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Gary Bennett
Indiana Pest Management Association
Department of Entomology
Purdue University
901 W. State Street
West Lafayette, IN 47907-2054
Phone: 765-494-4564 or FAX: 494-2152
email: gbennett@purdue.edu

Sandy Lindsey, Editor
34145 Brown Bayou
Wesley Chapel, FL 33543
Phone/FAX: 813-782-7079
email Lindsey210@hotmail.com

2012-13 Officers
Ray Siegel, President
POW Pest Control
P.O. Box 200
Linden, IN 47955
(765)426-8612
email: Ray.Siegel@powpest.net

Jeff Zeigler, Past President
Orkin Pest Control
9942 Olympia Drive
Fishers, IN 46037
(317) 578-1409
FAX: 578-1858
email: jzeigler@orkin.com

Scott Robbins, Vice President
Action Pest Control
4 E. National Hwy.
Washington, IN 47501
(812)254-3059
email: scotr@actionpest.com

Gary Bennett, Secretary
Department of Entomology
Purdue University
Smith Hall
901 W. State Street
W. Lafayette, IN 47907-2089
(812)494-4564
FAX: 494-2152
email: gbennett@purdue.edu

2012-13 Directors

John Walton
Arab Termite and Pest Control
1066 E. Diamond Avenue
Evansville, IN 47711
(812) 423-4455
FAX: (812) 423-1123
(3 years, Southern Region)
email: jwalton@arab-ev.com

Mark Swihart
Ace Pest Control
P. O. Box 383
North Webster, IN 46555
(574) 834-2834
FAX: (574) -834-2925
(1 year, Northern Region)
email: mark255@gmail.com

Scott Glaze
Arab Termite and Pest Control
P.O. Box 1233
Kokomo, IN 46901-1233
(765) 452-2929
Fax: (765) 452-8687
(1 year, At Large)

Sarah Florey
Arab Termite and Pest Control
912 W. Main Street
Crawfordsville, IN 47933
(765)362-7707
FAX: 362-9369
(2 years, Central Region)
email: arabpestcontrol@sbcglobal.net

Tim Kaforke
Univar U.S.A.
7425 E. 30th Street
Indianapolis, IN 46219
(800)382-4867
FAX: (317)546-8054
(2 years, Allied)
email: timkaforke@univarusa.com

Judy Logsdon
Rid-A-Pest
4615 N. Shadeland Avenue
Indianapolis, IN 46225
(317) 547-3838
(2 years, At Large)
email: ridapest@comcast.net
MINUTES - SUMMER MEETING - July 14, 2012

The meeting was called to order by President Jeff Zeigler. The minutes of the January meeting were accepted as printed in the March newsletter. The treasurer’s report was accepted as read.

Committee Reports:
Education – Scott Robbins and Mark Swihart reported there would be CCH meetings in March 2013 in Evansville and Warsaw.
Scholarship – Don Green presented the Steve Durnil/IPMA Family Scholarship to Tara Freel, daughter of Ace Pest Control’s John Freel.
Summer Meeting – Scott Robbins and Syed Shah gave a few details on the 2013 Summer Meeting, scheduled for July 12-14, 2013, at the Marriott Courtyard and the Bloomington Convention Center. The room rate is $99 per night (includes breakfast for 2 people).

Nominations for Office – Marion Hall presented the following nominations:
  President – Ray Siegel
  Vice President – Scott Robbins
  Secretary – Gary Bennett
  Director (At Large) – Scott Glaze
  Director (South) – John Walton
The nominees were elected by acclamation.

The meeting was turned over to President Siegel and he adjourned the meeting.
CUSTOMER RELATIONSHIPS – KEY TO LONG TERM SALES SUCCESS*

Sales is a tough racket. Long term success in sales can be summed up in one word….’Relationships.’

When a client finally says “yes” to a sales person, they have to follow through on the promises they made to the client in terms of price, services and follow-up.

Furthermore, it can often lead to a lifetime relationship for a sales person and his/her company, and that is indeed a rewarding experience in the selling business.

On the other hand, if a customer’s expectations are not met, a relationship with a customer can end quickly and that is not a happy ending! Unnaturally it can happen with little notice and that’s why remaining in touch with a customer is so critical. Customers have the same wants you and I do, and it is best to keep in mind that regular communication is essential in any relationship.

