As we turn the corner into July and the heat of summer, insects and foliar diseases start to increase where monitoring their levels can result in big yield gains or losses at harvest time. Reducing damage from these foliar pests can help to reduce stress on the crop and lead to greater yields and better return on investment from all the inputs we have invested in so far this season.

**Western Bean Cutworm**

As corn nears tassel, we begin to look for the arrival of Western bean cutworm (WBC) moths. **Moth flight catches have been heavy since late last week in south central Nebraska. Daily catches at South Central Ag Lab have increased to the 200+ / night range since late last week.** Egg masses are already being detected in some fields starting this week and larva will begin to show up over the next seven to 10 days. We look for WBC flights to increase in northern and western areas of NE in the coming days.

- WBC lay eggs on the top side of the upper leaves of plants and prefer the taller, upright leaf corn in area. They can be easy to spot when the sun is shining through the leaf as you are scouting.
- Newly laid eggs are white for the first few days, then turn purple by the fifth day. Small larva prefer to move up to the tassel tissue. Survival is much lower if they feed on pollen or silk tissue only.
- Recent research has shown damage to be as much as 15 bu/A per one larva / plant.

We may see some larva hatch before tassel. Many times applications are delayed until fields are fully tasseled. Doing so can result in larva moving to the ear and getting inside before treatments. Experience has shown it is probably better to be a little on the early side for treatment than wait and have them get into the ear where they are much harder to control. Residual from applications that occur before tassel will control WBC larva as they are pushed out of the whorl and migrate to the ear.

**Hero Insecticide: 3-5 oz./A or Mustang Maxx insecticide: 3-4 oz./A** will provide excellent control through the WBC season. For extended residual targeting later infestations of second generation ECB, increase Hero Insecticide rates to 4-8 oz. Once WBC larva get into the ear, they are difficult to control, so applications should be timed to be at or before hatch for best control.

Tank-mixes can also be utilized by adding Lorsban insecticide at 8-16 oz to Hero insecticide or Mustang Maxx insecticide to provide a 2nd mode-of-action and also help in knockdown of other insects like CRW adults.

Historical thresholds for WBC are 5-8 percent plants with egg masses in field corn, with lower thresholds for seed and food-grade corn due to the higher value of corn and the secondary pathogens that also infest due to WBC damage.
**Corn Rootworm Adults**

CRW adult emergence is beginning as corn nears tassel, so a few reminders on managing beetles.

- 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. + Dimethoate 8-16 oz.
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.

**Japanese Beetles** have become a more common pest in the western Corn Belt in recent years. Japanese beetles are aggressive, heavy defoliators and can devastate corn and soybeans rapidly. In soybeans, treat if there is **20 percent or more defoliation**. In corn, the threshold is **three or more per ear and less than 50 percent pollination** as they are aggressive silk clippers and affect pollination.

**Thistle Caterpillar** - Also known as the Painted Lady caterpillar, they are a general defoliator of soybeans. We haven’t seen them in high numbers in quite a few years in the Corn Belt, but more are showing up in 2017. They can cause skeletonized leaves in soybeans. Treat if there is **20-25 percent or more defoliation** and beans are in reproduction stage.

**Hero Insecticide**: 5 oz./A  
**Mustang Maxx insecticide**: 4 oz./A  
**Stallion Brand Insecticide**: 9.25-11.75 oz./A
Alfalfa – Second & Third Cutting Protection From Potato Leafhoppers

Strong southerly winds this spring and early summer are the ideal recipe for potato leafhoppers. Several university extension newsletters have indicated leafhoppers in alfalfa this year. Leafhoppers migrate from the Gulf areas and infest alfalfa around the end of the first cutting. As second cutting comes off, watch the third cutting growth for yellowing, stunting and hopper burn damage and treat as soon as possible.

The photo to the left shows the difference between treat/non-treat when it comes to potato leafhopper. They are small, but extremely damaging to alfalfa yields and quality. The threshold for alfalfa less than 6” is one leafhopper in 10 sweeps of a net.

Potato leafhopper & aphid management to increase yields & forage quality:
- 6 - 9 oz./A Stallion Brand Insecticide
- 2.5 - 3 oz./A Mustang Maxx insecticide alone or with 4-8 oz./A Lorsban® insecticide
- Add chlorpyrifos to Mustang Maxx insecticide with high numbers of aphids also for stronger aphid control.
As corn nears tasseling and soybeans are flowering, the decision to apply a fungicide for disease control, increased stay green and grain fill, improved standability at harvest and higher yield potential is upon us. Preemptor™ SC fungicide from FMC provides outstanding disease control in corn with excellent residual.

**2017 Preemptor SC fungicide + Hero® Insecticide Soybean Yield Assurance Program.**
- Manage both insects and diseases for greater plant health and maximum yield potential.
- **Apply 5 oz./A of Preemptor SC fungicide + 5 oz./A Hero Insecticide.**
- Minimum of 3 bu/A yield increase over untreated or FMC will pay difference up to cost of fungicide + insecticide.
- Difference based on 10/2/17 CBOT closing soybean price.
- Soybeans stage: R1-R5 stage; R3 is optimal stage for maximum yield response.
- Application volume: 2 GPA – aerial / 10 GPA – ground.

