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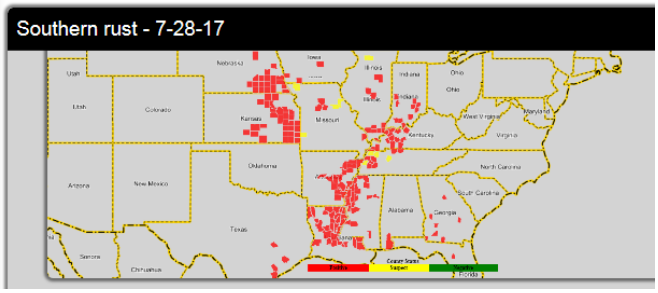
8-4-17

Southern Rust

Southern Rust has been confirmed in southern IL and IN. It is a very aggressive disease that originates in tropical areas. Spores are carried by wind currents on the rust pathway and are deposited in the Midwest, typically at or just prior to reproductive stages in corn. The fungus does not overwinter in IL or IN because it requires living tissue to survive. Southern rust prefers warmer temperatures of 77-82F to rapidly complete spore producing cycles. Short periods of leaf wetness ~ 6hrs favors infection, extended dew periods will typically provide enough leaf wetness for infection to occur. When environmental conditions are favorable the reproductive cycle repeats causing secondary infections and each pustule contains thousands of spores that can produce additional spores in just 7 days. Young leaves are more susceptible than older leaves and later planted corn encompasses higher risk for infection.

Southern Rust redirects essential nutrients from the plant to sustain fungal growth. Pustules rupture epidermal tissue and symptoms can resemble drought stress by interfering with water loss through stomata and the leaf surface. Sustained fungal development may contribute to stalk lodging as the disease requires plant nutrients to continue disease cycles. Resistant hybrid selection normally provides adequate disease management. However, in 2008 a new race of S. rust was discovered that was able to inflict damage on formerly resistant hybrids.

Southern Rust can cause severe yield loss if infection occurs prior to R5 (Dent Stage). If S. rust is present in the field, or if the disease has been confirmed in neighboring counties and a moderately resistant or susceptible hybrid is planted, apply Preemptor™ SC fungicide 5-6 oz. Add NIS 0.25% v/v after tassel emergence. If insects including Japanese beetles or corn rootworm beetles are feeding on silks or pollen, or spider mites are present, add Hero® Insecticide 6.4 oz./A. Fungicide application alone can flare spider mite populations, the addition of Hero Insecticide will mitigate the occurrence of mite flare.



Southern rust progression map. Source: iPiPE; http://ext.ipipe.org/

Common rust – brick red pustule, more spread out distribution on leaf, present on upper and lower leaf. Prefers cooler temperatures 61-77F.

Southern rust – orange pustule, little space between, spreads rapidly, primarily present on upper side of leaf.

