Armyworms: Did they hitchhike in, or decide they like the well-watered grass?

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This has been a problematic year for caterpillars in general and armyworms have been a particular problem in turfgrass. Considering the record prices for turfgrass this year, consumers have been sensitive to sod quality and overall turfgrass health. After installation, if quality and health of newly laid sod (i.e. this growing season) becomes compromised, especially from armyworms, the questions become “did the worms come from the sod farm?” and “should the grass be replaced or will it recover?” Knowing a bit about the life cycle of the armyworm moth can help answer these questions.

The fall armyworm is the caterpillar of a moth that arrives in Georgia almost every year. Even in relatively mild years the moths, or adults, do not survive our winters. Instead, moths move north form Florida each spring and summer on weather fronts, spreading from south to north until the entire state is reinfested. This process takes several generations of moths, which is why the worms usually appear in late summer and early fall in northern parts of the state. An armyworm moth can lay eggs in batches of a few dozen to several hundred eggs, allowing populations to grow rapidly throughout the summer. These eggs hatch after a few days and the caterpillars feed and grow for 2-3 weeks before pupating. A week or so later the new adult moth emerges to start the cycle again. In the warm weather of summer, the cycle takes about 4 weeks to complete with 14-17 days spent as caterpillars feeding on the grass. This means that for armyworm infested grass that has been established for 4 to 5 weeks, or more, it is unlikely the worms would have come from eggs laid at the production field. Unless nearby grass is infected, if infested sod has been in place for less than 14 days the worms potentially came from the farm. Armyworm moths are ubiquitous and indiscriminant between rural, where most sod farms are located, and urban areas. This simply means armyworms are likely to occur anywhere in Georgia and are not concentrated to turfgrass production fields. This makes identifying origin of infestation difficult when worms are noticed 2 to 3 weeks after establishment. Then, the size of the worms is important. If “big” worms (greater than ¾ inch) are observed within 14 days after planting, they likely came with the sod. However, if “small” worms are feeding on the grass it is more likely eggs were laid by adults after the grass arrived onsite.

Sod producers have a couple of options to prevent armyworms from being shipped with the grass. First and foremost, crewmembers should know what armyworms look like and be aware as they are mowing, harvesting or handling sod. It is especially important to check the field before harvest to be sure there are no armyworms. If the grass has ragged leaves or areas with stripped stems the sod should be tested to confirm the presence of armyworms. Simply pour soapy water on the spot to bring the worms to the surface. Birds spending time in some areas of the field and not others maybe an indicator of armyworm activity. Large armyworms are fairly easy to find. In addition to their size, they are more active during the day and their droppings, called frass, are usually obvious where they have been feeding. Small worms tend to stay down in the canopy during the day, and their feeding is less damaging and harder to see. Typically growers do not ship sod with medium to large worms. However, the smaller worms may not be noticed in handling and can make it into a shipment.

Insecticidal control of caterpillars in turf and sod is not complicated and when armyworm populations are high, like this year, making an insecticide application immediately following installation is recommended. There are a number of effective products that are relatively inexpensive, others are more expensive but offer better control of larger worms, and a few that give long-term protection
although at a premium price. All are more effective on small worms than on the large, mature “snakes” that are nearly ready to pupate. The pyrethroid insecticides (those active ingredients that end in \textit{thrin}) are contact insecticides that also kill by ingestion if caterpillars feed on treated grass. They are off patent – hence the many brands for what used to be sold as Talstar, Scimitar, etc. – and inexpensive, and effective for controlling small to medium size worms. Residual activity fades after a few days in the typical summer environment and following mowing of a sod field or home lawn.

Products containing spinosad are more costly but are effective and provide longer control. However, they do not move in the plant, so they do not protect new growth. The “gold standard” is chlorotraniliprole, sold as Acelepryn and is also in some combination products. This material is systemic in the plant and provides a dose-dependent residual activity. The more you apply, the longer it lasts. And, of course, the more it costs.

The insect growth regulators (IGR) Confirm and Dimilin are also available. They provide a different approach to insect control. In the case of Confirm, it is active only on caterpillars. Dimilin is a broad-spectrum IGR that stops development of immature insects so they cannot grow and turn into adults. It is absorbed into the grass, and remains active but does not move into new growth. Some sod producers have begun treating sod with Dimilin before harvest as a preventative, to keep any small worms from developing. It is safe for non-arthropod animals, including sod harvesters, landscape installers, and customers.

Keep the life cycle of the fall armyworm in mind when handling complaints. Sod that has been established for months before becoming infected with armyworms is not the responsibility of the sod producer or installer. Armyworm moths are continuously flying and are attracted to young succulent grass, so infestations of newly sodded lawns are common for 30 to 60 days after establishment. The practices associated with establishment, like irrigation and nitrogen fertility, promote growth which is characterized by succulent leaves. If armyworms are identified and controlled early, turfgrass recovery can be expected without needing to replace the sod. Caterpillars that show up at the 3-4 week time frame are of uncertain origin, and may require some compromise to maintain customer satisfaction. As fall approaches, the armyworm life cycle typically lengthens, changing developmental timing. Similarly, shorter days and cooler temperatures slow turfgrass growth.

Bullet Points

1. When armyworm pressure is high, like this year, an insecticide application immediately following installation is recommended to protect newly laid sod.
2. Understand the armyworm life cycle.
3. Armyworm moths are ubiquitous and constantly flying throughout Georgia.
4. It is the responsibility of the installer and end-use to regularly scout newly laid turf to catch infestations early.
5. Small caterpillars are easier to control than larger worms.
6. Armyworm infestations on newly installed grass may not have come from the sod farm.
7. Typical establishment practices promote favorable conditions for armyworm moths.
8. Small caterpillars are typically less than 2 weeks old.
9. Control is relatively easy and inexpensive from multiple products.
10. If identified and controlled early, armyworm infected grass generally does not need to be replaced.