - Low rate (2.5 oz./cwt)
 - Light, thin extender, improves seed handling
 - FlexConnect enabled
 - Easy to apply
- Agronomic benefit
 - Improves speed of germination and emergence
 - Improves Nitrogen uptake and use efficiency
 - Yield increase: +3.4bpa vs No inoculant 72%, +2.5 bpa vs competition 65%
- Economic benefit
 - Higher plant health and yields increase return for growers
 - Flex Connect adds takes waste to 0, sell every unit, average increase of 8% to dealer margin

High-Count, Multiple Strain *B. japonicum*

Preside[®] CL

- 4.1m Colony Forming Units (live rhizobia) per seed
- Bigger nitrogen engine to support greater yield potential
- Soybeans need 5# of N for every bushel produced



Preside CL provides more N-fixing power

Preside CL Has Outstanding Compatibility

Preside CL All Package Sizes	Planting Window
Untreated	125
Acceleron®	110
CruiserMaxx® Advanced + Vibrance	120
Clariva® Complete	90
Avicta® Complete	90
Warden® CX	120
Inovate® System	115
Treatments Containing Moly	5 days



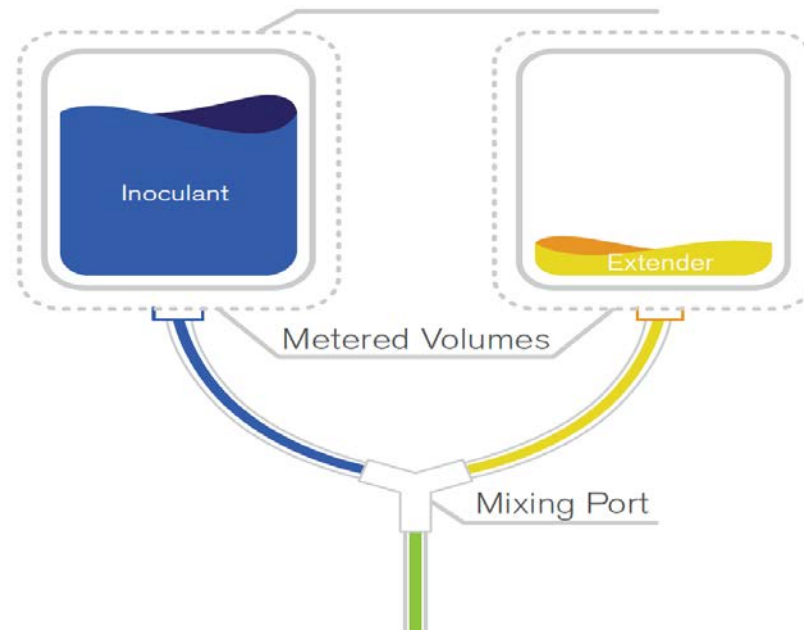
Allows for earlier treating



TAKE OFF[®] *ST* benefits

- Operational benefit
 - Very low rates
 - Very light, colorless, extremely tank mix compatible with F&I seed treats
 - Easy to apply
- Agronomic benefit
 - Improves speed of germination and emergence
 - Improves Nitrogen uptake and use efficiency
 - Yield increase: +7.8bpa 66.7% on corn, +2bpa 79% on soybeans, +4.3 66% on wheat
- Economic benefit
 - Higher plant health and yields increase return for growers
 - Differentiates hybrids from competition

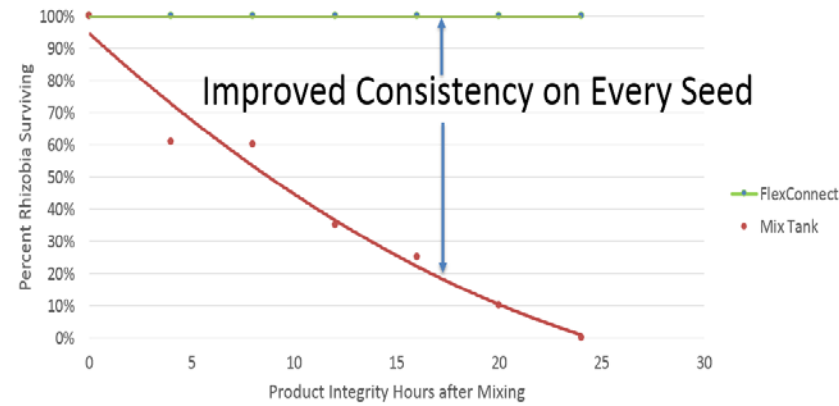
Flex Connect™



FlexConnect Agronomic Advantages

- Eliminate Contamination
 - Open air mixing
 - Contaminants out-compete inoculant
 - Quality declines Rapidly
 - 65% decline after 12 hours.