_Grower must enroll by July 15, prior to treatment to be eligible. See FMC Star Retailer and Freedom Pass – Preemptor SC fungicide / Hero Insecticide document for complete details and enrollment._

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**Preemptor SC fungicide: flutriafole (triazole) + fluoxastrobin (strobilurin)**
- Preemptor SC fungicide has excellent curative as well as some of the longest residual control and preventive control available for row crops. It is a highly systemic fungicide and provides long-lasting disease protection.
- Rainfast in two hours
- Outstanding translaminar movement. Both actives are very mobile in plant xylem for leaf protection.
- Excellent plant health benefits: Reduced ethylene, higher yields and greater standability

**Diseases Controlled:**
- **Corn:** Common and S. rust, gray leaf spot, N. corn leaf blight, N. corn leaf spot, S. corn leaf blight, anthracnose leaf blight, eye spot.
- **Soybeans:** Frogeye leaf spot, pod and stem blight, powdery mildew, cercospora blight, anthracnose, alternaria leaf spot, rhizoctonia aerial blight, rust, white mold, sclerotinia stem rot. Also labeled for suppression of sudden death syndrome.
- For suppression of white mold, apply from late V-stages to R1-R2. Once soybeans canopy over fully, it is difficult to get spray coverage low enough in the canopy to manage white mold

**Application Guidelines**
**Corn:** V5 thru R4 (early dough) stage.
- **Recommended Use Rates:**
  - 5-6 oz. (V5-V10 stage) + NIS 0.25%
  - 4-5 oz. after tassel + NIS 0.25%
  - Do not include adjuvants from V8 to VT stage corn.
  - PHI: 30 days grain, forage, stover
  - Minimum of 2 GPA aerial or 10 GPA ground application volume.

**Soybeans:** Veg. thru R5 stage. **Optimum is R3 stage for highest yield potential.**
- **Use Rate:** 4-6 fl. oz./A.
  - Apply at R1 for suppression of SDS
  - Apply from late V-stages to R1-R2 for suppression of white mold
  - Do not feed forage or hay to livestock
  - PHI: 30 days

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**Preemptor SC Fungicide + Hero Insecticide**
**Application Timing & Yield Response in Soybeans**
**2016: FMC, Nebraska**

<table>
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<th>Stage</th>
<th>Yield (Bu/A)</th>
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<tr>
<td>R2 (7/12)</td>
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<tr>
<td><strong>Untreated</strong></td>
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*Grower must enroll by July 15, prior to treatment to be eligible. See FMC Star Retailer and Freedom Pass – Preemptor SC fungicide + Hero Insecticide document for complete details and enrollment._
Aim® EC Herbicide Recommendation for Grain / Forage Millets:

1) Aim EC herbicide 0.5-0.75 oz. + 2,4-D amine 0.5-0.75 pt. + NIS 0.25% v/v.
2) Aim EC herbicide 0.5 – 1.0 oz./A + NIS 0.25% v/v

• Not all millets may have adequate tolerance to 2,4-D, dicamba. Under hot, humid, rapid growing conditions, 2,4-D, dicamba can result in crop injury. Under those types of conditions, it may be best to apply Aim EC herbicide 0.75-1.0 oz./A alone rather than risk injury from growth regulator type herbicides.
• Aim EC herbicide in a tank mix provides excellent treatment of pigweed, kochia, Russian thistle, nightshade, lambsquarters, field bindweed, velvetleaf, wild buckwheat, mustards, buffalo bur, lanceleaf sage* and others.
• Best control when weeds are 4” or less. Weeds larger than 4” are difficult to achieve adequate coverage and control.
• Tank mixes with 2,4-D, dicamba should be applied to small millet from three to five leaf. Later applications can result in greater crop injury from growth regulator herbicides.

* University of NE and WY have shown 90+ percent control of lanceleaf sage and buffalo bur when Aim EC herbicide was used in tank mix combo with 2,4-D or 2,4-D + dicamba and was a significant improvement compared to treatments of 2,4-D alone.

Aim EC Herbicide – Post-Emergence Grain Sorghum

1) Aim EC herbicide 0.5 oz. + atrazine 0.5-1.0 lb.
2) Aim EC herbicide 0.5 oz. + atrazine 0.5-1.0 lb. + 2,4-D 6-8 oz. amine or dicamba 3-4 oz.
3) Aim EC herbicide 0.5 oz. + Peak® herbicide 0.33-0.5 oz. + 2,4-D amine 6-8 oz.

• All three treatments should be applied with NIS at 1 quart/100 gallon. COC is not recommended with Aim EC herbicide on sorghum except under very dry, stressed conditions. Do not apply COC with 2,4-D or dicamba products over sorghum
• Do NOT apply Aim EC herbicide when sorghum is wet from dew, rainfall or if rain is coming soon as crop response can increase
• Treat when sorghum is at least 5-6” tall up to prior to boot stage. Some crop response / leaf burn will occur, but sorghum rapidly outgrows
• Aim EC herbicide + atrazine is good for velvetleaf, pigweed, lambsquarters, nightshade, morning glory, field bindweed and others
• Add 2,4-D for improved control of ALS/triazine-resistant pigweed, kochia, devil’s claw, sunflowers and cocklebur
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, Ethics, 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. ©2016 FMC Corporation. All rights reserved.

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