



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

May is National Asthma Awareness Month

Pat Barnwell

Asthma is one of the leading causes of school absences due to illness. Nationwide about 10% of children under the age of 18 have been diagnosed with this chronic lung disease. In Tennessee, according to Tennessee Department of Education, Office of Coordinated School Health, Annual School Health Services Report for the 2013-14 School Year, 33% of all students diagnosed with a chronic illness or disability were diagnosed with asthma. Incidence of asthma has increased 85% from 2004-05 to 2013-14, and response to asthma related distress accounted for the most common type of emergency procedure involving students (56%). Other Tennessee school children are sensitive to environmental allergens which include many of the same substances that can trigger asthma.

A number of substances in the indoor environment are known to trigger asthma such as mold, dust, smoke, strong odors (colognes or perfumes, paints, pesticides, cleaners or deodorizers, and markers), chalk dust, animal dander, cockroaches, and airborne dust contaminated with rodent urine. Custodians, maintenance and facilities can help to reduce some of these triggers. Schedule painting, major repairs and renovations during long vacations or summers months. Monitor humidity, ventilation and indoor air quality. Repair leaks in roofing and plumbing as soon as possible. Use cleaning products with low VOC (volatile organic compounds) ratings and clean when staff and students will not be exposed to the fumes. Use vacuums with HEPA filters.

Cooperate with your pest management professional by eliminating cardboard, reducing clutter, storing food in pest proof containers, repairing leaks, sealing openings around doors, windows, and utility penetrations and practicing good sanitation to reduce resources for cockroaches and mice. Cardboard besides being an ideal nesting site for pests can get moldy and dusty.

Ask pest management professionals (PMPs) to service the school when children are not present. Request not spraying for pests unless pests are present. Ask that baits be used to control cockroaches and snap traps or glue boards to control mice indoors. PMPs can place snap traps and glue boards in locked rodent boxes that can be kept away from children. Rodents baits used indoors can lead to dead rodents in wall voids and result in strong odors as the rodent decays.

For more information about managing asthma in schools see *Managing Asthma, A Guide for Schools*. A quick check to see how asthma friendly your school is can be found on page 34 of the publication.

Resources: *Managing Asthma, a Guide for Schools*, NIH Publication NO. 02-2650. National Asthma Education and Prevention Program, U S Dept. of Health and Human Services, and US Dept. of Education, http://www.nhlbi.nih.gov/files/docs/resources/lung/asth_sch.pdf

Tennessee Department of Education, Office of Coordinated School Health, Annual School Health Services Report, 2013-14 School Year, http://www.tn.gov/education/data/health_safety/csh_annual_report_2013-14.pdf

Special Points of Interest

> May is National Asthma Awareness Month

33% of all Tennessee students diagnosed with a chronic illness or disability were diagnosed with asthma in the 2013-14 school year.

This issue

May is National Asthma Awareness Month	1
Bugs are Cool! Teaching and Learning	2
Springtails	3
End of Year Preparations and Green School Cleaning	4
UT YEAH Contacts	7
Links	7



Bugs are Cool ! Teaching and Learning



Teachers and students have fun while learning. Whether you're interested in doing scientific research or having fun, there is something for every one. Take a look at some of these websites.

Teaching IPM to Kids, <http://www.extension.org/pages/64931/teaching-ipm-to-kids#.VV96MUaAs3Q>

NPMA's Pest World , <http://www.pestworldforkids.org/>

University of Kentucky Entomology for Kids and Teachers , <http://www2.ca.uky.edu/entomology/dept/youth.asp> and Bug Fun!, <http://www.uky.edu/Ag/Entomology/ythfacts/bugfun/bugfun.htm>

Iowa State Entomology Index of Internet Resources, <http://www.ent.iastate.edu/list/directory/158/vid/5>

Michigan State University Integrated Pest Management, http://www.ipm.msu.edu/community_and_home/schools

The Children's Butterfly Site, <http://www.kidsbutterfly.org/>

Join Our Pest Patrol: A Backyard Activity Book for Kids on Integrated Pest Management, <http://www.epa.gov/pesticides/kids/pestpatrol/>