FlexConnect—Highest Quality All The Time

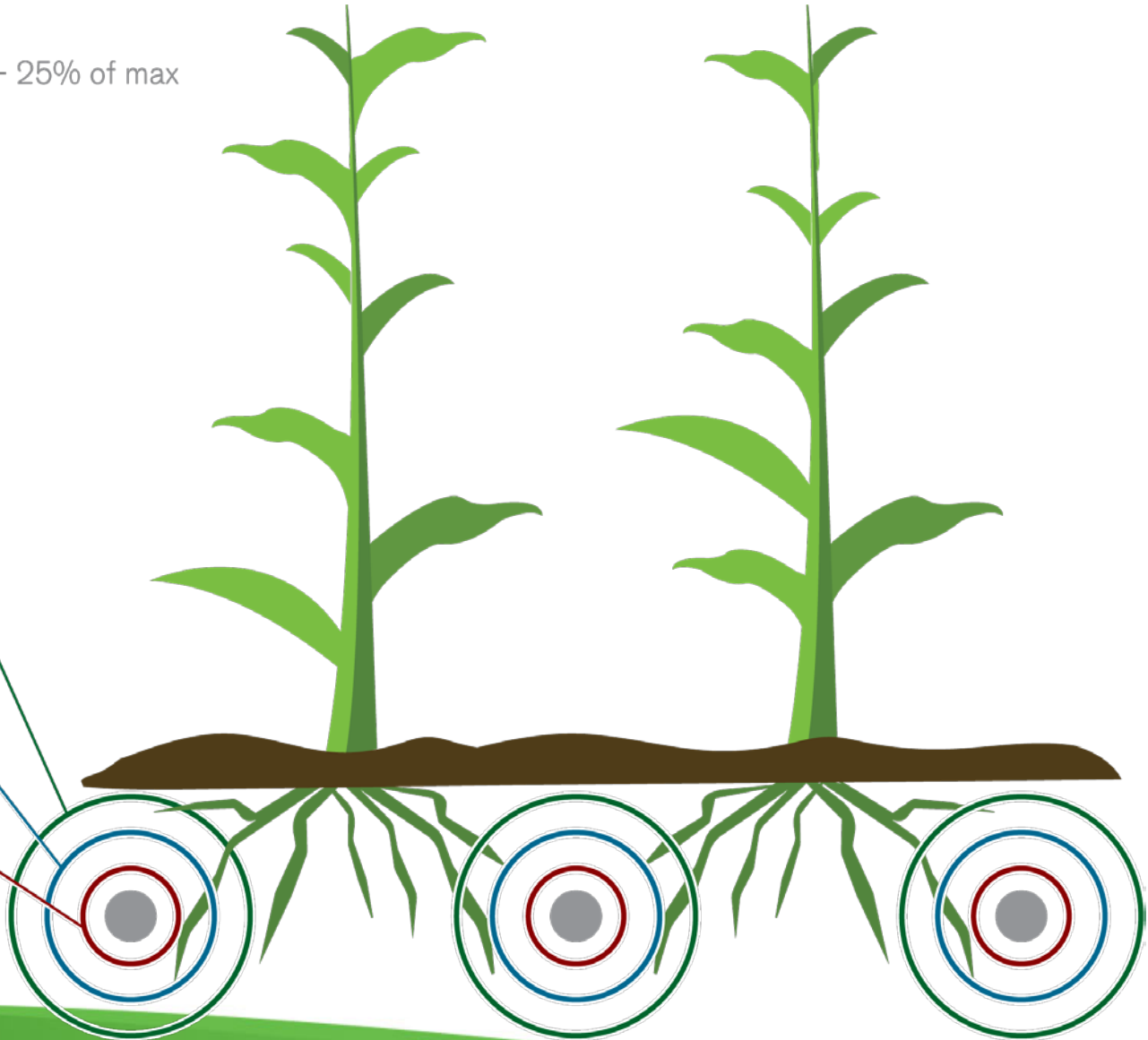
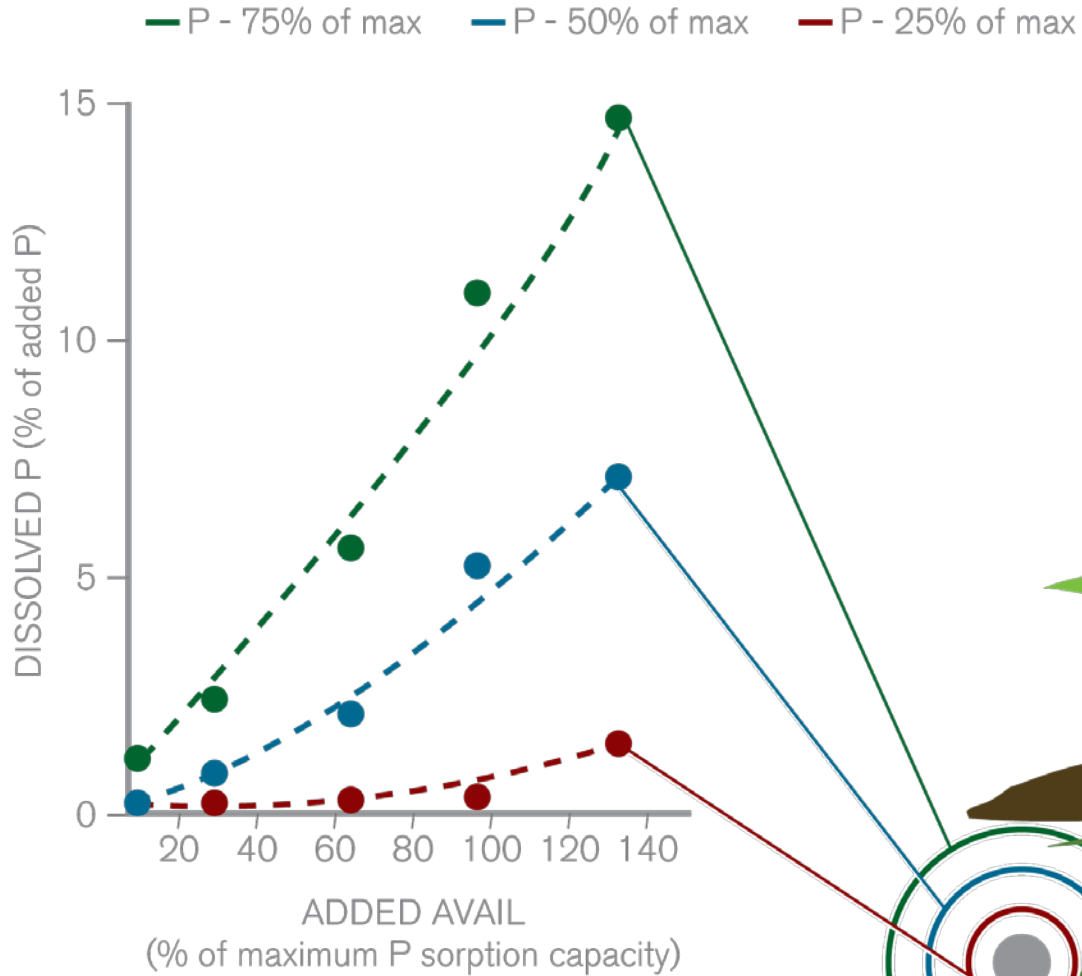


New Data

- AVAIL technology

- Doydora, S., D. Hesterberg, and W. Klysubun. 2017. *Phosphate Solubilization from Poorly Crystalline Iron and Aluminum Hydroxides by AVAIL Copolymer*. *Soil Sci. Soc. Am. J.* 81:20-28. doi:10.2136/sssaj2016.08.0247
- Hopkins, B. G., K. J. Fernelius, N. C. Hansen, and D. L. Eggett. 2018. *AVAIL Phosphorus Fertilizer Enhancer: Meta-Analysis of 503 Field Evaluations*. *Agron. J.* 110:389-398. doi:10.2134/agronj2017.07.0385

