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The importance of aerial spraying to timely product applications

Michael:

Following up on our recent conversation, I've been involved in production agriculture and the crop input supply business, heavily weighted to agronomy for over 40 years. Here are my thoughts on the importance of timely applications using 3 local crop production examples and situations.

The first is control of what can be a devastating disease pathogen in central South Dakota. *Fusarium graminearum* is the fungal pathogen that causes Head Blight in wheat. As recent as 2019 in South Dakota, *Fusarium* head blight (FHB) can and has reduced wheat yields up to 50%. Additionally, FHB typically produces a mycotoxin, deoxynivalenol (DON). DON is toxic to mammals at very low levels. If DON levels are over the acceptable threshold, the harvested wheat will be rejected and disposed of as unsaleable at the elevator. It's important to understand the threat from an FHB infection and not take it lightly.

With reference to managing FHB in Wheat, there are fungicides available to help control the pathogen. We know from field research that the spores produced by the pathogen enter the wheat plant through the flowers. The critical timing to make a fungicide application is Feekes growth stage 10.5.1. That is when the wheat begins to flower. In a practical sense the fungicide application window is generally around 3 days. That may seem like an ample amount of time to make an application to control FHB. Unfortunately knowing the plant physiology of winter wheat, fields generally all flowers at the same time over a very large geography. It's very common for 10's of thousands of acres to require an FHB fungicide application at the same time over a narrow geography in central SD.

Syngenta produces and markets a fungicide, Miravis Ace. The active ingredients in Miravis Ace are well positioned to manage FHB. We know from experience that aerial application is well suited for the application of Miravis Ace. Aerial application can accurately and efficiently cover thousands of acres in a narrow time window. Anything that can cause an application delay can and will cause a yield and quality loss from the pathogen. There are factors like wind and rain that are out of our control and put pressure on the application window. That's why it's even more important to manage things that are in our control like the placement of wind turbines.

The disease threat in central SD isn't limited to wheat. Plant disease management has grown exponentially as disease threats in South Dakota have increased and as the performance of fungicides like Miravis Ace and Miravis Neo has grown, so has the use of fungicides. Specific to corn, tassel applications of fungicides like Miravis Neo and Trivapro have clearly demonstrated yield and quality improvements. One of the key application timings on corn is the growth stage VT – R1, tassel and silk emergence. On an average year, the corn in central SD at VT-R1 is from 6 to 10 feet tall. Due to crop clearance issues that make it challenging if not impossible for a ground rig sprayer to make the timely application. Once again making aerial the primary application method of choice.

The pest threat isn't isolated to plant pathogens, it unfortunately extends to insect pests also. A specific example is the management of seed weevils and head moths in Sunflowers. Similar to the examples above, proper application timing is important for management of these two insects in sunflowers. The threat is the early flowering stage of the sunflowers. Similar to corn, aerial application is preferred over ground application due to the height and physical spacing of the target crop.

I've addressed key pest threats in three important crops that cover a high percentage of the crop acres in central South Dakota. Knowing the bigger picture, there are crop protection products and product labels that support aerial application on virtually all crops, including pastures in South Dakota.

I trust you will agree that we have an obligation to understand and mitigate the threats to South Dakota producers that can negatively impact our ability to produce a safe, wholesome and bountiful harvest.

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