Inside This Issue

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FMC

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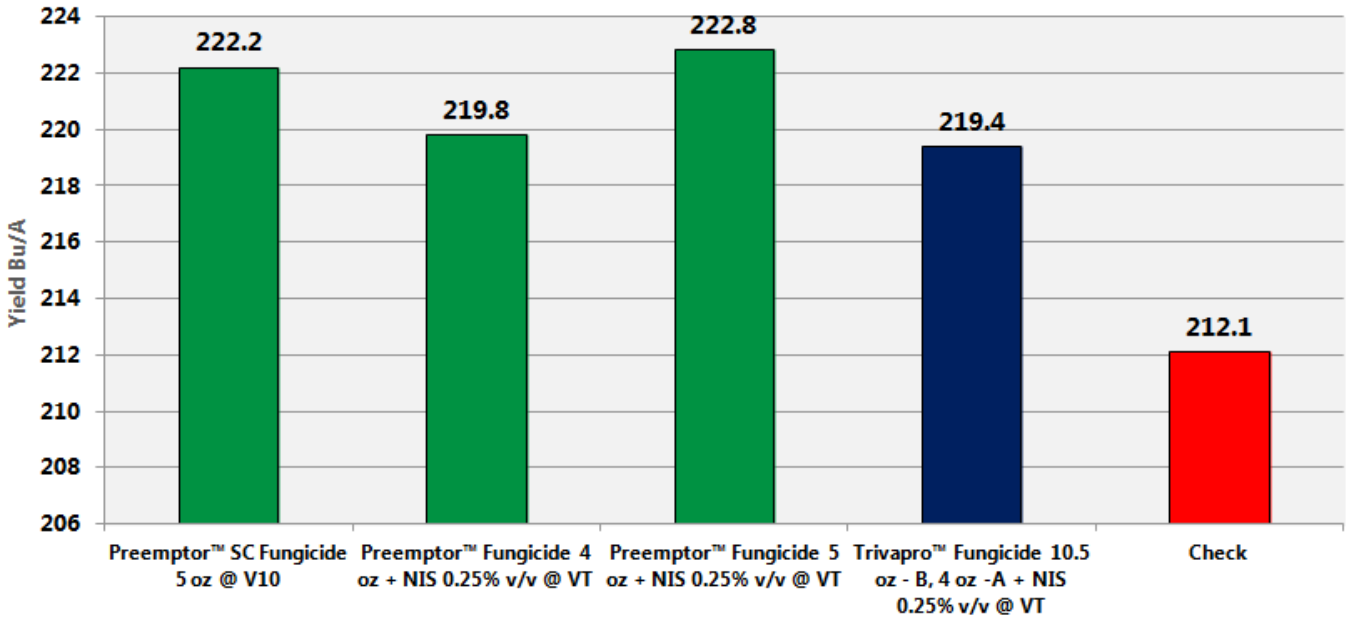
Southern Illinois University
Carmi, IL – Southern Rust, Grey Leaf Spot

Preemptor™ SC Fungicide 5 oz @ VT

Trivapro® Fungicide 10.5 oz, B, 4 oz, A @ VT

Evaluation of Foliar Fungicides for Disease Control and Yield
Dr. Jason Bond - S. Illinois Univ. - 2016
Carmi, IL



PREEMPTOR™ SC

FUNGICIDE

Preemptor™ SC Fungicide Use Recommendations -- *V5 to V8* **– 5 oz,** *V9 – Prior to VT* **- 5 oz, No Adjuvants,** *VT to R2* **– 5 oz**
PHI: 30 days grain, forage, stover. Minimum of 2 gpa – aerial or 10 gpa ground application volume.

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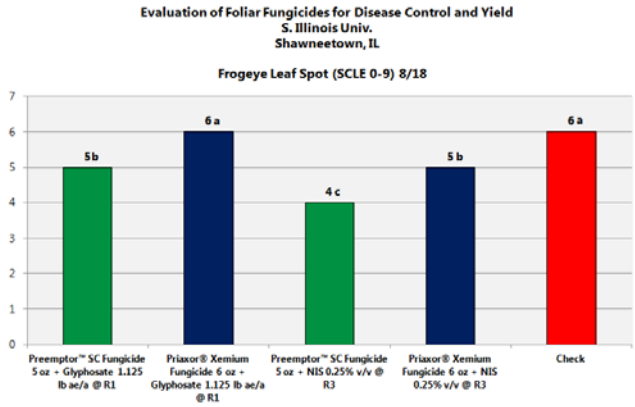
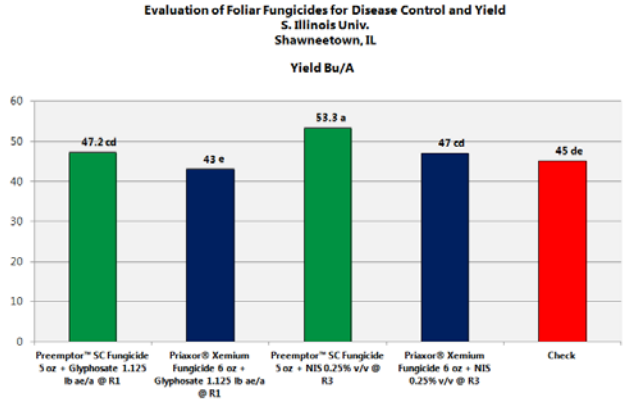
Frogeye Leaf Spot

