BETWEEN THE ROWS

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As corn planters begin to roll it's important to understand pests and diseases which may show up in the early stages of the corn plant's life cycle. Early recognition and identification of the problem can help you be more confident, and timely, in making management decisions to protect your yield potential.

Seedling Blight – A common problem in the spring is seedling blight. It is usually not widespread, but often shows up in localized areas every year. A few prevalent examples of blights that affect corn include *Pythium, Fusarium, Rhizoctonia,* and *Asperilligus*. Even though they're all unique the best practices to prevent them are often the same.

Left: Shriveled mesocotyl from Seedling Blight. Right: Healthy mesocotyl

A number of factors influence germination each year. Generally, the greatest stress is associated with cool, wet soils. Seeds imbibe water at any temperature above freezing. But cool temperatures and cold imbibition of water will greatly slow seed metabolism. During a slow and challenging germination period seed and seedlings are much more vulnerable to seedling blight pathogens. Corn germinates very well in soil temperatures above 68^{0}F, but in soil temperatures below 55^{0}F germination is greatly delayed. Seedling disease is more likely to be found in early-planted or high residue fields because of the higher likelihood of cooler soil temperatures.

Seedling blight can be identified by digging up stunted plants or plants that have not emerged and examining the seed and the mesocotyl. If the seed is soft and rotten, or the mesocotyl appears brown and shriveled up, it's most likely the result of seedling blight. Damage to the mesocotyl or kernel before the establishment of the nodal roots can often result in unproductive or dead plants.

All Wyffels seed is treated with the Acceleron® Seed Treatment System which includes fungicides (*metalaxyl, ipconazole,*and *trifloxystrobin)* to help battle pathogens that cause seedling blight. These are very effective. But to ensure your best chance of avoiding seedling blight, be sure to plant in favorable conditions. That starts with an upcoming forecast that shows favorable conditions for optimum soil temperature.

Black Cutworm – There are several species of cutworm that attack corn in the Midwest, but the Black Cutworm poses the most serious threat. Depending on the size of corn plants when they attack, one black cutworm larvae can cut approximately four corn plants in its lifetime. Black cutworms do not overwinter in the Corn Belt, but the moths move up from the south with springtime winds and storms. The time and area in which cutworms will be most prevalent varies from year to year, but they most commonly move into the Midwest March through June. The moths are most attracted to, and will lay their eggs, in early spring vegetation—making no-till and fields with dense plant growth most susceptible.

Black Cutworm, Courtesy of University of Illinois Extension

Newly hatched larvae feed on weeds and/or young corn plants, leaving small irregular holes in leaves. This early feeding does little to affect yield of young plants, but it is a good indicator of the potential for severe damage by later instars of the cutworm. Larger larvae may notch the stems of corn plants below the soil surface causing them to wilt and die, or they can completely cut through stalks causing major stand reductions.

Economic thresholds vary based on the size of larvae and the stage of corn. For specific thresholds please refer to your local university IPM guidelines. Hybrids containing the Genuity® Smartstax® trait are labeled for black cutworm protection. Control can also be achieved with pre-plant or planting-time applications of soil applied insecticides. Rescue treatments

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are available if leaf damage is identified after infestation occurs.

White Grub – There are several species of white grubs in the Midwest. The most common species are the immature forms of May/June beetles and Japanese beetles. The grubs of May/June beetles have a three year life cycle, so if damage was noted the previous year, it could be seen again in those fields. Grubs of Japanese beetles only have a one year life cycle and it is unlikely they will pose a problem after mid-June.

White Grubs

There is no rescue treatment for white grubs. If a high population is discovered during tillage, or you are forced to replant because of white grubs, use a soil applied insecticide to control the population and protect young seedlings from feeding.

Wireworm – Wireworms are the larval stage of the chick beetle. They overwinter in the soil as both larvae and beetles. A larvae life cycle can span two to six years, so if you have fields with known infestations, even minor, they are more likely to have problems in following years. Wireworms will attack corn in a couple of ways. In freshly planted corn they will hollow out the seed, preventing germination. After emergence they will attack the plant by burrowing into the stalk, and sometimes all the way through it.

The first sign of wireworm damage is lack of germination, and you will find areas with only a few plants germinated. Continued evidence will be wilted seedlings from feeding that occurs after germination. Finally, on larger plants, you will see the center leaves of plants begin to wilt from wireworms that have burrowed though the middle of the young plant. Damage is most prevalent in cool, wet conditions. As soil temperatures warm and become drier larvae migrate deeper into the soil to find cool moist soil, which means little damage will occur after mid-June.

Wireworm, Courtesy of University of Illinois Extension

Damage is more likely found in fields with poorly drained soils, and also occurs more routinely in fields following small grasses like wheat, double-crop soybeans and fields previously in hay or pasture.

There are no rescue treatments for wireworms. But if you have a known infestation, the use of soil applied insecticide at planting can help control the population. If you are replanting because of wireworm damage it would be warranted to use a soil insecticide to control any pests still in the soil profile when replanting.

Corn Flea Beetle – The Corn Flea Beetle is a tiny black insect that overwinters in the beetle stage. As they emerge they will feed on plants by stripping away the top layer of plant tissue on the leaf. This leaves long gray or brown "tracks" etched on the leaf surface. Feeding damage can appear quite serious, but generally only sustains economic injury on plants or

Stewarts Wilt transmitted by Corn Flea Beetle.

seedlings less than six inches tall. The most serious problem caused by the flea beetle is its possibility to transmit Stewart's Bacterial Wilt. This disease can cause severe yield reduction. Sweet corn, popcorn, and inbred seed corn are most likely to be susceptible to Stewart's Wilt, but it is possible for hybrid corn to be affected as well.

The best way to protect against this pest is to identify beetle feeding early. When corn is not available the beetles will feed on other host plants, so look for areas of the field with heavy early season plant growth, as well as field edges. Normally, once a corn plant reaches V5 it is no longer susceptible to damage from the Corn Flea Beetle, so scouting for this pest must take place early in the season. If 50% or more of plants show damage a post-emergence insecticide treatment may be warranted.

Seed Applied Insecticide

A seed applied insecticide will provide suppression of these pests at lower levels of infestation. All Wyffels seed is treated with Poncho® as a part of the Acceleron® Seed Treatment System. Poncho will provide great protection of common pests not discussed in this article. It will also help to control low populations of the pests mentioned above.

Summary

Success in 2014 starts at planting. Ensure corn is planted into a favorable environment to maximize its chance of successful germination. Knowing the most susceptible fields will help you focus your scouting program. Timely scouting throughout May and June to detect early signs of pests and diseases will equip you with the information you need to make the appropriate management decision. Small reductions in stand and stunted plants can add up to significant yield reduction. Being aware of what to look for can make a difference in your success.