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Anticipate



Ants are the most common school pest in many states and their presence frequently stimulates both necessary and unnecessary pesticide applications. By far the most notorious of all ant pests to cause havoc around homes, schools, childcare facilities and any facility with playgrounds or landscaped areas are the



Class: Insecta

Order: Hymenoptera

Family: Formicidae

Genus: Solenopsis

While there are nearly 300 species in the cosmopolitan *Solenopsis* Genus, relatively few are pest species, but those that achieve pest status are infamous due to their ability to inflict a notable sting.

Here at the University of Arizona our go-to-guy on all things that sting is Adjunct Professor and author of “The Sting of the Wild” Dr. Justin Schmidt. Justin in boldly conducting his research has been stung by many insects, and has accordingly compiled 83 different sting experience reports, attributing a Schmidt Sting Pain Index to each. Our native fire ants register a 1 on the Schmidt Sting Pain Index (SSPI), and even Red Imported Fire Ants and Black Imported Fire Ants don’t rate any different. Ant species feature high on Justin’s top 10 most painful sting experiences, and he gives the top most painful 4 out of 4 spot to the Central and South American bullet ant.

Justin describes native fire ants as a common nuisance to anyone with a yard, but judges their venom to be relatively mild. If stung by a native fire ant Justin says that you can expect a sting to be “sharp, sudden, mildly alarming. Like walking across a shag carpet and reaching for the light switch.” Red imported fire ants are more aggressive and a higher number of stings may occur very quickly. Fire ant venom contains alkaloid compounds called piperidines that are quite frankly super nasty toxins. Piperidines are neurotoxic (altering the normal activity of nerves), cytotoxic (causing cell damage), and hemotoxic (destroying red blood cells and causing tissue damage). Piperidine compounds in the venom of different species are unique to that species, so reactions differ accordingly. Red imported fire ant stings



The Red Imported Fire Ant
Solenopsis invicta – Alex
Wild, www.alexanderwild.com

quite commonly cause pseudopustules (blisters full of sterile tissue serum) to form, while native fire ant stings typically do not, or they are less far severe.

How does that all feel? Well irrespective of fire ant species it feels rather like a burning sensation. But the most significant risk associated with both native and imported fire ants is not the sting but potential hypersensitivity allergy responses which can be life-threatening. People vary greatly in their sensitivity to stings. Some may experience short-term sting-site discomfort, while others may be hypersensitive to venom or may have medical conditions (e.g., heart condition, diabetes) that can result in serious medical complications. Individuals with a history of severe allergic reactions to wasp, bee or ant stings should consider carrying an epinephrine auto injector (**EpiPen**) and should wear a medical identification bracelet or necklace stating their allergy. Around 1% of children and 3% of adults are allergic to Hymenopteran (bees, wasps, and ants) insect stings making fire ants a high priority pest for school and childcare facility managers.



Solenopsis sp. - Shutterstock

Individuals should take the following steps if fire ants sting them:

1. **Remove the stinging ants.** The best method is to rub off ants briskly by hand or using a cloth, as they will attach to the skin with their jaws.
2. **Over-the-counter antihistamines** (anti-allergy products) may help for minor stinging incidents. Follow directions on packaging. Drowsiness may occur.

3. Seek emergency medical attention immediately if a sting causes difficulty breathing, swallowing, fainting, chest pain, nausea, severe sweating, loss of breath, serious swelling, or slurred speech. Anaphylactic shock can be life-threatening.



The Red Imported Fire Ant
Solenopsis invicta – Alex Wild,
www.alexanderwild.com

Avoiding Fire Ant Stings

The best way to avoid medical emergencies associated with fire ants is to **prevent contact with fire ants**. Here are some helpful tips to reduce encounters with fire ants:

- **Educate home or building occupants about fire ants, and discourage children from disturbing ant colonies.** Take care not to stand on or near them. Fire ants build colony mounds in sunny, open areas such as lawns, playgrounds, ball fields, parks, golf courses and along road shoulders.
 - Red imported fire ant mounds are often large and easy to spot. Mounds may be 4-24 inches above ground.
 - Native fire ant colonies are usually much smaller and may appear as patches of loose soil or irregular bare ground with one to many openings. They are often located in warm, sunny areas near moisture and may not be obvious at all.
- **Encourage people to report suspected fire ants, especially if stings are occurring.** Most types of ants have workers that are all similar in size, but fire ant workers regularly come in a variety of different sizes, giving you a clue that you could be looking at fire ants specifically.
- **Wear protective clothing** when engaging in outdoor activities near fire ant colonies. Wear boots and tuck pant legs into socks.
- **Control ants** where they occur in areas used frequently by people and pets. Use an EPA-registered bait to eliminate fire ants.
- **Use quick defensive reactions if you spot ants on your person.** Remove the ants that climb up on your body as quickly as possible.
- **Watch for foraging ants** (ants looking for food or water). Edges of water bodies, trash cans and areas with spilled food or sugary drinks become areas where large numbers of foraging worker ants congregate.
- **Sometimes fire ants invade indoors.** This is particularly common when conditions outdoors become very hot and dry or when flooding occurs in the immediate landscape. Alternatively they may be inside simply to forage on available food.