I saw this customer commitment list on a wall a long time ago and would like to share it with you today.

1. A customer is the most important person in any business.
2. A customer is not dependent on us. We are dependent on him.
3. A customer is not an interruption of our work. He is the purpose of it.

4. A customer does us a favor when they call. We are not doing them a favor serving them.
5. A customer is part of our business, not an outsider.
6. A customer is not a cold statistic. He is a flesh-and-blood human being with feelings and emotions like our own.
7. A customer is not someone to argue or match wits with.
8. A customer is a person who brings us his wants. It is our job to fill those wants.
9. A customer is deserving of the most courteous and attentive treatment we can give him.
10. A customer is the lifeblood of this and every other business. There is nothing more precious than a customer. They make it all happen, including sales opportunities, so they should be treated accordingly! We talk a lot about referrals, but you have no referrals without loyal customers. These loyal customer relationships are the key to success!

*http://pestcontroltrainer

In addition, Kroger provides numerous healthy recipes on its website for some new ideas.

One of the major contributing factors to eating out is the busy American lifestyle. Americans tend to look for cheap and quick food options for lack of time instead of considering their health. If you enjoy eating at work, you may want to stock some healthy snack options. The CDC suggests a variety of easy on-the-go meals, such as:

- “grab-and-go” fruits (apples, oranges, bananas, canned fruit without added sugars and raisins);
- washed and chopped fresh vegetables (celery, carrots and cucumbers);
- low-fat and fat-free milk products (yogurt without added sugars, milk and low-fat cheeses);
- whole-grain crackers and breads; and
- protein choices (low-fat deli turkey slices or almonds and other nuts and seeds).

Most importantly, the greatest factor in a healthier diet is you. If you have a strong desire and dedication to lifestyle changes discussed in this article, you will be on your way to a healthier you! For more information on a healthy lifestyle, visit the Center for Disease Control website – www.choosemyplate.gov.

*From BizVoice/Indiana Chamber, December 2011
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Indiana Pest Management Association Newsletter

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Always read and follow label directions. Wasp-X is a trademark and Zoëcon with design is a registered trademark of Wellmark International. ©2012 Wellmark International.
PYRETHROID LABEL CHANGES*

In the early 2000s, data was developed in California that indicated that pyrethroids from outdoor non-agricultural uses were showing up in urban creeks, streams and other bodies of water at levels that could have an impact on aquatic species. Tests conducted elsewhere indicated similar patterns. As a result, the California Department of Pesticide Regulation and U.S. Environmental Protection Agency have taken steps to mitigate what they have deemed to be unacceptable risks.

In particular, EPA contacted the manufacturer of every registered non-agricultural pyrethroid product in June 2009, asking that they submit new labels containing altered environmental hazard statements and use directions by June 2010. This includes every pyrethroid product containing non-agricultural outdoor uses, including consumer and professional products, branded and generic products, PMP and turf and ornamental products, and even combination products, containing a pyrethroid with another non-pyrethroid active ingredient.

EPA processed the amended labels in the Fall of 2010, requiring manufacturers to adopt the amended labeling within eighteen months of approving the new label. Some of those products began showing up earlier this year, but the majority will begin showing up this Spring. These deadlines only apply to newly manufactured products. Old-labeled products in the possession of distributors and old-labeled product in the possession of applicators may continue to be distributed and used in accordance with old label directions.

**What to Look for** – the new labels will contain the language as outlined below. Most of it is mandatory, enforceable language, though most of the amended environmental hazard statement language is advisory, meaning that it is a recommendation, but not a requirement.

**Challenges for the PMP** – Pest management professionals will be impacted when performing both preconstruction termite treatments and exterior perimeter pest control. In addition to prohibitions on the distance that treatments can be made from storm drains, and aquatic habitats, the major impact in preconstruction treatments will be the need to coordinate the timing of applications with the contractor to insure that treated areas are covered within 24 hours of application. According to the new label directions, the treatment site needs to be covered prior to a rain event to prevent run off into non-target areas. This can be accomplished by pouring a concrete slab, or by covering the soil with a waterproof material like polyethylene sheeting. The pest management firm can provide this service or may delegate this responsibility by notifying the contractor on site, as well as the person commissioning the work (if different) of their responsibility to either: a) cover the treated soil if the slab is not poured with 24 hours and b) cover the treated area if rain is predicted to occur before the slab is poured. These actions will require pest management professionals to include additional information and an added layer of coordination in their communication with preconstruction treatment customers.

