Slug Damage in Corn and Soybean

Slug damage can be an issue in no-till corn and soybean fields. Warmer winters may result in increased damage to corn and soybeans. While thresholds are not in place, understanding the life cycle of a slug, what damage they cause to crops, and scouting procedures can help determine if treatment options should be employed.

Lifecycle

The gray garden slug (Deroceras reticulatum) is the species of slug that most commonly causes damage to corn and soybean plants. In Ohio, where slug damage can be common, eggs generally hatch in late April in central Ohio and mid-May to late-May in northern Ohio. When winters are warmer, this timeframe can be moved earlier. Feeding from juvenile slugs generally becomes noticeable 1 to 2 weeks following egg hatch. As the juveniles develop into adults, significant feeding can continue to occur. In the fall, most adult slugs are fully developed and can lay eggs.

Crop Damage

Slug damage is generally worse when conditions (such as warm winters that accelerate slug development followed by later than normal planting) allow for crops to emerge when slug feeding is intense.

Corn. The growing point for corn is underground until around V5, after which it is within the whorl or stalk. Hence, slug damage to corn is usually in the form of defoliation. Loss of yield potential is generally minimal from defoliation on small corn. For example, 2% and 9% yield loss could be expected from 50% and 100% defoliation respectively on V5 or V6 corn.

Soybeans. Slug management in soybeans tends to be more critical than in corn as the growing point for soybeans is exposed to slug feeding upon emergence. If slugs feed under the cotyledons, plant death is likely and the effect of the slug damage on yield potential is related to stand loss. Defoliation is not expected to cause loss of yield potential until flowering begins.

Scouting

In April and early May, adult slugs and eggs can be found by looking through residue and observing the soil surface. The eggs are clear, half the size of BBs, and generally in clusters. Usually, in late May or early June scouting for defoliation from juveniles should begin. This is best done at dusk or shortly thereafter. Juveniles can be found feeding on plants or traveling across residue. While there are no thresholds, obtaining an average count per plant in corn fields and a count per square foot in soybean fields can help observe the population over time. Beer traps have been discussed with slugs, however they are more suited for the adult growth stage.

Management

Tillage. Removing residue with tillage can help decrease the slug population, and give corn a competitive advantage early in the growing season. However, most farms with high slug populations are often no-till for a reason, and tillage may not be an option.

Giving Corn and Soybeans the Advantage.

Practices that help crop emergence and vigor so that seedlings are as large as possible prior to juvenile slugs reaching their aggressive feeding stage, can help reduce slug damage. Practices could include planting earlier, using tillage, strip-till, or row cleaners. Warmer temperatures also favor crop growth and can help reduce the effects of slug feeding. Slugs prefer moist conditions, so drier weather, can decrease the risk of slug feeding.

Molluscicides. Insecticides are generally ineffective on slugs. Metaldehyde is the one molluscicide active ingredient available for use in the United States. Deadline® M-Ps™ is a common commercial product with metaldehyde as an active ingredient. It controls slugs by causing their mucus-producing cells to burst. Concentrations of metaldehyde products today are generally 3.5 to 4%, compared to 2% in the 1980’s and 1990’s. This increased concentration can help slugs consume a toxic amount of metaldehyde, which has been an obstacle in the past. Rates for several metaldehyde containing molluscicides are 10 pounds per acre. After application, there should be 4 to 5 pieces of bait per square foot. Efficacy of the treatment can be evaluated by tracking slug counts over time prior to and following the application, in addition to observing the level of feeding on any new plant growth.

There are also products that contain iron-phosphate for slug control, but they tend to have lower efficacy and higher costs than the metaldehyde products.


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