Red Imported Fire Ant *Solenopsis invicta* colony mounds – Alex Wild, www.alexanderwild.com



Native Southern Fire Ant *Solenopsis xyloni* colony mound – Shaku Nair, University of Arizona

It's September and ants are stinging outside and foraging inside – HELP!!!!

When it comes to eliminating fire ants we call Auburn University fire ant expert Dr. Lawrence “Fudd” Graham. If we called him now declaring a fire ant frenzy, he’d remind us that we should have been scouting fields and taking the matter in-hand a few months ago. For schools which do shut down for the summer, that’s the ideal time to check turf and remediate hotspots before they get out of hand and before students return to school. Here are some critically important management tips from fire ant experts:

- 1) Identify your ants, most ants are beneficial and should not be eliminated. Also, using an inappropriate control method for an ant pest can make the problem worse.
- 2) “Red ants”, “piss ants” or “sugar ants” are **not** specific ants, but rather general terms used to refer to unidentified troublesome ants. Unidentified ant presence is not enough information to determine what needs to be done, if anything (see point 1).
- 3) There may be lots of worker ants, but there are relatively few queen ants, and they don’t tend to wander around much above ground. You can spray a contact pesticide and kill a lot of worker ants, but unless you are **baiting** you are not managing your ants. Ants share their food between individuals in the colony, and bait formulations exploit this behavior. Your goal should be to have the worker ants collect the toxic bait, and happily carry it back to the colony and deliver it to queen.

When it comes to fire ants there are fast-acting, slow-acting and combination bait options. Baits that have active ingredients that kill the adult workers are the fastest. If you are in a hurry, a fast acting bait product with indoxacarb (e.g. Advion®) will usually work in 3-10 days. Baits with hydramethylnon (e.g. Amdro® and Amdro® Pro), spinosad (e.g. Fertilome® Come and Get It!, Green Light® 21029 Fire Ant Control With Conserve and Payback® Fire Ant Bait), or abamectin (e.g. Ascend® and Award® II) will work within 1-4 weeks. Baits with insect growth regulators, such as methoprene (e.g. Extinguish® Professional) or pyriproxyfen (e.g. Distance®) as active ingredients work slower and take 1-2 months to work, but tend to provide longer control. Extinguish® Plus is a mixture of hydramethylnon and methoprene. It usually produces results in 1-4 weeks, but the addition of the growth regulator tends to provide longer control than hydramethylnon alone. If you get well organized you can use extremely inexpensive, long-lasting baits that manage the problem very well with minimal applications. If the area is small, individual mound treatments will work. If the area is larger, broadcast applications of the bait are easier. To determine if ants will pick up the bait on the day you want to treat, put a potato chip or a small pile of bait on the ground. Come back in 15 to 30 minutes. If fire ants are present, it is a good time to bait. During hot weather, do not apply bait until late in the afternoon.

- 4) Improve the health of your turf. The better the turf, the less welcome native fire ants feel. Most of the native species prefer relatively bare, sunlit soil. Resolve compaction issues with organic acids and aeration, fertilize and irrigate appropriately. Most importantly, avoid using herbicides on field edges or scalping the turf with weed eaters. Bare edges are colonized very rapidly. Need help with turf issues? Reach out to your Land Grant University Extension turf experts, most states have one find yours:

<http://www.usna.usda.gov/Education/LandGrantColleges.pdf>

5) Fire ants may forage inside, but indoor pesticide treatments are pointless. Outside colonies need to be **baited** and foraging ants should be evident outside (although they can enter buildings via cracks in foundations). Vacuum or mop-up ant trails and most importantly **the food resources the ants are there to collect**, and cordon-off the area until the ants have gone.

6) Cleaning up inside is important. Consider pet food, pop spills, and food shrapnel **gourmet** fire ant food.