The greatest challenges presented by the pyrethroid label changes impact the way that pest management firms perform outdoor perimeter pest treatments on a daily basis. In addition to concerns about rain, technicians will be limited in how and where pyrethroid products may be applied on the exterior of structures for general pest control purposes.

In the past, common sense dictated when technicians ceased performing exterior services in the rain. During light rain technicians might focus treatments around protected areas such as beneath siding or under eaves. Alternative formulations such as granules were used by some technicians, taking advantage of light precipitation to dissolve granules and distribute active ingredient appropriately. Under the new restrictions, no exterior applications can be made at all.

Soil, mulch, turf and vegetation can continue to be treated around building and on lawns via broadcast applications; however applications to structures and other impervious surfaces are greatly impacted. General surface applications to building foundations may only be made to a height of three feet above grade. This restriction will impact the treatment protocols that many firms use for controlling overwintering pests like brown marmorated stinkbugs, boxelder bugs, multicolored Asian lady beetles and kudzu bugs. Some firms have relied on general surface application to building exteriors (especially on the south-facing, sunny sides of structures) to intercept overwintering pests when they arrive, preventing large numbers from amassing. With the exception of foundation treatments made to the first three feet above grade, this common practice will be limited to spot and crack and crevice treatments.

**Recommendations** – Read and Follow All Label Instructions – As with any insecticide product, it is extremely important to read and follow all label instructions. This is especially important during he transition period during which identical products bearing drastically different label instructions will be available for purchase and use.

**Understand What Products Have the New Label Language**
Since products shipped from distributors and stored in service vehicles may bear both new and old label language, it’s important to inventory existing pyrethroid stocks, identify what labels are on the products you possess, and alter treatment protocols appropriately.

**Update Service Protocols/Retrain Technicians** – It is important to determine if your company’s current treatment protocols and technician training programs are in conflict with the new label language. Pest management professionals should conduct a review of existing service protocols to determine if they contradict label directions for the products that your company is using. Protocols and training programs may then be updated as appropriate. In the meantime, technicians should be reminded to follow product label directions if a conflict between company policy and the label arise.

**Talk with Manufacturers and Distributors about Timelines**
Pest management professionals are beginning to see the revised label language on products now. Since existing stocks with old labels may be sold and applied indefinitely, pest management firms should find out from distributors and manufacturers when to expect products bearing the new label to make their way through the supply chain to the end user.

Continued on page 11
Oldham chemicals company, inc

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Pests that infest stored products represent a diverse group including both insects and non-insect arthropods. The one thing this group has in common is that they live in or in close association with the food we eat. Ever since humans started farming and storing food, insects and other pests have taken advantage of this practice. Imagine an insect that has always eaten seeds from wild grasses, moving from plant to plant to find an uneaten seed suddenly confronted with hundreds or thousands of pounds of these seeds piled on the ground, in a basket or clay jar. That insect’s life suddenly became much easier with the abundant food supply.

Most of our current stored product pests are closely related to plant and seed feeding insects and probably moved from that life style to one of feeding on our stored food. Other types of insects such as ants will often take advantage of our stored foods but still retain their free living life style and also do not generally nest in the food itself. Insects that are considered stored product pests have become reliant on the stored grains and processed grains that man creates.

Stored product pests are most often associated with grains and grain based foods, although they will feed on a variety of plant based materials and even some animal based foods. In addition to grains, other plant based foods include spices, dried vegetables and seeds. Animal based products include dried milk, dried meats and skins. Processed dry pet foods are also a common source of stored product pests.

Food sources for stored product pests are low in moisture or dry. Stored product insects are rarely found in moist foods except for those that are primarily fungus feeders. Because of their preference for dry foods, stored product insects survive well in dry environments.

Most stored product pests are moths or beetles. Examples of the common ones include Indian Meal Moth, Almond Moth, Mediterranean Flour Moth, Red Flour Beetle, Confused Flour Beetle, Sawtooth Grain Beetle, Cigarette Beetle, Drugstore Beetle, Granary Weevil, Maize Weevil and the Warehouse Beetle. Psocids are another group of important food infesting insects and along with various fungus beetles are found in higher moisture conditions. Grain mites are not insects but are important pests of some types of food.

