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Sulfonylurea-tolerant (STS) SOYBEANS

**No Gowan is not in the soybean seed business
yet but we are in the Permit Plus business.**

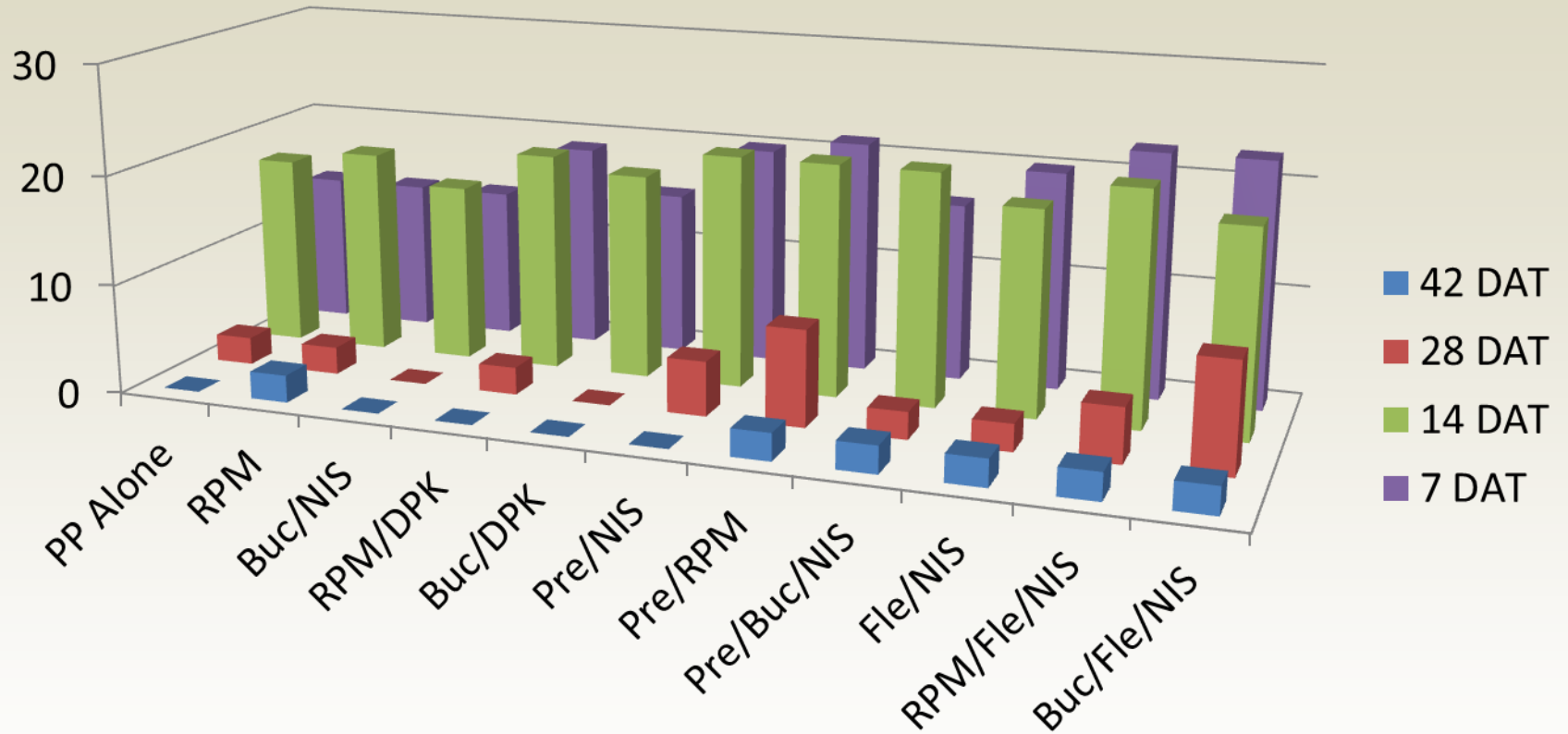
Why Plant STS Soybeans ?

