**What is Disease Lesion Mimic in Corn?**

**WHAT TO WATCH FOR**

Corn has many Disease Lesion Mimics (DLM) that can be expressed through a variety of symptoms. One type of DLM, expressed as lesions between corn leaf veins, may look like lesions caused by other disease pathogens. Other symptoms may be necrotic or chlorotic, water-soaked spots.

**IMPACT ON YOUR CROP**

DLM may be more frequent in saturated or stressed fields and tend to be more uniform across fields than symptoms caused by corn disease pathogens. High incidence of DLM may reduce yield potential if the necrotic areas reduce tissues that photosynthesize. DLM water-soaked types of symptoms are less likely to impact yield potential.

**TIPS TO MANAGE**

Accurate diagnosis is extremely important as the confirmation of DLM could prevent unnecessary and ineffective fungicide application. There is no available seed product tolerance to DLM.

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**What To Watch For**

In the past, farmers across the Corn Belt have noticed lesions between corn leaf veins in a wide variety of corn products. Many are caused by various disease pathogens, but others are caused by Disease Lesion Mimic (DLM). These lesions, which vary in color from chlorotic to dark brown to translucent, show up as tiny spots or longer lesions (Figure 1). Some lesions have been found on the leaf sheath and stalk. Lesions may occur without causing damage to grain yield or quality. Others may spread rapidly over leaves and stalks, and contribute to lodging or plant death. Fungicides do not control spread of the lesions.

Lesions that appear as tiny spots near the tip of the first corn leaf about 3 to 4 weeks after planting may enlarge in size and merge with new lesions down the leaf blade, covering the entire leaf in 4 to 5 days (Figure 2). Lesions may move from leaf to leaf and up the plant, until the entire plant is covered. Impact on yield potential has not yet been defined.

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**Figure 1.** DLM lesions may be elongated (left) or appear as tiny spots (right).

**Figure 2.** Disease lesion mimic lesions can appear within three weeks of emergence, and may spread over the entire leaf.

**Figure 3.** Zebra stripe non-disease genetic mutation.

For additional agronomic information, please contact your Channel Seedsman.
What is Disease Lesion Mimic in Corn?

Impact On Your Crop

Corn, and other plants, may contain genes that cause cells infected with certain pathogens to die. These hypersensitive responses deprive the pathogen of nourishment and inhibit spread of the disease. Occasionally, plants exhibit these symptoms without a pathogen being present. A cause of non-disease DLM lesions (dead cells) are genetic mutants (Les/les genes) that result in lesion development without the presence of disease. Les/les refers to dominant and recessive genetic mutants, respectively. Scientists have identified more than 50 lesion mimic (Les/les) mutations in corn, and speculate that there may be many more. In addition to mimicking plant response to a pathogen, Les/les may also interfere with other cellular processes, resulting in cell death. These mutant genes have been identified across a wide variety of corn brands. While scientists are searching for definitive causes of Les/les induced lesions, some believe that environmental stress can be a trigger. Some DLM lesions seem to be more common in saturated fields exposed to bright sunlight and high temperatures. Farmers have observed an increased level of lesion development in irrigated fields and in corn following corn. Another example of a non-disease leaf abnormality caused by a genetic mutation is zebra stripe (Figure 3). However, zebra stripe is the result of a different mutation than Les/les.

Tips To Manage

Due to the fact DLM lesions appear very similar to symptoms of other diseases, such as gray leaf spot, eye spot, or viruses, farmers should send samples of affected leaves to a plant pathology lab for accurate diagnosis. Confirmation of DLM is extremely important as this result could prevent unnecessary and ineffective fungicide application. There is no available seed product tolerance to DLM. For further information regarding DLM identification, leaf sampling procedure and available diagnostic labs, farmers should contact their Channel Seedsman. Continuing research will be necessary to more definitively identify causes and potential remedies for DLM.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Channel® and the Arrow Design® and Seedsmanship At Work® are registered trademarks of Channel Bio, LLC. All other trademarks are the property of their respective owners. ©2017 Monsanto Company. 140820100335. 071717DLB

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