Stored product pests damage a tremendous quantity of food between the time it is harvested and when it is consumed. Infested grain can often be salvaged after the infestation is destroyed, but processed foods often must be destroyed even after the infesting insects are killed because their bodies are still present as contaminants. Because of this control measures are focused on identifying the infested product and discarding it. Infestations can also occur in equipment or even structural elements of buildings. In these cases the infestation needs to be localized before treatments can be effectively made.

With such a diverse group of pests, identification is critical. Several references are useful for the Pest Management Professional including the NPMA Field Guide to Structural Pests, The Mallis Handbook of Pest Control and the Scientific Guide to Pest Control Operations. More specialized references are available for those working in specialized food storage and processing facilities.

Stored Product Pests are often categorized by their feeding habits. These classification schemes vary but the following is a typical example. Internal Feeders – Includes those insects that are capable of and feed almost exclusively on whole, intact grain kernels. These insects may also feed on processed foods such as pasta which are similar to whole grains. Insects in this group include Lesser Grain Borers, Maize Weevils, Rice Weevils, Granary Weevils and the Angoumois Grain moth.

External Feeders – Includes those insects that are not capable of penetrating the seed coat of whole grains but can feed on broken or damaged grains. Many of these insects are important pests of processed foods. Insects in this group include the Cigarette Beetle, Merchant Grain Beetle, Red Flour Beetle, Confused Flour Beetle, Red Legged Ham Beetle, Sap Beetles and the stored product moths such as the Indian Meal Moth.

Scavengers – This group includes those insects that feed on grains damaged by internal feeding insects, grains that are severely damaged and processed grains. In most cases these are the most significant pests of processed grain based foods. These insects are often found in non-grain based processed foods. Insects in this group include the Sawtooth Grain Beetle, Merchant Grain Beetle, Red Flour Beetle, Confused Flour Beetle, Red Legged Ham Beetle, Sap Beetles and the stored product moths such as the Indian Meal Moth.

Secondary Feeders – This group includes those insects that feed on old and moldy grains and processed foods. The presence of these insects usually indicates a more severe problem with moisture and mold. Insects in this group include Mealworms, Psocids, Fungus Beetles, Spider beetles, Flat Grain Beetles, Foreign Grain beetles and the non-insect Grain Mites.

As you can see Stored Product Pests present unique challenges to the Pest Management Professional. Their abundance and wide distribution also present opportunities for those who are willing to spend the time to become educated in this fascinating group of pests.

*By Jeff Weier, Sprague Pest Solutions, Nevada Pest Control Association News, April 2012.
Carefully Manage Existing Product Stocks – Since products bearing the old labels may continue to be sold and used according to the old label instructions, pest management professionals are encouraged to determine which products in their existing inventory bear the old, less restrictive labels and manage those products carefully.

Talk to Your State Lead Agency About How They Intend to Interpret Label Language – The U.S. Environmental Protection Agency has provided guidance to clarify some of the label language surrounding crack and crevice and spot treatments to include pin stream applications to a surface that result in a one-inch wide treated area, and included the areas underneath eaves as acceptable treatment sites. We recommend that you contact the state lead agency responsible for regulating pesticides and/or structural pest control in the states that your firm operates in to determine how the new label language will be interpreted in your region.

*From Pestworld, June 2012

**MEMBERSHIP UPDATES**

Indiana Pest Management Association Newsletter

Anderson Pest Solutions; Mark O’Hara, 8057 Cleveland Place, Merrillville, IN 46410, 219-769-0100; email: mohara@anderpest.com

**Final Notice Dues**

Your July 2012- June 2013 Final Dues Notice has been emailed (for those who have not paid). PLEASE RENEW TODAY!

**NPMA JOINT STATE MEMBERSHIP OFFER**

NPMA, in cooperation with BASF, has partnered on a new membership campaign for 2012-2013. For the next year, new applicants to the Indiana Pest Management Association will be required to pay state dues only to join both organizations. The only stipulation is that companies cannot have been an active IPMA member in the past 12 months (they have to be a new applicant).