- Off target on to susceptible crops.
- Applicators will be your friend or your neighbor might still be your friend.
- Cost of technology is free.
- Productive varieties. Some farmers have been planting them but were unaware of it.
- Some herbicides in rotational crops require it. Finesse in wheat is one example.
- Following ALS chemistry used as burndow or preplant treatments. **Watch this one. Weather.** Dr. Tom Eubanks MSU
- Crop Rotation.
- Liberty Soybeans. **Sedges**
- Volunteer RR Soybeans. **Permit Plus will kill them.**

- Varieties Tested in 2013:

Armor 47-F8	Armor 48-R40	Armor X1217
Armor X1305	Armor 46X29	Armor 48R91
Asgrow 5405	Asgrow 5605	Asgrow 4903
Asgrow 4866	Asgrow 4605	DP4888RR/S
DP5335RR/S	Dyna-Grow 36C44	Dyna-Grow 33RY47
Genuity X1307	MorSoy 48X00	Pioneer 95Y31
Schillinger 478.RCS		Stine 4782-4
Syngenta S54-V4		Wilcross 2544NSTS

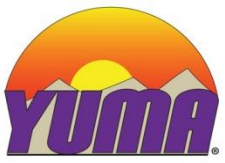
Soybean injury (%) across 22 varieties at 7, 14, 28 and 42 DAT



- No differences in phytotoxicity were noted among the STS varieties. Stunting was the phytotoxic effect that persisted.
- Tank-mixes with multiple partners increased phyto. Prefix and Flexstar should be avoided if phyto is a concern. The more components, the more likely the phyto!
- Up to 28 days was required for recovery from phyto to occur with label rate applications.

1. Dayflower, 1-2 Inches
2. Ground Cherry, 1-2 Inches
3. Hemp Sesbania, 1-4 Inches
4. Sedges, Yellow and Annual, 2-5 Inches
5. Red Stem, 1-2 Inches
6. Smartweed, 1-3 Inches
7. Sunflower, Big
8. Velvetleaf, 1-6 Inches
9. Volunteer RR Soybeans , 2-12 Inches

- Corn over the top- apply to 2-6 leaf corn at 0.75 oz/A
- No restrictions of tank mixes with other registered corn herbicides.
- STS soybeans pre plant: From 21 days prior to planting to day of planting at 0.75 to 1.5 oz/A.
- STS soybeans postemerge V1-R2 or 88 days prior to harvest at 0.75 oz/A. *We like V-2 to V-3 for performance.*
- No restrictions of tank mixes with other registered soybean herbicides.



Isagro Agreement

- To market and develop all of Isagro products in the US this season with the exception of their Halo formulations.
- Valent will continue to market Domark fungicide through the 2014 season.
- Gowan will market and develop Affiance fungicide for corn and soybeans in 2014.



AFFIANCE™



**Preventative, Protectant, and Curative
Disease Control in Corn and Soybeans**

Broad Spectrum

Dual Modes of Action

Highly Systemic

Unique and Convenient Suspension



- Premix of tetraconazole + azoxystrobin
 - Domark[®] 230ME + Quadris Flowable[®]
 - tetraconazole = 0.667 lbs/gal
 - azoxystrobin = 0.834 lbs/gal
- tetraconazole – FRAC Group 3
 - triazole class of chemistry
 - demethylation inhibitor (DMI) of sterol biosynthesis
- azoxystrobin – FRAC Group 11
 - strobilurin class of chemistry
 - quinone outside inhibitor (QoI) binding site of cytochrome bc1 complex

Affiance Labeled Diseases

Field Corn, Pop Corn, Corn Grown for Seed Production

Anthracnose leaf blight	<i>Colletotrichum graminicola</i>
Diplodia ear rot (suppression)	<i>D. maydis</i>
Eye spot	<i>Aureobasidium zeae</i>
Gray leaf spot	<i>Cercospora zeae-maydis</i>
Helminthosporium leaf blights	<i>H. maydis, H. turcicum, H. carbonum</i>
Northern corn leaf blight	<i>Exserohilum turcicum</i>
Northern corn leaf spot	<i>Bipolaris zeicola</i>
Physoderma brown spot	<i>Physoderma maydis</i>
Rust, common	<i>Puccinia sorghi</i>
Rust, southern	<i>Puccinia polysora</i>
Southern corn leaf blight	<i>Bipolaris maydis</i>
Yellow leaf blight	<i>Phyllosticta maydis</i>