Resources for Educators, Penn State Extension (look at the left side bar), <http://extension.psu.edu/pests/ipm/schools-childcare/schools/educators>

Springtails (Collembola)

Pat Barnwell and Karen Vail

Springtails are small (1- 3 mm or 0.04 - 0.12 “), wingless, soft-bodied arthropods. Body shape and color vary. Most move with the aid of a springing mechanism on their undersides. A small hinged appendage, the furcula, is held in place by a latch, the retinaculum. When the furcula is released, springtails can move a distance of almost 100 times their body length. Around buildings they inhabit moist areas of soil under leaf litter, mulch, rocks, and logs that protect their soft bodies from desiccation. In fact, these small arthropods are very common and abundant but seldom observed because of their small body size. They feed on bacteria, fungi, pollen, algae, lichens, decaying plant matter and insect feces and are valuable members of the decomposer community.

Occasionally springtails migrate into structures. Elongate springtails are more likely to be seen indoors than a globular one (see images below). Fortunately they do not bite, carry disease or damage property. Humid conditions indoors may be very attractive to them especially areas with plumbing leaks or excessive condensation and damp basements. If conditions are very dry outside, they may move indoors in search of moisture. Heavy rain can also drive them inside. Springtails can be brought indoors in potted plants. Let plants dry out before bringing them indoors. Where invasions are persistent check the drainage around the structure to make sure downspouts are directing rain water away from the foundation. Springtails can thrive in mulch; it is a short distance from the mulch bed inside through cracks or crevices around doors and windows. Light shining through these cracks attracts springtails. Remove or reduce the mulch level next to the foundation so that mulch can dry out easily. Survival time is short indoors if the environment is dry. Use fans or dehumidifiers to dry out the environment where moisture is a problem. Vacuuming can rapidly reduce the number of springtails found indoors.



Black springtails, otherwise known as snow fleas, are so numerous they appear as black ash. Photo credit: G. Merritt

Reference: Hahn, Jeffery and Stephen Kells. *Springtails*. <http://www.extension.umn.edu/garden/insects/find/springtails/>



A globular springtail. Photo: [Springtails](http://edis.ifas.ufl.edu/ig124), P. G. Koehler, M. L. Aparicio and M. Pfister <http://edis.ifas.ufl.edu/ig124>



An elongated springtail. Photo: [Springtails](http://edis.ifas.ufl.edu/ig124), P. G. Koehler, M. L. Aparicio and M. Pfister <http://edis.ifas.ufl.edu/ig124>

End of Year Preparations and Green School Cleaning

Pat Barnwell and Karen Vail



Cockroaches live contentedly in the seals of refrigerator and microwave doors. Appliances need to be cleaned regularly, and refrigerators emptied before breaks. To increase accountability, consider drawing up a schedule for lounge staff. Snyder & Gouge, U of AZ

For those of you working in Middle and East Tennessee, be careful when cleaning to prevent brown recluse bites. Look before you reach into a drawer. Although we immensely dislike the use of cardboard boxes in classrooms because they offer harborage to cockroaches and other pests, if you do use cardboard for storage, please securely tape them to prevent pests from crawling in.

As we approach the end of the school year, teachers, administrators, custodians, IPM coordinators, grounds crews, kitchen staff and students have visions of the beach in mind, but hold on a minute. There are few actions that each of you can take that will make your return to school a more pleasant experience. Please see page 2 and 3 at <http://schoolipm.utk.edu/documents/newsletters/May%202013.pdf> for steps that will help reduce the number of pests in school over the summer break.



Male and female brown recluse spiders on a sticky trap. UT E&PP

Since we are on the subject of cleaning and asthma, custodians should read all labels and should wear the proper protective equipment to protect themselves from harsh chemicals. Using safer cleaning products protects custodians, students, and staff. Product such as bleach, ammonia, floor strippers and bathroom cleaners can irritate the respiratory system and chemically burn eyes and skin. Custodians repeatedly exposed to harsh chemicals or those exposed to a high dose can develop asthma. Chemicals can exacerbate asthma in workers with asthma. Green cleaning products exist that are a safer alternative to conventional chemicals. Schools in California reported less absenteeism in students and staff after switching to green products; they attributed this to improved air quality. When school districts bought green cleaning products in bulk they saved money. Products often are packaged as concentrates and dispensed with dilution systems. California school systems found that they used less chemicals overall.