For a copy of the new membership application, visit our website http://www.ipma.us
LEADERSHIP THROUGH MOTIVATION AND ACCOUNTABILITY*

You know the saying, ‘people don’t leave jobs they leave managers,’ it has some merit. A Gallup poll of over one million employees found that the number one reason that people left their job was due to a bad boss or immediate supervisor. While this isn’t always the case, an employee’s boss can make a big difference in the satisfaction that person finds in their job.

That is why so many companies think strategically about whom they put in leadership roles and devote the time and expense in developing strong leaders.

Being a good leader or boss isn’t easy. It takes time to develop the needed skills and practice. And, quite honestly, it is a role that most will likely never understand completely. Each day and each person led brings new opportunities, situations, and obstacles to face and overcome.

Great leaders are those that handle the varying circumstances with poise and consistency. They know how to engage their workforce and understand how to convey appreciation for their team’s efforts. But, they also know how to get the most out of people, while creating an atmosphere for motivation and a sense of accountability within each employee.

The Importance of Motivation

Motivation is typically thought of one’s ability/energy to get excited or exert the effort to complete a task, whether that is personal or work-related. In the workplace, motivation is a critical component of how an employee is led. If an employee shows a sense of self-motivation or passion for what they are doing, a less hands-on approach may be needed. If an employee is struggling to get motivated or isn’t particularly interested in a certain task they are responsible for, a more direct approach may be needed.

There is a wide array of research available on motivation and motivational theory, but one of the most well-respected researchers in this area is Frederick Herzberg. In his study, he found that while many feel there is a single continuum from dissatisfaction to satisfaction, which is not true. Rather there are factors that have to be in place, labeled ‘hygiene factors,’ and then there are another set of factors that increase the level of satisfaction/motivation of an employee.

Herzberg defines things like a competitive salary, good benefits, and decent working conditions as hygiene factors – things that a person has to have and no matter how much you excel in other areas of motivation, without these the employee won’t move on the continuum from demotivated to motivated.

Items like achievement, recognition, responsibility and the work itself are all areas that can impact motivation. And the neat things that Herzberg’s research found was that these motivators were not only the most frequent causes of motivation, but they had the longest lasting effect on satisfaction.

Also, note that many of the items that Herzberg labels as ‘hygiene factors’ can be the leading causes for dissatisfaction with a career or rather a, demotivator. Things like company policies and supervision ranked high in frequency of items that dissatisfied an employee.

Salary has an effect on motivation. It can be positive or negative. It is rarely ranked within the top five things that motivate an employee, but if the salary offered is completely out of sync, it can be a very frequent demotivator with a long-lasting effect.

If a manager thinks about motivation in this manner, the items that can move an employee on the continuum of satisfaction really don’t cost the business money, they are more so in how the employee is managed and allowed to contribute to the business.

Here are a few easy tips for managers to enhance motivation:

- Recognize good work.
- Conduct exit interviews that ask questions to help understand why the person is leaving.
- Conduct employee surveys that not only ask for feedback on the challenges, but why they stay with the organization or what they enjoy about the company. Do more of those things!
- Frequently review current organizational policies and practices and remove any that aren’t effective.
- Invest in the people and give them opportunities to learn and grow both inside and outside of the organization.

Managing people is not an easy task and takes a very dedicated level of effort and time from the manager. However, the rewards for helping employees grow within a business can be one of the most rewarding aspects of a manager’s job. Key principles, such as treat employees how you would want to be treated, go a long way. Focus on the aspects that motivate employees, such as achievement and recognition. This can be done through holding your staff accountable for their work, but also encouraging an atmosphere where employees feel empowered to make a difference.

*By Erika Osmundson, Ag Careers.com, Marketing Manager*
Skunks are famous for their odorous defensive spray, deployed against perceived threats such as people, pets, and automobiles. They spray in basements, garages, window wells, and under porches. Skunk mask spray is a yellow-tinted oily liquid stored in two sacs located on opposite sides of the anus. Each sac holds a teaspoon of musk and is enough for multiple sprays. Skunk musk does not emanate from the animal as it does in the Pepe Le Pew cartoon; it is discharged through two “ducts” allowing a skunk to adjust spray to a mist or stream, direct it at a specific target, and shoot up to 15 feed with “both barrels.”

Skunk musk can temporarily blind and stun individual sprayed in the face. Victims experience watering eyes, nasal irritation, and nausea. Asthmatics may encounter difficulty breathing. Rabies is not transmitted through skunk musk.