Soybeans

Aerial blight	<i>Rhizoctonia solani</i>
Alternaria leaf spot	<i>Alternaria spp.</i>
Anthracnose	<i>Colletotrichum spp.</i>
Asian Soybean Rust	<i>Phakopsora pachyrhizi</i>
Brown spot	<i>Septoria glycines</i>
Cercospora blight	<i>Cercospora kikuchii</i>
Frogeye leaf spot	<i>Cercospora sojina</i>
Pod and stem blight	<i>Diaporthe phaseolorum</i>
Powdery Mildew	<i>Microsphaera diffusa</i>
White mold/Sclerotinia stem rot	<i>Sclerotinia sclerotiorum</i>

Affiance Label Overview

Subject to change, pending US EPA federal registration

- 'CAUTION' signal word
- 12 hour REI
 - 20 day REI for seed corn detasseling
 - Will be reduced in the future
- PHI
 - **Do not apply after R3 in corn**
 - **Do not apply after R5 in soybeans**
- 2 hour rainfastness
- Approved application methods
 - Aerial – 2 gpa minimum
 - Ground rig – 10 gpa minimum
 - Chemigation

Rotational Crop Guideline	
Crop	Time Between Last AFFIANCE Application and Planting
Corn, grape (and 13-07F subgroup), peanut, pecan, soybean, strawberry (and 13-07G subgroup) and sugar beet	0 days
Small Grains (barley, rice, sorghum, triticale and wheat)	45 days
Sugarcane	45 days
Buckwheat, millet, oats, rye	12 months
All Other Crops	120 days

Recommended Use Rates

- Corn – MAX 2 applications/year
 - Apply prior to disease onset when conditions favor disease development.
 - Early application (V4 – V8)
 - **8 - 10 floz/ac** for low to moderate disease pressure and/or when planning to make a 2nd application late season.
 - **12 floz/ac** for heavy disease pressure or for season long residual control, a second application may be required late season if conditions favorable to disease development persist.
 - Late application (V8 – R3)
 - **10 floz/ac**
- Soybeans – MAX 3 applications/year
 - **10 floz/ac**: make application at R3 or when conditions favor disease development, repeat application 15 to 21 days after first application if favorable conditions persist.
 - **12 floz/ac for Asian Soybean Rust**: apply prior to disease development when conditions favor disease development, repeat if necessary with a second application before growth stage R6.
 - **14 floz/ac for Aerial Web Blight**: apply prior to disease development when conditions favor disease development, repeat application 15 to 21 days after first application if favorable conditions persist.
- Curative applications are most effective when disease incidence does not exceed 5% of the corn/soybean plants at the time of application.

COPPER PRODUCTS

Isagro/Gowan USA Copper Products The Best Copper Formulations

Kentan DF

Peanut and wheat. Control of cercospora, leaf spot , powdery and downey mildew.

Badge[®] SC

Peanuts and wheat for the control of cercospora leaf spot and Helminthosporium .

Badge[®] X₂

Corn, Ornamentals and Strawberries for the control of leaf spots and rust. Organic certified..

**Gowan is very very aware of need for a material to control bacterial panicle blight in rice.
Maybe we can do it with a copper compound with out crop injury.**

TETRACONAZOLE PRODUCTS



Tetraconazole for sugar beet, pecan and peanut leaf spot and mildew control.



Tetraconazole for the control of powdery mildew in Strawberries, Grapes, Blueberries and other berry crops.

Siapton[®]

**Bio activator or natural fertilizer.
OMRI certified**



Bio Rational Fungicide

GOWAN

**THANKS FOR YOUR TIME AND
ATTENTION**

