OUR SEED. YOUR SOIL. TOTAL SUCCESS.

Technical Bulletin
A publication of the LG Seeds Agronomy department

Issue 362: January 2018

Winter Kill of Insects

Leonard Luebker, CCA, Sales Agronomist – LG Seeds

Each year we have insect pressure from one or more insects in agriculture. Some insects that cause problems in corn and soybean production may be bothersome also to those not in agriculture. This past summer we saw an abundance of Japanese Beetles, and Pirate bugs. In past years, we have seen corn flea beetles, and soybean aphids. During the spring, summer and early fall, any insect may become a pest if the right environmental conditions exist. With a winter like now, with many areas reaching single digits and below zero temperatures, will we see less insect pressure this coming spring?

Here are a couple of insects, and how they may be affected:

Corn Flea Beetle.

Cold temperatures **do** have an impact on this insect. This insect attacks young corn plants early in the growing season and are a vector for introducing Stewart's wilt into the corn plant. In certain years, the pressure is high and the additional stress they put on the corn plants results in killing plants. Usually this is not the case, but under heavy pressure of the insect and environmental stress, it may be enough to kill the plant(s).

Winter effects on the Corn Flea Beetle:
For this insect, the average temperature of the months of December, January, and February, usually indicates if these will be present the following spring.

As one can see from the chart, the very cold temperatures should hamper this insect this coming spring.

Chart courtesy of Iowa State University - http://extension.cropsciences.illinois.edu/fieldcrops/insects/corn_flea_beetle/

Stewart's wilt forecast using the average monthly temperatures of December, January, and February

Average Monthly Temperature	Early season wilt probably will be	Late-season blight will probably be
<27° F	Absent or nearly so	A trace, at most
27-30° F	Light	Light to moderate
30-33° F	Moderate	Moderate to severe
>33° F	Severe	Severe

Japanese Beetles:

Many reports were received this last summer regarding the high populations of Japanese Beetles. They were not only seen in corn and soybean fields, but in high numbers in many people's yards, patio's, and gardens.

The Japanese beetle is known to feed on over 300 species of plants. In Agriculture, we think more in terms of corn and soybeans. This summer however, we saw high populations in roses, hibiscus, linden trees and grapes. They can be very invasive, and a huge pest in addition to the damage they do to the plants. The beetles from last summer laid eggs. These eggs hatched and now the larvae are 6" or deeper in the ground and protected from the cold temperatures. In the spring, the larvae in the ground will migrate to the surface, emerge as beetles, and start the life cycle all over again.

Temperature Swings:

In general, the best scenario for this winter changing the insect populations next year are major temperature swings. An example would be if we had 40-55 degrees, then dropping to 0 degrees, then warming again to 40-50 degrees, then back down to 0. Many insects protect themselves as the temperatures turn cold. When the temperature warms again, the insects may shed some of their cold protection, and then the second cold spell affects their survival rate.

If this past summer you had insect problems, you may or may not see them this coming year. If you had a specific insect problem, go on line, and check out the life cycle of that insect. This can give good insight how the cold temperatures will affect their population next spring and summer.

Sources and additional information:

1. http://extension.cropsciences.illinois.edu/fieldcrops/insects/corn_flea_beetle/
2. https://extension.entm.purdue.edu/fieldcropsipm/insects/corn-japanese-beetles.php
3. https://cropwatch.unl.edu/2017/japanese-beetles-soybean