Soil Insecticide Use On Bt Corn Expected To Increase This Spring Across Much Of Illinois

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What a difference a year can make. Many of us will recall the record-breaking warm temperatures of last March across the Corn Belt of the United States. Those temperatures fueled a rush towards planting in April and the earliest emergence of western corn rootworm adults that I have witnessed. On June 7, 2012, I reported that severe rootworm injury had already occurred in a cornfield located in Cass County along with plentiful adults that were causing considerable injury to the corn leaves. I don't anticipate a similar early emergence this season with snow still commonly found in many fields across the northern one-half of Illinois.

As I have done for many years, I used handheld clickers (Turning Technologies) to poll producers at the 2013 *Corn and Soybean Classics* held in several Illinois locations in January. Growers were asked if they intended to plant a Bt hybrid for corn rootworm protection in 2013? On average, for the five locations, nearly 92 percent (n = 568 responses) of the producers indicated that Bt hybrids would be targeted at corn rootworms for the upcoming growing season (Figure 1). The range in "yes" responses was 87.6 percent (Moline, n = 97 responses) to 95 percent (Champaign, n = 121 responses and Malta, n = 88 responses). Not surprisingly, and similar to previous growing seasons, the use Bt hybrids will remain a key tactic used by producers in 2013 for corn rootworm protection.

As more pyramided Bt hybrids enter the market place, the type of refuge used will continue to change in a very significant manner. In 2012, the traditional 20 percent structured refuge was still the dominant refuge approach used by producers in the Corn Belt. Based upon responses received at the 2013 *Corn and Soybean Classics*, this refuge strategy will no longer remain dominant for Illinois producers. Overall, the most common refuge (Figure 2) that will be used by producers who took part in these regional meetings will be the 5 percent seed-blend (refuge-in-a-bag) with 43 percent (n = 572 responses) indicating they will be moving in this new direction. The second most common refuge tactic will be the 10 percent seed blend (refuge-in-a-bag) with 31 percent relying upon this approach. Together, these data indicate that nearly 3 out of 4 producers who responded to this question will use a seed-blend as their refuge management strategy for corn rootworms. The advantages of a refuge-in-a-bag (RIB) are straightforward – convenience, ensured compliance, and favorable from a resistant management vantage point for western corn rootworms (based upon emergence patterns and inter-field dispersal dynamics of adults).In 2013, I anticipate a sharp increase in the use of planting-time soil insecticides with corn rootworm Bt hybrids. On average, nearly 47 percent (n = 571 responses) of producers indicated they intend to use both a soil applied (at-planting) insecticide with their corn rootworm Bt hybrid this spring (Figure 3). For the Moline meeting, nearly 56 percent (n = 93 responses) of the producers are likely to follow this strategy for 2013. From my perspective, the escalation of soil insecticide use along with corn rootworm Bt hybrids has been fueled primarily over concerns of Bt resistance and high commodity prices. Producers who intend to use a soil insecticide with their corn rootworm Bt hybrid this spring offered several reasons for this approach (Figure 4). On average, concerns over secondary insect infestations and Bt resistance were the top issues cited for this practice. However, nearly 27 percent of the producers acknowledged that they view the use of a soil insecticide with a corn rootworm Bt hybrid as "cheap insurance." Regarding the potential insect resistance management (IRM) benefits of a soil insecticide used in combination with a Bt hybrid, more research is warranted on this topic. In addition, I think it is worth mentioning that one of the key benefits touted concerning the use of Bt hybrids for corn rootworm management was the reduction of soil insecticide use. It is a bit surprising that 10 years after the first Bt hybrids entered the market place for corn rootworms (2003), that a heightened interest in the use of soil insecticides has surfaced in such a significant fashion. Δ

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