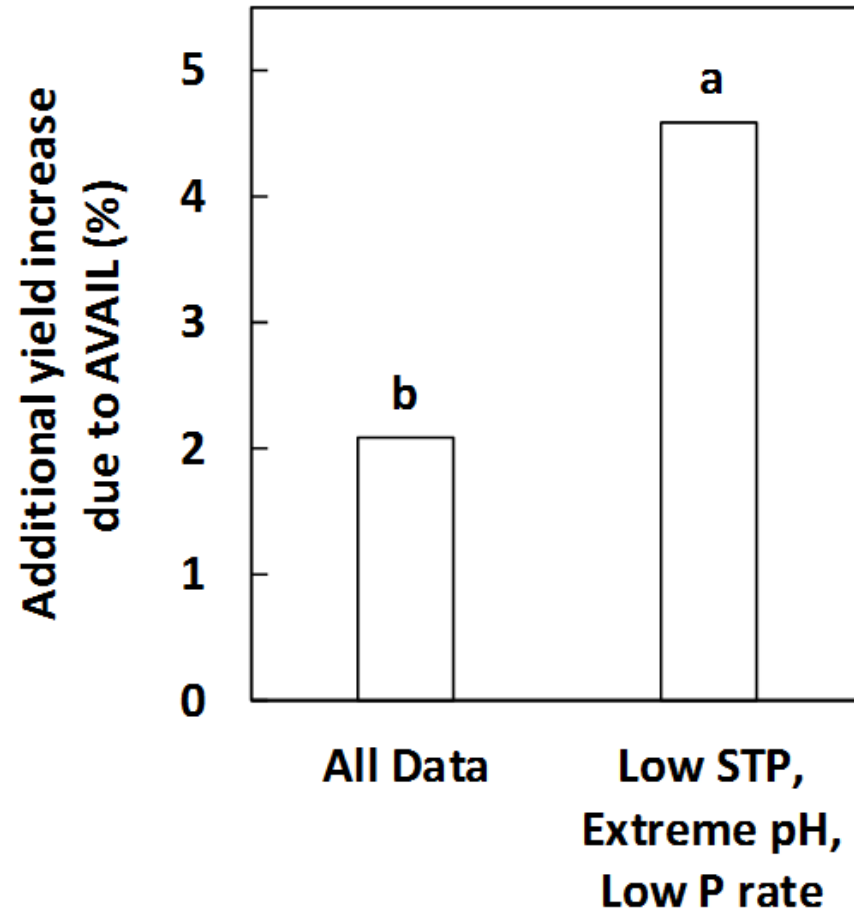
Enhances the Spread of P from Fertilizer Bands



Doydora, S., D. Hesterberg, and W. Klysubun. 2016. Phosphate Solubilization from Poorly Crystalline Iron and Aluminum Hydroxides by AVAIL Copolymer. Soil Sci. Soc. Am. J. O. doi:10.2136/sssaj2016.08.0247

When Avail?

Data from Meta-Analysis by Hansen and Hopkins, BYU



- Examined entire universe of AVAIL Trials
- 503 field trials total
- Significant increase in crop yields where P response expected
- Average yield increase 4.5%

New Product Launches

- AVAIL HV
- TakeOff LS
- Next generation P enhancement technology

AVAIL HV Crops & Use Rates

- 0.5% v/v
- 2qt / 100 gal
- Vegetables, Fruits, TNV, and other specialty crops
- Not for use on Sweet potato (*Ipomoea*)



Features & Benefits



PROTECTS APPLIED
P – MAKING 45% MORE
AVAILABLE TO PLANTS



PREVENTS
P FIXATION AND
P LOSS



PROVEN
PERFORMANCE ON
SPECIALTY CROPS

**+12
YEARS**

BASED ON
ESTABLISHED
TECHNOLOGY



SCIENTIFICALLY
PROVEN
MODE OF ACTION (MOA)



