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## 2,4-D PRECAUTIONS

I have had some questions this week concerning 2,4-D use ahead of planting soybeans. Nothing has changed. 2,4-D is still one of the best excellent burndown herbicides for both corn and soybean systems and for tank mix partners. However, I have a concern when I hear about farmers pushing the envelope too far on rates used. I have never been a good gambler but that's what can happen when there is an urge for higher rates with glyphosate resistant weeds and not following true and tried recommendations for planting intervals.

The risk to corn or soybeans with 2,4-D use ahead of planting is injury to emerging corn or soybean plants if there wasn't an adequate interval of time with the rate used. For soybeans, there is a 7-day planting interval required when application of 1 pint of 2,4-D per acre (or 2/3 pt of a 6 lb LV ester formulation). If 2,4-D (4 lb/gal) is applied at a rate above 1 pt per acre in a burndown program, the planting interval should be 14 days for corn and 30 days for soybean but it depends on formulation.

Following the label guidelines minimizes, but does not eliminate, 100% of the time the threat of crop injury. The key issue is how much of the herbicide reaches the depth of the germinating seed and developing seedling in the soil.

It is important that soybeans are not planted too shallow with 2,4-D use ahead of planting and that LV ester is being used and not amine. Amine is water soluble and if soybeans were shallow planted, or slot is partially open and you catch a rain, amine is water soluble and can effect the germinating seed if the proper interval isn't used.

2,4-D is absorbed by soil colloids so generally movement by the petroleum based LV ester formulations is not as much as an issue on our silty clay loam soils compared to sandy, low organic matter soils. Dr. Bob Hartzler at ISU indicates since 2,4-D breaks down relatively quickly in the soil (approximately 10 day half-life), it is the rainfall that occurs within the first two weeks after application that determines the threat of injury. After this period the 2,4-D should have degraded to levels unlikely to injure the crop. Corn is most sensitive to 2,4-D when the herbicide is present in the water that is initially imbibed by the seed, this is why 2,4-D can be applied shortly after planting in corn.

The type of 2,4-D matters and labels reflect that. If an ester formulation is utilized, the preplant interval for soybean is 7 days following 2,4-D ester at 0.5 pounds active ingredient per acre (lbs ae/A) and 15 days following 2,4-D ester at 1.0 lb ae/A. If an amine formulation is utilized, the preplant interval for soybean planting is 15 days following 2,4-D amine at 0.5 lb ae/A and 30 days following 2,4-D amine at 1.0 lb ae/A. Therefore, caution should be exercised when matching a 2,4-D formulation to the cropping scenario.

Soybean 2,4-D injury symptoms include stem or petiole twisting or curling, opening of cotyledons underground and "leaf strapping" at about the V1 to V2 growth stage. Corn symptoms form 2,4-D injury include a corkscrew appearance to mesocotyls, hyperextension of mesocotyl (resulting in rootless corn/floppy corn syndrome), leafing out underground and "buggy whipping" at V1 to V2 stage.



2,4-D is a valuable tool in no-till systems, but it must be used properly to manage the risk of crop injury. In situations where the planting interval restrictions cannot be followed, alternative products should be highly considered and specific to types of weeds present. Ultimately read and follow your label guidelines of the products you are using. One wrong decision of too high of rate, made during a “fast and furious” planting time decision, could result in considerable crop injury especially if a rain happens at the wrong time.

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