Frogeye leaf spot is caused by the fungus *Cercospora sojina*, and is prevalent in hot and humid regions of the U.S., but has expanded it's range. Isolates resistant to strobilurin fungicides are becoming more common in areas of southern IL and IN. Triazole containing premixes are most effective against this pathogen. The fungus survives in infected plant residue and seed. Although most soybeans are rotated with corn, infected soybean residue from 2 years prior may contain FLS ,especially if more residue is present in minimum or no-till environments. Continuous soybean fields are at greater risk for FLS infection. Wind readily moves spores produced on residue or developing soybeans from field to field. Infection may occur at any soybean growth stage but the disease environment is typically more conducive during the reproductive stages. Younger leaves are most susceptible to infection and susceptibility decreases as soybeans mature. Late planted or double crop soybeans should be scouted regularly, especially if a susceptible variety is planted due to inherent sensitivity. The disease is polycyclic meaning several cycles may continue if the environment is conducive. The higher the number of lesions, the more leaf area is affected, the greater the reduction in yield. Flutriafol (the triazole component of Preemptor™ SC Fungicide) is very active against FLS. If FLS is identified in the canopy, or a sensitive variety is planted and the pathogen has been identified in close proximity apply **Preemptor™ SC Fungicide @ 5-6 oz./A, R3-R5** to decrease the number of disease cycles and maintain photosynthetic leaf area to optimize crop yield.

Field Diagnosis Tips:

- Pay attention to periods of extended leaf wetting, 77-85F.
- Initially small yellow spots form on leaves
  - Enlarge to ¼'' diameter, centers gray to brown with reddish purple margins.
  - Spots may coalesce to form irregular patterns
- Pod and stem lesions may develop (less frequent)
  - Stem lesions red when young, darken with age
  - Lack reddish purple border
- Any lesion on plant may produce dark centers that produce spores.





Application Recommendations

4-6 oz/A	**Control**: Alternaria leaf spot, Anthracnose, Brown spot, Cercospora blight, and Purple seed stain, Frogeye leaf spot, Pod and Stem blight, Powdery mildew, Rhizoctonia aerial blight, Rust. For optimal activity apply @ or near R3. **Suppression**: Sclerotinia stem rot, White mold, SDS – R1 application or before.
Special Information	**12 Hour REI, 30 Day PHI (seed harvest).** Apply using nozzles delivering thorough coverage to provide adequate disease control. For ground application equipment apply in a minimum of 10 gal/a. For aerial application, use aircraft spray equipment in a minimum of 2 gal/a. Can be tank mixed with commonly used herbicides, fungicides, insecticides and foliar nutrients. Adjuvant use: Including NIS 0.25% v/v or an oil based adjuvant 0.5-1% v/v may improve spray coverage and canopy penetration, if tank mixed follow adjuvant requirements for tank mix partner. Do not apply more than 12 oz/a per acre per year. Do not apply more than 0.132 lb ai/a fluoxastrobin and 0.227 lb ai/a flutriafol per year. Apply no later than R5 (beginning seed). Do not make more than two applications per year. The minimum retreatment interval is 14 days. Do not feed forage or hay to animals or permit animals to graze.

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Corn Rootworm Adults

CRW adults are prevalent in certain areas, below are a few management tips.

