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TECH Tips



Research and Technology Field Results- Soybean Inoculants, Seed Applied Micronutrients and PGR's

Objectives:

- 1) Document to gain in yield possible with soybean inoculants in a continuous corn-soybean rotation
- 2) Compare the premium inoculant products and evaluate the field performance of each brand
- 3) Investigate other seed applied solutions such as seed applied micronutrients and PGR products

Treatments Tested – Soybean Inoculants, Seed Applied Micronutrients and PGR's:

- Uninoculated seed
- Preside CL inoculant (Verdesian)
- Optimize XC inoculant (Bayer)
- Take Off ST (Verdesian)
- Ascend SL (Winfield United)
- Tripidity (Rosen's)
- Tuxedo (micronutrient) (Verdesian)
- Protinus (micronutrient) (Compass Minerals)
- Cover 2 VPH (white mold) (Winfield United)
- White Mold Protection System (white mold) (Rosen's)

Treatments and Rates Tested:

11-13-18 (AGTEG_BATH_18_SOY_INOCULANT)

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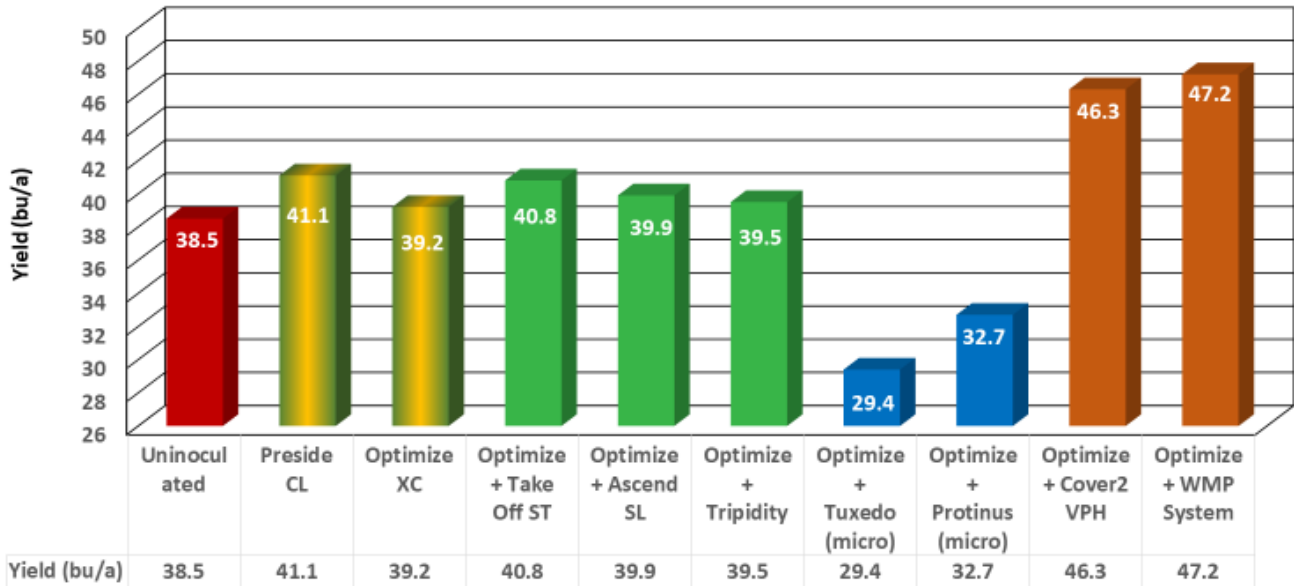
Agtegra Cooperative

Trial ID: AGTEG_BATH_18_SOY_INOCULANT		Agtegra Seed Treatment Inoculant Trial 2018		Trial Year: 2018	
Protocol ID: AGTEGRA_SOY_SEED		Investigator: Brad Ruden			
Project ID: 5060.38461		Sponsor Contact:			

Trt No.	Treatment Type Name	Form Conc	Form Unit	Form Type	Rate Rate	Rate Unit	Growth Stage	Appl Code	Comment 1	Rep 1	Rep 2	Notes
1	SDTR UNINOCULATED	0	LBA/GAL	FS	0	fl oz/unit	SETRLI A		10 FT PLOT	101	201	
2	SDTR PRESIDE CL	100	%AW/W	FS	1.17	fl oz/unit	SETRLI A		10 FT PLOT	102	202	
3	SDTR OPTIMIZE XC	100	%AW/W	FS	0.68	fl oz/unit	SETRLI A		10 FT PLOT	103	203	
4	SDTR OPTIMIZE XC SDTR TAKE OFF ST	100 100	%AW/W %AW/W	FS FS	0.68 0.3	fl oz/unit fl oz/unit	SETRLI A SETRLI A		10 FT PLOT	104	204	
5	SDTR OPTIMIZE XC SDTR ASCEND SL	100 100	%AW/W %AW/W	FS FS	0.68 1.92	fl oz/unit fl oz/unit	SETRLI A SETRLI A		10 FT PLOT	105	205	
6	SDTR OPTIMIZE XC SDTR TRIPIDITY	100 100	%AW/W %AW/W	FS FS	0.68 1.2	fl oz/unit fl oz/cwt	SETRLI A SETRLI A		10 FT PLOT	106	206	
7	SDTR OPTIMIZE XC SDTR TUXEDO SEED APPLIED MICRO	100 100	%AW/W %AW/W	FS FS	0.68 0.91	fl oz/unit fl oz/unit	SETRLI A SETRLI A		10 FT PLOT	107	207	
8	SDTR OPTIMIZE XC SDTR PROTINUS SEED APPLIED MICRO	100 100	%AW/W %AW/W	FS FS	0.68 2.73	fl oz/unit oz ai/unit	SETRLI A SETRLI A		10 FT PLOT	108	208	
9	SDTR OPTIMIZE XC SDTR COVER 2 VPH	100 100	%AW/W %AW/W	FS FS	0.68 0.65	fl oz/unit fl oz/unit	SETRLI A SETRLI A		10 FT PLOT	109	209	
10	SDTR OPTIMIZE XC SDTR WHITE MOLD PROTECTION SYSTEM	100 100	%AW/W %AW/W	FS FS	0.68 0.66	fl oz/unit fl oz/unit	SETRLI A SETRLI A		10 FT PLOT	110	210	

