



Pests and Pesticides in Child-serving Facilities: An IPM Newsletter

Fall Armyworms and School Ball Fields

Karen M. Vail

This year, my first fall armyworm (FAW) inquiry from East Tennessee arrived via a text message on August 18 (Fig. 1). But, the resolution was insufficient to see the hairs that typically cover the eggmass. Hence, we thought it was from another moth. However, photos the next day solved the mystery as hairs were readily seen covering the eggs (Fig. 2). Subsequent emails, phone calls, and text messages confirmed *Spodoptera frugiperda*, the fall armyworm, was present in the area. In addition, communications from other entomologists, Extension agents, pest management professionals, and homeowners confirmed FAW was very abundant this year and found throughout much of the state.



Figure 1. Initial fall armyworm eggmass image lacked the resolution needed to distinguish hairs. Credit: Tom Rison, Claiborne Co.



Figure 2. Hairs were readily visible on the eggmass in the follow up image the next day. Credit: Tom Rison, Claiborne Co.

By August 20th, I had posted to our Facebook site, [@UrbanIPMTN](#), that we needed to prepare for an FAW onslaught in this part of the state. FAW don't overwinter in Tennessee, and every year they fly northward from Florida and Texas. Although FAW can typically be found in Tennessee every year, they arrived earlier than expected and in more significant numbers this year. Texas had sounded the FAW warning bell back in June and my West Tennessee colleagues echoed that response by July 23rd.

Special Points of Interest

Subsequent communications from other entomologists, Extension agents, pest management professionals as well as homeowners confirmed *Spodoptera frugiperda*, the fall armyworm (FAW) was very abundant this year and found throughout much of the state.

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Figure 3. First instar FAW larvae in bottom left leaving the eggmass Credit: Tom Rison, Claiborne Co.

The first instar larvae that hatch from the egg in 2 - 3 days (Fig. 3) are a little less than 2 mm long. Larvae complete their six instars in as quickly as 2 weeks and a mature larva (Figure 4) may reach more than 1 1/3 inches long. It is at this late instar stage that most plant damage occurs. When very abundant they will march across a landscape like an army to find more plant matter. Not only will these large larvae drastically defoliate

crops, such as sweet corn, soybean and alfalfa among many others, in just a few days, they can do the same to grasses including those in pastures and hayfields. Of course, the reason I'm bringing this to your attention, is that they'll also defoliate grasses in your soccer and football fields. A point you're probably very well aware of as you watched previously green areas turn brown (Figure 5). Most established grass sites can handle near complete defoliation as long as it isn't already stressed. Fortunately, it had rained recently before the onslaught so the grass wasn't drought stressed. And lawns are regularly defoliated when mowed. The greatest risk was to newly seeded lawns or freshly placed sod. Although this species typically prefers Bermudagrass, I've received reports from county agents that FAW was also feeding on fescue.



Figure 4. The late instar larvae are responsible for most of the plant damage. Credit: Tom Rison, Claiborne Co.



Figure 5. Grass was known to change from green to brown overnight as late instar FAW quickly defoliated it. Credit: Tom Rison, Claiborne Co.

So how can we be better prepared to handle this pest in the future? Frank Hale, UT Extension Horticulture Entomologist, suggests *that you check for fall armyworms and other caterpillar pests in turfgrass by preparing a soap solution of 2 teaspoons of liquid dishwashing detergent in a gallon of water. Pour this solution over a 2-foot by 2-foot area (4 square feet). These caterpillars will be forced to the surface by the irritating soap solution. Sample periodically through summer and treat when any populations of these caterpillars are detected. Control is best done when the caterpillars are in their early stages and still small. If not treated, they can reach high population levels and totally defoliate fields or yards.* Others suggest that many paper wasps hovering over a field may indicate a caterpillar problem because wasps are predators of these insects. Multiple paper wasps in an area should trigger a closer inspection. Look to your county Extension agents' social media posts about pest outbreaks in your area or keep your eye on our Facebook site to hear of these pests' arrival.

So what can be done if FAW larvae are found feeding on grasses in your ball fields? If you are inspecting the turf frequently, FAW should be detected when the larvae are small and thus, insecticides are more likely to be effective. Reports from West Tennessee indicated pyrethroids were not doing very well against this pest, but later reports from Middle Tennessee indicated pyrethroids were effective. This year, pesticide choices may have been limited by the time FAW were found in Tennessee because of supply chain issues. Based on information from West TN, we were suggesting active ingredients such as spinosad or chlorantraniliprole, but it appears pyrethroids may have been a viable option as well. Sprays will typically work faster than granules. Potential products to use against fall armyworm on turf are listed in PB1342 Commercial Turfgrass Insect Control <https://extension.tennessee.edu/publications/documents/pb1342.pdf>. Be sure to follow all re-entry intervals and ensure the product chosen lists armyworms and athletic fields. Some of the products listed in PB1342 are for sod farm use only. Even if the pesticide re-entry intervals are less than a day, it would be wise to wait until the next day before allowing students to access the treated area. (Products to use against fall armyworm in your home lawn can be found at <https://extension.tennessee.edu/publications/Documents/PB1158.pdf>)

Who can apply pesticides to school athletic fields? If a pesticide applicator is charging a fee for their services at schools, they need to be certified by the Tennessee Department of Agriculture (TDA) or working under someone licensed by TDA and have a charter with bond and insurance. Applying pesticides outdoors requires category 3 certification and an HLT licensee. (Applying pesticides indoors requires certification in category 7 and a GRC licensee.) If volunteers are applying pesticide (and not charging a fee), then no certification is required. However, all pesticide applicators must follow all directions on the label of the pesticide they are applying.

