# Watch Out For Carryover

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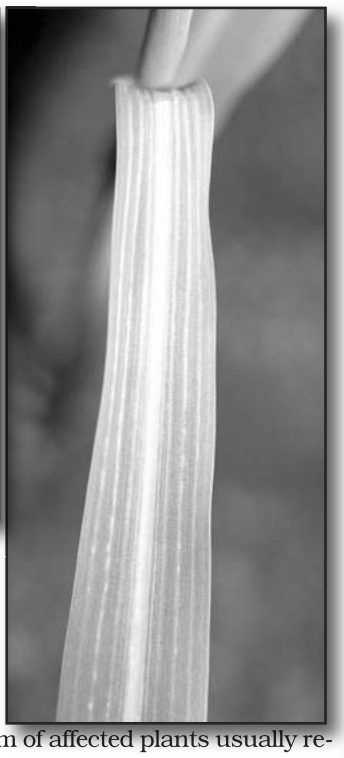
One thing corn growers should probably be aware of and look out for this spring is carryover injury from applications of herbicides that contain fomesafen. Fomesafen is the active ingredient in the herbicides Dawn, Flexstar, Prefix, Rhythm, and a variety of other generic products, and in recent years has become one of the most common active ingredients applied post-emergence for the control of glyphosate-resistant waterhemp in soybean.

Of the herbicides that we typically apply post-emergence in soybeans, fomesafen is one of the most persistent and has one of the longest periods of soil residual activity. Because of this soil persistence as well as the sensitivity of corn to fomesafen residues, the label of most fomesafen products like Flexstar and Prefix requires a 10-month rotational interval between fomesafen applications and corn planting.



**(Far Right) Figure 1. Fomesafen carryover on corn leaves appears as a clearing of the veins, known as veinal chlorosis.**

**(Right) Figure 2. Carryover injury to corn as a result of late applications of fomesafen made to soybeans the previous season, and dry conditions following application.**

There are two primary factors that influence the likelihood of fomesafen carryover injury to corn; 1) dry conditions following application, and 2) the rate and timing of the herbicide application.

Although most areas of the state received near average levels of precipitation during the fall and winter, there are some regions that have had below average levels of rainfall and snow during this same time period. Under especially dry conditions, the risk of fomesafen carryover injury to corn is much higher. Soil moisture is critically important for herbicide degradation. If adequate rainfall is not received after application, then the chemical and microbial processes responsible for herbicide degradation are reduced significantly and the herbicide molecules are more likely to become bound (adsorbed) to soil particles. All of this results in less herbicide degradation and increases the likelihood of herbicide carryover. Injury may also be more noticeable on sandy soils, as these areas are usually better drained and hold moisture for shorter periods of time.

The rate and the timing of the fomesafen application are two other factors that influence the likelihood of carryover injury to corn. Simply put, the higher the rate of fomesafen applied and the later the herbicide application was made, the greater the chance that some fomesafen may remain to cause carryover injury to corn. Since the labels of most fomesafen-containing products require a 10-month rotational interval between application and corn planting, late-season applications of these products in soybeans and early planting of corn the following spring can often make satisfying these intervals difficult.

The most common corn injury symptom caused by fomesafen carryover is a whitening of the leaf veins, commonly referred to as veinal chlorosis (Figures 1 and 2). Affected areas of corn leaves often take on a striped appearance, can become necrotic, and tissue near the leaf midrib may totally collapse in that region. The root system of affected plants usually remains normal.

What does all of this mean for growers who are planning to plant corn in an area that received applications of fomesafen last year? I think it means that corn growers should be more aware of the higher potential for herbicide carryover injury that can occur, especially in areas that have experienced dry fall and winter conditions, or in fields that received late or higher amounts of fomesafen than usual. The best practice is to follow the rotational intervals listed on the labels of the herbicides used and to consider the herbicide use history of each field in relation to the factors discussed above. If several of these factors suggest a high probability of fomesafen carryover, then it's probably a good idea to stay away from corn in these fields during the 2012 growing season. Δ

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