SPEEDS EARLY SEASON
PERFORMANCE AND
STRESS RESISTANCE



FLEXIBLE
APPLICATION AND
HIGHLY COMPATIBLE



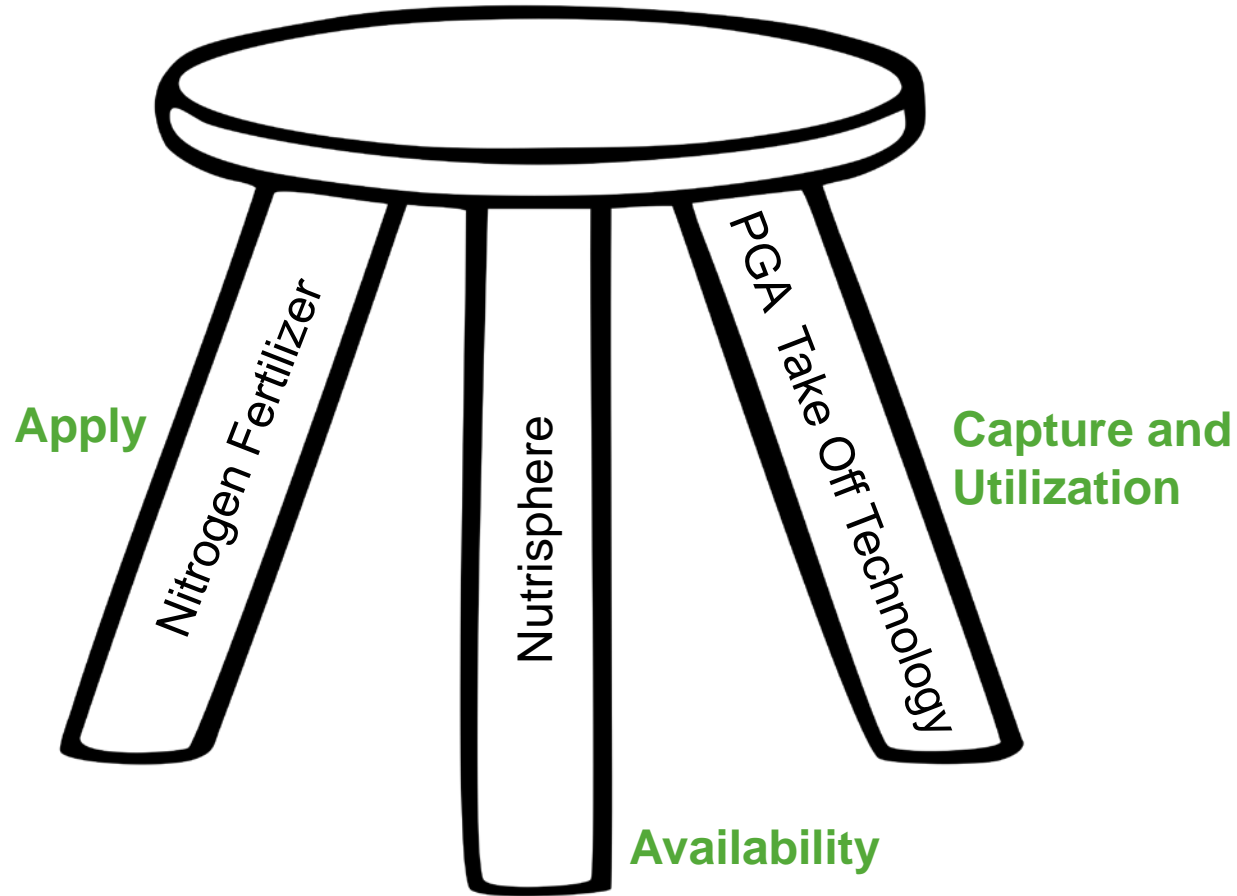
ENHANCES
4R NUTRIENT
STEWARDSHIP

New Liquid Products in Development

- Take Off Liquid (LS)
 - ✓ **Launch March 2018**
 - TakeOff + other components (phosphite, S, B, Mn, Fe, Zn)
 - Higher PGA load
 - Tank Mix partner with fertilizers (in-furrow starters, side-dress UAN, SRN) or foliar sprays (herbicides, fungicides, micronutrients, etc.)
 - Field Demo program continues this year