7) Drenching a mound with two to three gallons of almost boiling water can eliminate a problem ant colony about 60 % of the time, but it will also kill plants the water contacts. This method is useful if there are a limited number of colonies. Remedies, such as applying instant grits, molasses, aspartame or club soda to ant mounds, do not work. **Pouring chlorine, ammonia, gasoline or diesel fuel on mounds contaminates the soil and groundwater, is highly dangerous, just don't do it.** Residents have literally burnt homes and buildings to the ground using these tactics.



Native fire ants found a mop used to clean up a pop spill in school (while the custodian was on break). It happens that fast! – Jerry Jochim, Monroe County Community Schools

To completely eliminate a colony, it is necessary to kill the egg-laying queen(s)

For more information about fire ant stings and how to treat them, read [Fire Ant Stings](#) on [eXtension](#).

To learn more about treating anaphylactic shock and first aid in an emergency situation click [here](#).

To learn more about fire ant lifecycles and biology click [here](#).

To learn more about control methods of fire ant click [here](#).

Submitted by Dawn H. Gouge, University of Arizona & Lawrence “Fudd” Graham, Auburn University.

Bed Bug Battle - We Want to Hear From you

The University of Arizona and several partnering research institutions are working to battle the bed bug resurgence in the United States. Researchers hope to determine the real impact and social cost of bed bugs, the risks to individuals and society, as well as the significant causes of infestations.

Please help us in the project by completing an online bed bug survey. This survey asks brief questions on how bed bugs affect your life, how bed bugs cause people stress, and what people do when trying to get rid of them. This voluntary survey should take about 10 minutes. The survey is available in English and Spanish. There is no compensation available for your participation. Your answers are anonymous and confidential while you contribute information that will help us battle the pesky parasites.

Who should take this survey? Everyone! We would like to hear from people who currently live with bed bugs, people who have dealt with them in the past, and people who have never experienced bed bugs. We are dedicated to helping community members who need it most, and sharing your experience will be extremely helpful to develop strategies to reduce the bed bug problems.

English version of Bed Bug survey: <http://www.surveymonkey.com/s/DGLQS52>

Spanish version of Bed Bug survey: <https://es.surveymonkey.com/s/F5NZXJK>

New Publication about Mosquitoes

The University of Arizona has recently published a new Extension publication “Mosquitoes: Biology and Integrated Mosquito Management”. It covers the basic biology of mosquitoes, the key mosquito species in Arizona and how to prevent and manage mosquitoes – fight the bite. To learn more about this publication, please view <https://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1706-2016.pdf>

Webinars and Events

Attend Free Sessions of the [Green Strides Webinar Series](#). View archived webinars [here](#).

Please join in for the [2016 All Bugs Good and Bad Webinar Series](#). This webinar series provides information about good and bad insects. Webinars are free and open to everyone.

Webinars will be on the **first Friday of each month at 2 p.m. Eastern time**. The webinars are brought to you by the following eXtension Communities of Practice: [Imported Fire Ants](#), and [Urban IPM](#); and by the [Alabama Cooperative Extension System](#), the [Texas A&M AgriLife Extension Service](#), and the [University of Georgia Center for Urban Agriculture](#).

Upcoming webinars include:

1. Don't Use Too Much Pesticide or Fertilizer: Learn How to Calibrate Your Lawn and Garden Sprayers and Spreaders – October 7, 2016
2. Rodenticides – November 4, 2016

For more information about upcoming and past School IPM webinars:

<http://articles.extension.org/pages/73368/2016-all-bugs-good-and-bad-webinar-series>.

September 20, Tuesday, 2:00-3:30 pm. Eastern / 11:00-12:30 pm. Arizona. EPA Webinar: [Protecting Students from Mosquitoes and the Zika Virus at School](#)

Mosquito-borne diseases have been responsible for much suffering throughout human history. Today, the diseases they transmit in the United States and its territories, including Zika virus, Dengue, chikungunya virus, and several forms of encephalitis, are continuing threats.

Join EPA's Protecting Students from Mosquitoes & the Zika Virus at School Webinar to learn about the mosquitoes that are of concern to schools and the interim guidance the Centers for Disease Control and Prevention offers for district and school administrators to help schools keep their students, faculty and staff safe from Zika virus. Also hear firsthand the steps a school district in Florida is taking to reduce mosquito populations in an effort to prevent mosquito-borne illness.

For more information about the EPA Schools program, visit:

<http://www.epa.gov/schools/>

For more information about the Community IPM, visit:

<http://www.extension.org/pages/23359/urban-integrated-pest-management-community-page>



For more information about School IPM in Arizona, visit:

<http://cals.arizona.edu/apmc/westernschoolIPM.html>

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