Skunk musk is composed of seven ingredients, six of which are sulfur-containing thiols that give the skunk musk its awful smell. Humans can smell skunk musk in concentrations as low as 10 parts per billion.

### Deodorizing Treatment

Several tactics should be considered when dealing with skunk odor:
- **Remove the source of the odor:** Ventilate the area with fresh air; Wash or apply deodorants to the source; Use air fresheners to mask residual odor; Use laundry detergent to remove odor in fabrics.
- **Skunk odor may reactivate over periods of high humidity:** If the odor doesn’t decrease in a week or two, the skunk may have re-sprayed or died on the property.

### Home Remedies/Over-the-Counter Products

Chemist Paul Krebaum discovered a solution that changes the odorous thiols into odorless acids, thereby chemically neutralizing skunk odor.

The formula is: 1 quart of 3 percent hydrogen peroxide (fresh bottle); ¼ cup of baking soda (sodium bicarbonate); 1-2 teaspoons of liquid dish soap.

Ingredients must be mixed in an open container and used immediately. Never mix the ingredients in advance because oxygen released from the solution may cause a closed container to explode. The solution can be used on people or pets; avoid splashing in eyes or mouth. Allow the solution to remain in hair for 5 minutes before rinsing with water. Repeat as needed. Avoid using the solution directly on clothing as it may discolor fabric. Add the mixture to the wash during the wash cycle to dilute it.

Never overlook the simple act of taking a shower and washing clothes to mitigate skunk odor. Time and air eventually remove odors from items. Any cleaning fluid or household chlorine bleach can remove odor from fabrics. Soap and water can be used to dissolve oils in skunk spray to help remove it from fabrics and surfaces. Do not put clothes in the dryer.

For clothing that cannot be washed or dry-cleaned, such as shoes, suspend them outdoors, allowing fresh air to carry away volatile thiols. The odor will decrease over time provided the material is not re-exposed to skunk musk.

For wood or concrete surfaces, mix one cup of bleach to one gallon of water. This method should be used only on the spot where the skunk sprayed. Be aware that bleach may stain surfaces.

### Electric Foggers/Atomist Sprayers

Sometimes skunk odor is so dispersed that fogging a deodorant is necessary to cover a large area. Atomizers, by converting the deodorant solution to fine mists, provide advantages for odor control over hand-pump sprayers. First, atomizer small droplets stay airborne longer, circulating throughout the treatment area. Tiny nooks and crannies present in basements and crawl spaces can be treated by exploiting natural air movements. Second, smaller droplets enable deodorant to be more efficient so less product is needed to achieve desired results. As a rule of thumb, 16 ounces of neutralizing deodorant solution, atomized with droplet size of 15 microns, can deodorize a 1,500 square-foot residence.

Consider the following to determine the type of fogger that will best suit your needs. Portability — Evaluate the weight, balance and power source; Versatility — Use a flexible spray hose to direct the deodorant into small, out of the way areas that odors can penetrate.

### Deodorizing Techniques to Avoid

Ozone generators sometimes are marketed as having deodorizing abilities. Studies have raised significant questions regarding their safety and effectiveness. Ion generators or ionizers dispense negatively or positively charged ions into the air to encourage odor-laden dust particles to cluster and fall to the group. Research has shown high efficiency particle fliers do a better job at removing dust from the air. Never mix deodorants with other chemicals or products unless label directions specifically permit it.

Many home remedies, such as tomato juice, are touted as effective in deodorizing skunk odor. Unfortunately, research is unavailable on the effectiveness of these products. For example, tomato juice is ineffective in neutralizing skunk odor. Users assume tomato juice works because the odor of tomatoes replaces the odor of skunk. What actually occurs, however, is the nose is so overwhelmed by the skunk odor that it stops recognizing it; a condition known as olfactory fatigue. Then when the new odor of tomato juice is introduced, the nose “smells” it, leading the person to think the tomato juice worked.