- Male Western corn rootworm begin emergence first. Peak emergence of females is about seven to 14 days after males.
- Silk clipping is a concern with early adults. Treat if silks clipped to half-inch of ear during pollen shed.
- Female CRW adults feed on a high-protein diet like pollen and silks during mating before laying eggs. This can occur over a long period.
- **When 10 percent or more of females are gravid (egg-laying), treatment is recommended. This gives the maximum window for beetle emergence and before significant egg laying occurs**
- **This is usually later than most fungicide applications, so a second application to reduce egg-laying populations for next year may be needed.**
- Fields with more than two to three per plant should consider adult spray to reduce egg-laying populations

Corn Rootworm Adult Treatments

1. **Hero® Insecticide 5 oz./A + Dimethoate 8-16 oz./A**
2. **Hero Insecticide 5 oz./A + Lorsban® insecticide 12-16 oz. /A**
3. **Stallion® Brand Insecticide – 11.75 oz./A**

- Multiple modes of action are important in managing resistance to insecticides. Continual use of only pyrethroids such as bifenthrin increases selection pressure and increases tolerance levels in the populations. Our insecticide tools to manage many of these insects are limited, so we need to maintain efficacy and steward our actives wisely.
- Performance is knockdown only.
- Spray coverage is critical. Use 3 GPA minimum by air, 5 GPA is better. **Add COC at 8-12 oz./A, especially when temps above 90 F.**
- Avoid applications on very wet mornings or excessively hot afternoons as beetles are not as active and migrate down and control can be reduced.
- Hero Insecticide or Stallion Brand Insecticide will also provide control of Western bean cutworm, ECB, grasshoppers and stink bugs.

Spider mites

Two spotted spider mites prefer grass plants, however as droughty conditions materialize they will move into crop fields. The last year widespread spider mite infestations occurred in corn and soybean fields in IL and IN was 2012. Spider mites undergo 4 life stages which are expedited in high temperatures and low humidity. They feed on crops including corn and soybeans by inserting their piercing/sucking mouthparts into plant cells to remove cell contents creating irreversible damage. Often, spider mites move into crops after road ditches are mowed and can usually be tracked by following the direction of a prevailing wind. Soybean damage appears as yellow discoloration showing up in a U or V pattern on field edges near grassy areas. Severe damage may result in stunted chlorotic plants with small or no pod production. Adequate coverage is critical when targeting spider mites with insecticides as they often situate themselves on the undersides of leaves and are typically present in large numbers. Applications targeting spider mites should include higher carrier volumes (20-30 GPA) and a proper surfactant to ensure canopy penetration and leaf wetting. Employ no less than 5 GPA in aerial applications

Spider Mite Recommendations:

Hero Insecticide 10.3 oz./A (Knockdown + Residual)

Hero Insecticide 5-6.4 oz/A + Dimethoate 16 oz./A Adding Dimethoate will provide an additional mode of action for resistance management, as well as extra knockdown.

HERO INSECTICIDE

Green Stink Bug Alert

Photo Taken in Mt. Vernon, IL – September 16, 2014

Recent field visits in Illinois and Indiana have confirmed green stinkbug presence. Below is an overview of lifecycle, feeding characteristics, thresholds and methods of control.

Green Stink Bugs – Green stink bugs overwinter as adults anywhere they can be protected such as under plant debris, boards, logs, in wooded areas and even indoors. In early summer adults become active and females lay eggs arranged in small groups on leaves. Nymphs hatch and undergo 5 stages over a 5-7 week period before reaching adult stage. The greatest numbers of adults are experienced from August-October which encompasses vulnerable pod and seed development stages in soybeans.

Scouting Tips – Scouting should begin in July and persist until all pods are mature. Green stink bugs are shield shaped and are the largest of the stink bug species with adults reaching near ¾'' in length. Nymphs appear mostly blackish with some orange markings and then turn green with dark spots down the center. Adults are green with black bands on the antennae. They also have a pointed spine on the lower side of their abdomen where the hind legs attach to the body.