More information on fall armyworms can be found at

Fall armyworm, Featured Creatures, at https://entnemdept.ufl.edu/creatures/field/fall_armyworm.htm

Stewart, Scott. 2021. The fall armyworm invasion is fierce this year – and scientists are researching how to stop its destruction of lawns, football fields and crops. The Conversation. <https://theconversation.com/the-fall-armyworm-invasion-is-fierce-this-year-and-scientists-are-researching-how-to-stop-its-destruction-of-lawns-football-fields-and-crops-167098?fbclid=IwAR1TVFNJTmFFPyj3iiKN39QKGXC-7K1LRVSBXA77v845S6g6M9g0C-Z-XfU>

National Report on the State of Public School Facilities

Karen M. Vail

Most of our contacts for each school system are facilities directors so I know you already understand the urgent need to improve school facilities across the nation. I wanted to share the link to the “2021 State of our Schools Report: America’s PK-12 Public School Facilities” <https://resources.wellcertified.com/tools/2021-state-of-our-schools-report/> and the press release which is a shorter summary of their findings, <https://resources.wellcertified.com/resources/press-releases/state-of-our-schools-2021>. This report highlights the need for a greater influx of federal funds to resolve these issues as the current model of predominantly state and local funding is failing miserably. Hopefully, you realized the inadequacies of your heat and air systems to provide fresh air during this COVID-19 crisis and used some of Elementary and Secondary School Emergency Relief (ESSER) funds to make much-needed improvements. I heard many HVAC experts talking about these ESSER funds as being a once-in-a-generation opportunity to make improvements. However, this report suggests that much more effort will be needed to resolve the ever expanding problems associated with the school physical environment.

2021 STATE OF OUR SCHOOLS

AMERICA’S PK-12 PUBLIC SCHOOL FACILITIES

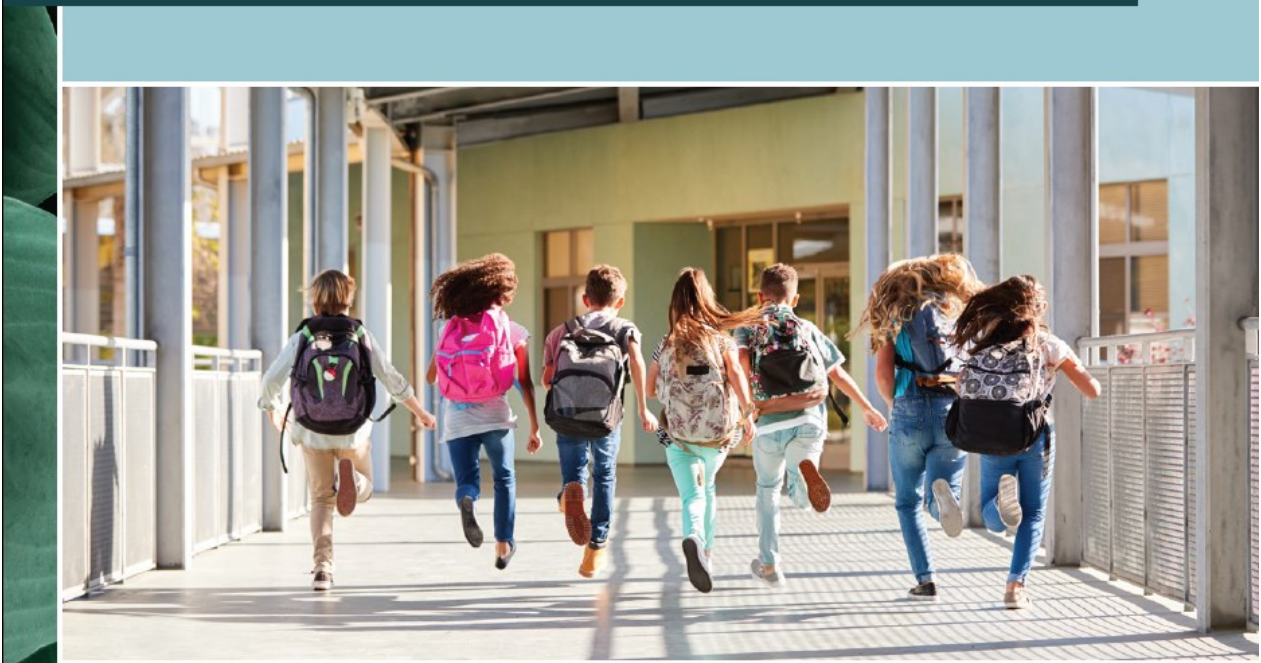


Photo source: 2021 State of our Schools Report: America’s PK-12 Public School Facilities” <https://resources.wellcertified.com/tools/2021-state-of-our-schools-report/>

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Partial support for this newsletter provided by the USDA
 NIFA CPPM EIP grant (# 2017-70006-27287) awarded to the
 University of Tennessee.

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For more information about IPM in Tennessee schools and other facilities, or to view past issues of *Pests and Pesticides in Child-serving Facilities*, please visit <http://schoolipm.tennessee.edu>

NATIONAL IPM INFORMATION

eXtension's Pests in the Home
<https://pestsinthehome.extension.org/>

National School IPM
schoolipm.ifas.ufl.edu/

IPM in Schools Texas
<http://schoolipm.tamu.edu/>

IPM Institute of North America
www.ipminstitute.org/

School IPM PMSP—all schools IPM by 2020 [https://
 ipminstitute.org/projects/school-ipm-2020/](https://ipminstitute.org/projects/school-ipm-2020/)

EPA schools
<http://www2.epa.gov/managing-pests-schools>

For further information about the IPM program at your school or in your county, contact your county Extension Agent or the school IPM Coordinator. For county agent contact information, please visit <https://utextension.tennessee.edu/office-locations-departments-centers/>

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

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