Slugs in Corn and Soybean

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Posted by: WCM Staff
6/10/2010 8:13 AM

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Eileen Cullen, Extension Entomologist

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Slugs are not insects, they belong to the class Gastropoda. This is important because insecticides are not labeled for slugs, and have no control effect on slugs.

Unlike snails, slugs do not develop a shell. They can move through relatively small holes and crevices in the soil or soil surface residue. Because slugs are active at night it is rare to find them during the day.

Juvenile slug Photo by R. Youngman (Virginia Tech University)

There are a few different species of slugs, most have one generation per year and overwinter in the egg stage. If winters are mild, adults can overwinter. Because field slugs can live 12 to 15 months, and eggs are laid in early spring and fall, overlapping generations of adult and juvenile stages can be present in the field. During dry, hot summer conditions, adult slugs enter a period of inactivity. Slug activity is at its peak in late spring and early summer, and again in early fall.

Cold, damp, overcast cloudy weather favors slug activity and delays crop development, extending the period of crop susceptibility to slug injury. Rainfall and saturated soils favor slug activity. When weather conditions and moist soil surface residue persist, slugs can be found in tilled fields with a normal amount of crop residue. However, no-till fields are more prone to slug damage than reduced tillage or conventional tillage fields.

Slugs feed on a wide host range, including corn and soybean. Crop injury may occur early to seeds and seedlings causing stand loss. Slug feeding can also cause defoliation in established stands. The slug mouthpart includes a tongue-like structure used to scrape its food as it eats plant foliage. Damage to corn leaves appears as streaks or holes, usually both. Damage to soybean is usually found on the lower part of the plant, eating partly or completely through the hypocotyl and cotyledons. Unifoliate leaves may be damaged before unfolding, making them appear distorted and tattered.

Slug feeding injury to corn Photo by T. Bay, UW-Extension Grant County (2008)

Damaged soybean seedlings
Photo by J. Obermeyer, Purdue University

With sunny, dry weather, as soil residue dries, established soybean and corn stands will outgrow slug defoliation from earlier in the season and treatment is not necessary. However, foliar injury by slugs to corn in the pre-whorl and early whorl stage and soybean in the early vegetative stages may delay crop development. If you've identified a field with slug damage, check to make sure new leaves are not defoliated and the plant is outgrowing damage. For example, you only see slug injury on older, lower leaves.

You will see foliar damage during the day when slugs are not active. Slime trails (dry mucus from previous movement of slugs across foliage) are a sign of recent slug presence.

Both corn in the early whorl stage and soybean in the vegetative stage can tolerate up to 40% defoliation without significant yield impact. There are no established economic thresholds for slug control in field crops. If weather conditions remain conducive for slug activity and crop development is being delayed as a result of feeding injury, treatment may be necessary.

Commercially formulated metaldehyde baits can be applied. These are slug baits, not insecticides. Treatments are expensive, typically in the range of $10 to $15 per acre. One trade name is "Deadline M-P's", and most other products have 'metaldehyde bait' in the trade name. Product information can be found in Crop Data Management System (CDMS) pesticide label database www.cdms.net/LabelsMsds/LMDefault.aspx?t=

If applying baits, follow label instructions. It is important that application takes place when slugs are still active, typically during periods of cooler temperatures (63 – 68 deg. F) and wet conditions favorable to above ground slug activity. For this reason, slug baits are often applied aerially. Remember, slugs will enter a summer period of inactivity.

Reduction of slug problems, once they have become established, is difficult because bait treatment only reduces slug activity by "buying time" to enable the crop to outgrow the problem. To deal with the problem long-term, occasional use of reduced tillage can decrease development of slug problems in no-till

fields. Mechanical devices on planters that remove reside over the seed furrow may reduce slug damage to seeds and emerging seedlings.