Nymph
Photo by J. Obermeyer

Injury Symptoms – Stink bugs damage soybeans by inserting their piercing / sucking mouthparts which extract plant fluids. They prefer tender pods and developing seeds. However, vulnerable times for injury persist until mature pods are formed. Darkish spots will develop where the mouth parts puncture tissue which can sometimes be hard to see. The origin of plant impairment materializes from a reduction of plant fluids, injection of digestive enzymes, deformation and abortion of seeds and colonization of pathogens where the initial puncture site occurred. Delayed maturity and foliage retention can also occur from damage. Feeding on more developed seeds will result in shriveling and discoloration. All of these injury symptoms translate to lower seed quality and yield loss.

Pod feeding adult
Photo by J. Obermeyer

Treatment Recommendation – When determining if an insecticide application is warranted use a sweep net to make 10 sweeps in random areas throughout the field. Average stinkbug counts across sweep sites and if the average calculates to 4 or more stink bugs per 10 sweeps and the plants possess green pods an insecticide treatment is warranted. If soybeans are grown for seed or food grade consider lower thresholds for insecticide applications.

If treatment is warranted apply Hero® Insecticide at 5 oz/A.
The Pre-Harvest Interval is 21 Days.

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888-59-FMC-AG FMCCROP.COM

Always read and follow label directions. NOTE REGARDING RESTRICTED USE PESTICIDES: Anthem ATZ herbicide; Athena insecticide, Brigade 2EC Insecticide/Miticide, Brigade WSB Insecticide/Miticide, Brigadier Insecticide Capture 3RIVE 3D insecticide, Capture LFR Insecticide, Declare insecticide, Hero Insecticide, Mustang Insecticide, Mustang Maxx Insecticide, Pounce 25WP Insecticide, Stallion Brand Insecticide, Temitry LFR Insecticide/Fungicide, Triple Crown Insecticide, Ethos XB Insecticide/Fungicide and Gladiator Insecticide/Miticide are **Restricted Use Pesticides.** NOTE FOR CALIFORNIA: Accurate Extra herbicide, Aim herbicide, Aim EC herbicide, Aim EW herbicide, Anthem herbicide, Anthem ATZ herbicide, Anthem Flex herbicide, Anthem MAXX herbicide, Authority Assist herbicide, Authority Elite herbicide, Authority First DF herbicide, Authority MAXX herbicide, Authority MTZ DF herbicide, Authority XL herbicide, Cadet herbicide, Chisum Herbicide, Command 3ME microencapsulated herbicide, Crusher Herbicide, Edition Broadspec herbicide, Edition Tankmix Herbicide, Marvel herbicide, Nimble Herbicide, Nuance Herbicide, Preemptor SC fungicide, Report Extra Herbicide, Solstice herbicide, Spartan 4F herbicide, Spartan Charge herbicide, Spartan Elite herbicide, Temitry LFR Insecticide/Fungicide, Topguard EQ fungicide, Zeus Prime XC herbicide, Zeus XC herbicide, Capture 3RIVE 3D insecticide, Ethos XB Insecticide/Fungicide, Hero Insecticide, Mustang Maxx Insecticide, Display cotton harvest aid, Zoro Miticide and VGR Soil Amendment **are not registered for sale or use in California**. VGR Soil Amendment is not a pesticide. Beleaf and Carbine are trademarks of Ishihara Sangyo Kaisha, Ltd. Cercobin is a trademark of Nippon Soda Co., LTD. Sovran is a registered trademark of BASF. FMC, 3RIVE 3D, Accurate, Aim, Anthem, Athena, Authority, Brigade, Brigadier, Cadet, Capture, Chisum, Command, Crusher, Declare, Display, Edition, Ethos, Preemptor, Fracture, Fyfanon, Gladiator, Hero, Koverall, LFR, Marvel, Mustang, Nimble, Obey, Pounce, Report, Rhyme, Rovral, Shark, Solida, Solstice, Spartan, Stallion, Temitry, Topguard, Topguard Terra, VGR and Zeus are trademarks and HatchTrak and Investing in farming's future are service marks of FMC Corporation or an affiliate. 11/16

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