### General First-Aid Tips

If someone is experiencing headaches, nausea, fatigue, or difficulty breathing, immediately move the individual to an area with fresh air. Seek medical advice. Remove clothing soaked with deodorants and flush exposed skin with clean water for 15 minutes to prevent chemical burns. Flush eyes that are exposed to caustic deodorants for 15 minutes with clean water. Use warm water if available. While flushing, make sure runoff water does not contaminate the unaffected eye. For more control, pour water from a large cup held 2-4 inches above the affected eye. Have someone else call for emergency assistance during the flushing process. If deodorants are ingested call

Continued on page 16
MEMBERSHIP DUES INVOICE
FOR IPMA/NPMA JOINT MEMBERSHIP
FOR JULY 1, 2012 THROUGH JUNE 30, 2013

Joint Membership Dues Breakdown:

<table>
<thead>
<tr>
<th>CLASS</th>
<th>ANNUAL SALES VOLUME</th>
<th>NPMA DUES</th>
<th>STATE DUES</th>
<th>TOTAL DUES OWED</th>
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Joint Membership Dues Amount for 2012-2013
(See Total Dues Owed column above) $______________
Dues for those choosing State Membership only $75.00 $______________
IPMA Scholarship Contribution (Add to your check) $______________

TOTAL $______________

Make your check payable to
INDIANA PEST MANAGEMENT ASSOCIATION, INC.
Mail to: Gary Bennett
Indiana Pest Management Association
Purdue University, 901 West State Street
West Lafayette, IN 47907-2054

PLEASE PRINT

Company Name: ______________________________________________________________________________________
Member’s Name ________________________________ Spouse’s Name___________________________________________
Company Mailing Address: ______________________________________________________________________________
City: ______________________________ State:_____________________ Zip Code:_______________________________
Phone Number:_____________________________ Fax Number:______________________________________________
Email address: _______________________________Web Address: ___________________________________________
Credit Card Payment: ______________ Visa _______________ Mastercard _____________ Discover ______________ AMEX
Name on Card _______________________________________________________________________________________
Expiration Date _____________________________ Card # ________________________________________________
Billing Address (if different than above) _____________________________________________________________________

Signature ___________________________________________________________________________________________
DELUSORY PARASITOSIS

This article appeared in the June 2012 newsletter. Because of the length of the article, it was continued to this newsletter. The information below concludes the article prepared by Dr. Nancy Hinkle, Department of Entomology, University of Georgia.

Responses of the Entomologist or Pest Control Operator It always should be determined whether, in fact, an arthropod is involved (Table 5). Monitoring may include using cellophane tape to entrap the culprit while it is attacking the skin, glueboards to survey the environment, or a hand-operated vacuum cleaner to sample the area in which attacks are occurring (Potter 1992). Typical culprits include thrips brought in on flowers, bird or rodent mites from nests in the building, or cryptic pests such as bed bugs or fleas (Webb 1993). If a causative agent is identified, the source can be eliminated and the problem solved. Otherwise, no pesticidal applications should be made (Potter 1992).

Table 5. Some web sites dealing with delusory parasitosis
Factsheet http://www.ianr.unl.edu/ianr/lanco/enviro/pest/factsheets/009-95.htm
National Geographic http://www.nationalgeographic.com/media/ngm/9812/fngm/index.html

Monitoring and careful investigation of the situation may indicate that, although no arthropod is involved, there are physical causes such as insulation being blown through air-handling systems or nylon fragments from newly installed carpet (Blum and Katz 1990, Potter 1992). Frequently, such modifications as improved sanitation, installation of antistatic devices, and increased humidity will reduce complaints.

If no entomological cause can be identified, the individual should be referred to a physician and encouraged to pursue the possibility of one of the previously mentioned medical conditions serving as the basis of the symptomatology (Kushon et al. 1993). Meanwhile, the sufferer should be advised to discontinue using self-prescribed treatments. These materials, applied topically, are not good for the skin and may aggravate the problem. In particular, pesticidal shampoos and lotions should not be used more than stated specifically on the label; these are potent compounds that will increase skin sensitivity when used.

Responsible pest control firms have policies against treating for pests until a culprit has been identified. This is legally and ethically appropriate (St. Aubin 1981). Customers, however, frequently do not understand, expecting that the pest control operator will “just spray something.” Pressure to comply may be extreme. By applying pesticides, the pest control operator is validating the customer’s perception that there is a pest present. Unwarranted pesticidal applications increase the building’s pesticide load. Pesticide exposure can increase symptom manifestations, both as psychological responses and as physiological reactions to the formulation. For instance, the alpha-cyano pyrethroids are known to produce cutaneous paresthesia (Pauluhn 1996), and some organophosphates produce dermatological manifestations following sustained exposure (Misra et al. 1985). So, insecticide treatments made in delusory parasitosis cases may exacerbate the situation.