Use Rate/A	1 pt	1 qt
g ai/A	50	100
oz ai/A	1.75	3.5
g ai/Ha	125	250

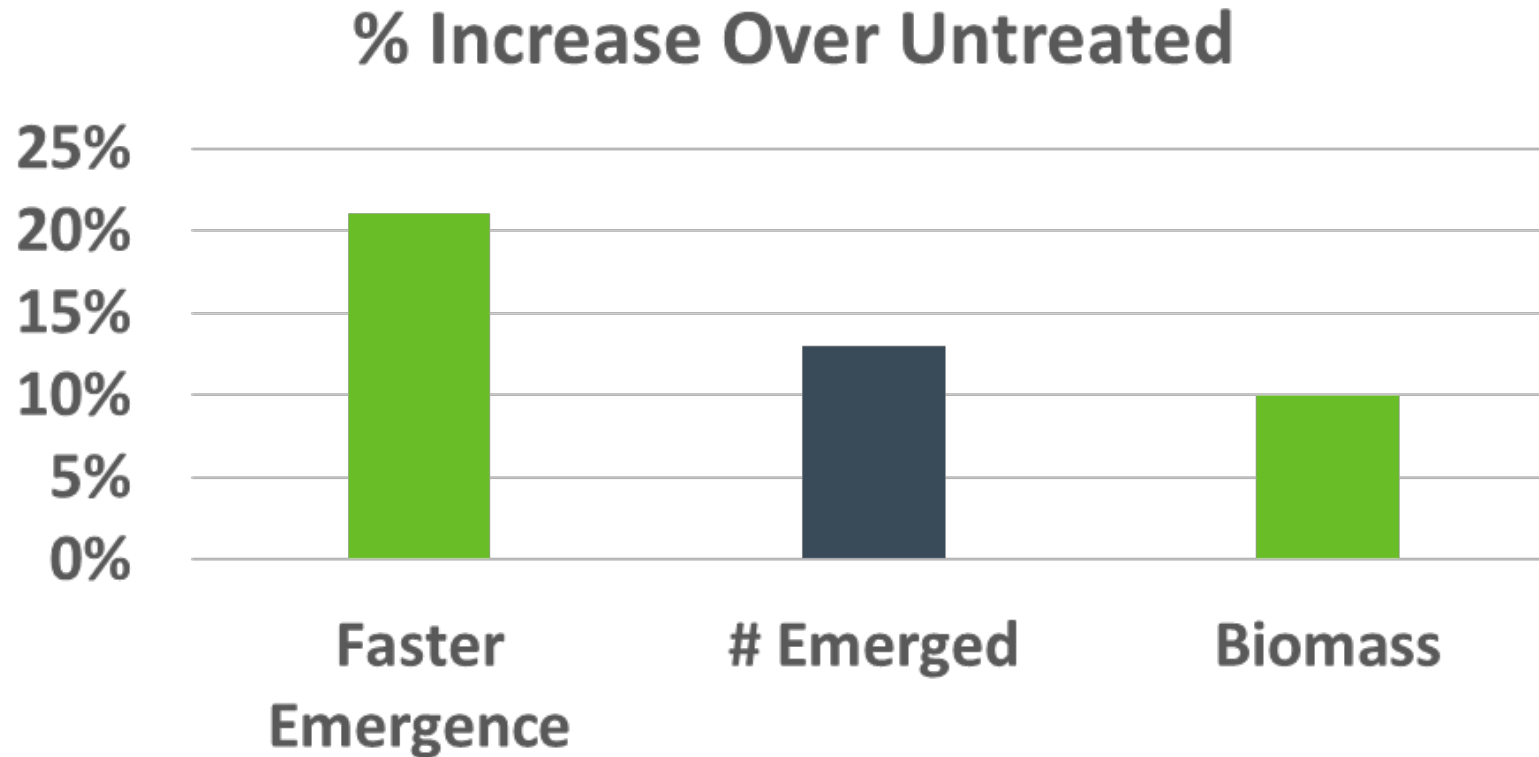
Take Off Technology: The Third Leg of the Nitrogen Stool



"N-Telligent Nitrogen"

Take Off ST®

Faster germination and emergence



- Faster emergence = mean days from sowing to first emergence
- # plants = # Emerged at 10 DAP

▪ 2014 VLS Trials. Visalia, CA

Improved early crop growth and performance