Results – Soybean Inoculants, Seed Applied Micronutrients and PGR's:

Research and Technology Plots: 2018 Soybean Inoculants



- AG14X8 soybean planted at 140,000 seeds per acre



Crop Name	Rating Type	Rating Unit	Sample Size, Unit	Trt No.	Treatment Name	Rate	Rate Unit	Soybean, Round> YIELD BU 1 A	Soybean, Round> WEITES BU60LB 1 BU	Soybean, Round> VIGOR 0-10 PLOT	Soybean, Round> STAOBJ NUMBER .001 A
				1	UNINOCULATED	0 fl oz/unit		38.5	58.425 -	6.7 f	108.3 h
				2	PRESIDE CL	1.17 fl oz/unit		41.1	58.500 -	7.7 d	121.0 b
				3	OPTIMIZE XC	0.68 fl oz/unit		39.2	57.800 -	7.7 d	121.7 a
				4	OPTIMIZE XC TAKE OFF ST	0.68 fl oz/unit 0.3 fl oz/unit		40.8	57.950 -	7.7 d	113.7 f
				5	OPTIMIZE XC ASCEND SL	0.68 fl oz/unit 1.92 fl oz/unit		39.9	58.550 -	8.7 b	113.0 g
				6	OPTIMIZE XC TRIPIDITY	0.68 fl oz/unit 1.2 fl oz/cwt		39.5	58.050 -	8.0 c	115.3 d
				7	OPTIMIZE XC TUXEDO SEED APPLIED MICRO	0.68 fl oz/unit 0.91 fl oz/unit		29.4	58.500 -	6.7 f	116.0 c
				8	OPTIMIZE XC PROTINUS SEED APPLIED MICRO	0.68 fl oz/unit 2.73 oz ai/unit		32.7	57.150 -	7.3 e	115.3 d
				9	OPTIMIZE XC COVER 2 VPH	0.68 fl oz/unit 0.65 fl oz/unit		46.3	58.000 -	9.0 a	114.0 e
				10	OPTIMIZE XC WHITE MOLD PROTECTION SYSTEM	0.68 fl oz/unit 0.66 fl oz/unit		47.2	57.150 -	8.7 b	113.7 f

Key Observations – Soybean Inoculants, Seed Applied Micronutrients and PGR's

- **Inoculants add a SOLID GAIN in yield compared to uninoculated**, even with extremely dry conditions
- **Plant stand improved significantly with inoculation**- over a 13,000 plant increase vs uninoculated
- **Preside CL outperformed Optimize XC slightly**, and provided a 1.9 bu advantage in yield
- **Optimize XC** started faster, with earlier nodulation and rapid early growth
- **Optimize XC** nodules died off after R1, which is the general trend for nodules
- **Preside CL nodulated well by V6**, but was slower to develop, as root mass had to grow first. By V6, Preside CL was similar to Optimize for nodulation
- **Some Preside CL nodules were still active at R2 or later**- an important factor in later pod fill this year
- **White Mold Control Additives:**
 - **The White Mold Protection System (WMPS) (Rosen's) or Cover 2 VPH (Winfield United)** were TREMENDOUS! Both provided excellent growth and strong plants all season. These treatments were clearly ahead of the rest of the plot all season.
 - **Both contain Heads Up, WMPS has Tripidity + Heads Up, Cover 2 VPH has Heads Up + VPH 100 (Albaugh) + Mertect fungicide**
- **Agtegra is carrying the White Mold Protection System** product for 2019
- **Ascend or Tripidity alone on the seed were positive**, providing good seedling vigor, but were not able to provide significantly increased yield
- **Seed-applied micronutrients did NOT perform well**, limiting germinations this is likely due to extremely dry conditions all season

2018 Plot Setup Information:

- Plot located at the Agtegra Bath location in the Research and Technology demonstration plots
- Variety: Asgrow 11X8 planted at 140000 plants per acre in 30" rows
- Plots planted May 19, 2018
- Two replications of the treatments were planted