The Centers for Disease, Control and Prevention (CDC) recommends placing more emphasis on washing hands than disinfecting or sanitizing the school premises. During outbreaks of the flu, disinfecting high touch areas such a door and faucet handles or computer keyboards may be justified. Kitchen staff should follow recommendation of the health department which does require sanitizing food surface preparation areas, kitchenware, tableware and utensils. Workers should read the labels on disinfectants and sanitizers and use personal protective equipment as recommended on the labels.

A number of good resources about green cleaning and managing asthma exist online.

<http://www.cleaningforhealthyschools.org/>

http://www.cleaningforhealthyschools.org/documents/FAQs_on_Costs_of_green_cleaning_in_schools_final4-16-09_.pdf

<http://www.greenschools.net/article.php?list=type&type=4>

<http://www.cdph.ca.gov/programs/ohsep/Pages/AsthmaPubs.aspx#reports>

<http://www.epa.gov/iaq/schools/managingasthma.html#Sources>

http://www.huffingtonpost.com/claire-l-barnett/green-cleaning-at-school-b_6987846.html retrieved 4-10-15

UT YEAH Contact Information:

Karen Vail, Ph.D., Professor,
 Urban IPM Specialist, UT Extension
 370 Plant Biotechnology Bldg.
 2505 E J Chapman Drive
 Knoxville, TN 37996-4560
 ph: (865) 974-7138
 fax: (865) 974-4744
 email: kvail@utk.edu
 web: <http://schoolipm.utk.edu>
<http://eppserver.ag.utk.edu/personnel/Vail/vail.htm>



Martha Keel, Ph.D., Professor
 Housing & Environmental Health Specialist,
 UT Extension
 218 Morgan Hall
 ph: (865) 974-8197
 fax: (865) 974-5370
 email: mkeel@utk.edu
 web <http://utyeah.utk.edu>

James P. Parkman, Ph.D.
 Former UTIA IPM Coordinator
 370 Plant Biotechnology Bldg.
 2505 E J Chapman Drive
 ph: (865) 974-7135
 fax: (865) 974-4744
 email: jparkman@utk.edu

Mary Rogge, Ph.D., Assc. Professor
 UT College of Social Work
 225 Henson Hall
 ph: (865) 974-7500
 fax: (865) 974-4803

**Comments or questions
 on this newsletter?
 Contact kvail@utk.edu**

Follow us on
 Facebook at



<http://tinyurl.com/schoolipmFB>

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 schoolipm.utk.edu.

NATIONAL IPM INFORMATION

eXtension's Pest Management In and Around Structures: Urban Integrated Pest Management
<http://www.extension.org/Urban%20Integrated%20Pest%20Management>

National School IPM
schoolipm.ifas.ufl.edu/

IPM in Schools Texas
schoolipm.tamu.edu/resources.htm

IPM Institute of North America
www.ipminstitute.org/

School IPM PMSP—all schools IPM by 2015
http://www.ipminstitute.org/school_ipm_2015.htm

National Pest Management Association IPM
www.whatisipm.org/

EPA schools
www.epa.gov/pesticides/ipm/schoolipm/index.html

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 www.agriculture.utk.edu/personnel/districts_counties/default.asp

The University of Tennessee is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services. All qualified applicants will receive equal consideration for employment without regard to race, color, national origin, religion, sex, pregnancy, marital status, sexual orientation,

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.

Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others that may be of similar, suitable composition, nor does it guarantee or warrant the standard of the product. The author(s), the University of Tennessee Institute of Agriculture and University of Tennessee Extension assume no liability resulting from the use of these recommendations.

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development. University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating. UT Extension provides equal opportunities in programs and employment.