Conclusion Although arthropod activity can cause irritation to humans, similar sensations can be produced by many other conditions. Where there is no arthropod involvement, the condition is termed “delusory parasitosis” and is no longer with the scope of entomological expertise but appropriately devolves to health-care professionals. The entomologist’s function is to determine whether insects or mites are involved and, if so, to identify and make recommendations for their suppression (Waldron 1972). Unfortunately, it typically is impossible to convince the individual that there are no “bugs” present, and recommendations to visit a health care professional virtually always are rebuffed (Lynch 1993).

Entomologists should have the courage of their convictions. Once it has been determined that there are no arthropods involved in the case, this should be conveyed to the individual tactfully but firmly. The letter may be worded to make the point that, “Although examina-
further investigation.” The objective is to persuade the sufferer to go to a physician where, it is hoped, he or she may receive appropriate health care (Lynch 1993, Hinkle 1998). As Elliott (1944) observed over half a century ago, investigating delusory parasitosis is "an intriguing field for useful research, an opportunity for teamwork on the part of he pest control operator, the medical entomologist, the dermatologist, and the psychiatrist."

Acknowledgements
I thank F.M. Oi, of the USDA-ARS, Center for Medical, Agricultural and Veterinary Entomology, Gainesville, Florida, who supplied the persistent encouragement that resulted in this article. Grateful appreciation goes to the more than 70 Cooperative Extension Specialists around the country who participated in our delusory parasitosis survey, as well as the other contributors who alerted me to valuable literature and sources. I am grateful to the on-line discussion group Entomo-I for providing diverse accounts of and perspectives on delusory parasitosis. Acknowledgement (without appreciation) goes to the hundreds of delusory parasitosis sufferers who have provided me this experience.

*Written by Dr. Nancy Hinkle, Department of Entomology, University of Georgia.

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*Written by Dr. Nancy Hinkle, Department of Entomology, University of Georgia.

**IMPROVE YOUR HEALTH**

Obesity continues to be a growing trend in the United States. In 2010, the obesity rate in Indiana was 29.6%. There was not a single state in the country that had a rate less than 20% last year.

According to an article in the Annual Review of Public Health, research indicates that diet plays a large role in preventing chronic disease as well as obesity. The food choices we make each day can greatly impact our overall health and wellness. Kroger is among the excellent places to shop for healthier options due to their outstanding perishable selection as well as an enormous variety of healthy options in their center store offerings.

The key to a healthy diet begins at the grocery store. On average, households make two visits to the grocery store per week. There are many simple ways to alter your shopping habits that can lead to major changes in your current lifestyle and eating behaviors. One of the most essential shopping practices to implement is to shop the perimeter of the store, which contains the healthiest foods. This includes fresh fruits and vegetables, dairy products, fish, poultry, whole grains, and various supplements and vitamins in the pharmacy.

Additionally, there are nutritious options in the center of the store such as frozen vegetables, organic foods as well as a variety of other healthy options. The key to healthy shopping in the center of the store is reading food labels and making smart purchases. Avoid trans fats, saturated fats, processed sugars and high sodium-containing foods.

Another important habit to improve your food choices is to make a grocery list and stick to it. You are less likely to impulsively buy unhealthy foods when following a pre-planned shopping list. A few choices to include are:
- whole grain breads and pastas;
- fat-free or low-fat dairy products;
- lean meats;
- low-fat or fat-free salad dressings;
- fresh fruits and vegetables (conventional and organic), and
- vegetable oils.

**Cooking up easy, healthy alternatives**

Americans are now eating out more often, therefore consuming larger food portions that contain greater amounts of saturated fat with less fiber, calcium and iron. On average, Americans consume about 32% of their calories from foods not prepared at home. It is easy to obtain a healthier diet by making some simple changes during your work day, such as packing a lunch from home. The following tips for making healthier meal options can be used throughout the week:
- Cook one main course recipe that can be utilized for multiple meals
- Utilize the freezer for ready-made meals that just need to be heated
- Chop vegetables when you arrive home from the grocery store to save time during the week.