



# Pest e-alerts



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Entomology and Plant Pathology, Oklahoma State University  
127 Noble Research Center, Stillwater, OK74078  
405.744.5527

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## Fall Armyworms Beginning to Invade Turfgrass

Eric Rebek, Extension Entomologist



Last month, Dr. Tom Royer, Extension Entomologist, wrote an article (Vol. 13, No. 24) warning ranchers to check their pastures for fall armyworm. Infestations were observed in bermudagrass pastures mid to late July, and it seems subsequent moth flights are producing larvae that may be poised to invade lawns, golf courses, sod farms, and other landscapes. Dr. Dennis Martin, Extension Turfgrass Specialist, has observed fall armyworm populations reaching densities of 10 to 15 larvae per square foot in

research plots of tall fescue at the OSU Botanical Gardens. Thus, it is time to discuss the biology and management of these defoliating pests for residential and commercial turfgrass.

Fall armyworms are surface-dwelling "climbing cutworm" caterpillars. They prefer to eat grasses, and often go unnoticed until they become large and their feeding damage becomes evident. Fall armyworms tend to prefer tall fescue, but they also feed on bermudagrass and other turfgrass species. Larvae develop through 6 instars. One generation of fall armyworm can develop in about 18-28 days, depending on temperature, and infestations may occur until the first "killing frost". In Oklahoma, there are 2-3 generations present from late July through late October. Fall armyworm cannot overwinter in Oklahoma, hence its arrival later in the growing season.



Mature fall armyworms measure 1½ inches long when fully grown. Their body color can range from green to brown or black, and they have a distinct stripe along each side of the body. Their head capsule has a prominent, inverted, white "Y" at the front. A magnifying glass or hand lens may be needed to see this characteristic on smaller larvae. Small larvae do not consume the entire leaf tissue but instead scrape off all green tissue, leaving a clear membrane that gives the leaf blade a "window pane" appearance. Larger larvae (4th through 6th instars) can chew through the entire leaf. On golf courses, fall armyworms may migrate to greens and cause damage similar to black cutworm.



Feeding activity by flocks of birds can serve as a sign that armyworms are present. Fall armyworms can be detected through close examination of the turf, or by using a soapy water flush. A soapy water flush involves mixing 1 tablespoon of lemon-scented dish soap per gallon of water and pouring the solution over several small areas of damaged turf. If present, larvae should be visible within 30 to 60 seconds as they become irritated by the soapy water and leave their hiding places in the thatch.

If 3 to 4 larvae are found per square foot, treatment may be warranted in commercial turf or golf courses. For homeowners, carefully consider the need to control fall armyworms. Some cool-season turfgrass could recover from a fall armyworm infestation late in the year without treatment, and bermudagrass and zoysiagrass lawns may be only slightly damaged and not warrant treatment. However, early indications this year suggest chemical treatment will be needed in many areas, especially for protecting cool-season turfgrass.

There are many insecticides that are registered for control of fall armyworms that can provide excellent control. I've provided several suggestions below for both commercial applications and homeowner use. Note that products containing microbial active ingredients (i.e., Bt and spinosad) should be applied when caterpillars are small for maximum effectiveness. If choosing between granular and liquid applications, keep in mind that granular products are a bit slower acting, and require watering for activation. As always, read the insecticide label for important information about using the product safely and effectively.

Active Ingredient	Class*	Trade Names	Use
<b>Acephate</b>	1B	Orthene Turf, Tree & Ornamental WSP	C
<b><i>Bacillus thuringiensis</i> var. <i>kurstaki</i> (Bt)</b>	11A	Safer Garden Dust Dipel Pro Javelin WG	H C C
<b>Bifenthrin</b>	3A	Ortho Max Pro Talstar† Onyx Pro†	H C C
<b>Carbaryl</b>	1A	Sevin 80 WSP GardenTech Sevin Lawn Insect Granules	C H
<b>Cyfluthrin</b>	3A	Tempo Bayer Advance Power Force Multi-Insect Killer	C H
<b>Deltamethrin</b>	3A	Deltagard Turf & Ornamental Deltagard G Enforcer BugMax Insect Killer Conc.	C C H
<b>Indoxacarb</b>	22A	Provaunt	C
<b>Lambda Cyhalothrin</b>	3A	Demand CS Demand G	C C
<b>Permethrin</b>	3A	Astro† Perm-up 3.2 EC†	C
<b>Spinosad</b>	5	Conserve SC Turf & Ornamental	C
<b>Trichlorfon</b>	1B	Dylox 80 Turf & Ornamental Dylox 6.2 G	C C

\* Rotate among different pesticide classes to reduce risk of insecticide resistance developing in the target population

† Restricted Use Pesticide

C=commercial, H=homeowner

## References

Brandenburg, R.L. and C.P. Freeman (eds.). 2012. Handbook of Turfgrass Insects, 2<sup>nd</sup> Edition. Entomological Society of America, APS Press.

Capinera, J.L. 1999. Featured Creatures: Fall Armyworm. Available online at:  
[http://entnemdept.ufl.edu/creatures/field/fall\\_armyworm.htm](http://entnemdept.ufl.edu/creatures/field/fall_armyworm.htm).

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### **Dr. Richard Grantham - Director, Plant Disease and Insect Diagnostic Laboratory**

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