

THE JOURNAL



Newsletter of the Indiana Environmental Health Association

Summer, 2017

Volume 32, Issue 2

Annual Fall Conference

The Annual Fall Educational Conference of the Indiana Environmental Health Association will be in a location new to the gathering. The Lawrenceburg Event Center in Lawrenceburg will host the three day event in September. According to its website, the event center has 12,000 square feet of meeting space and a 7,500 square foot ballroom which will accommodate the conference with ease.

The Event center is newly constructed

Q: What are the conference dates?

A: The conference dates are September 25, 26, 27 with pre-conference events on September 24.

Q: What's on the tentative agenda?

A: The specific agenda is still being worked out, but the Sunday golf outing will continue, and the social gathering on Tuesday evening is planned. Breakout sessions in three tracks will also be offered.

"The conference theme is "Evidence-based Practice." and the agenda is nearly completed. It will include a variety of excellent speakers for the general and breakout sessions.

- Jason Ravenscroft

(Continued on page 2)



The Lawrenceburg Event Center will host the annual fall conference.

In This Issue

- Neonicotinoids killing pollinators
- So. Chapter visits Rex Vault
- WGS key tool in investigations
- Changing LHD life
- WV sees Purdue's Pilot Laboratory



From the IEHA President

Greetings,

By the time this Journal is posted, my husband and I will have returned from an overnight visit to Lawrenceburg, which is the selected town for the 2017 Fall Conference. Conference chair Jason Ravenscroft is excited about his conference selection, and based on his reports of outstanding scenic (Ohio River) and shopping (Historic Downtown) opportunities in Lawrenceburg. Carl and I decided to take a trip to the area.

We will be taking advantage of the River Cities Bike Share Program, a 6-mile ride on the Dearborn Trail connecting the towns of Lawrenceburg and Aurora. The bikes can be rented near the conference event center, and lucky for me there is a basket on each bike to carry some store purchases I might find along the way. For those attending conference, why not consider traveling to Lawrenceburg early on Sunday to take advantage of this unique sightseeing fun?

Finally, did you know that IEHA is one of the listed organizations that can be selected as a tax-deductible charitable contribution through the Indiana State Employees' Community Campaign (SECC)? IEHA is listed as organization #505500. We have a few members that have selected IEHA via SECC. We thank them and also the members who have selected IEHA via their local community United Way Campaigns too. Thank you!

Hoping to find some good shopping along the Dearborn Trail,

Patty

From the Ed Desk

The summer Journal issue has arrived! As before, it's published in two formats available on the IEHA website. Anything you'd like to see next time? Send your ideas! Contact information is on the last page.

I would also like to encourage you (if not already) to become active in your chapter or one of the standing committees.

Ed

(Continued from page 1)

Q. How do I register and what is the cost?

A. Registration may be done through the IEHA website and charged to a Paypal account or by mailing in the registration form with payment. The conference fee is a bargain at \$210 for all three days.

Q. How do I get there?

A. The event center is located right on the Ohio River at 51 Walnut St., Lawrenceburg. That address can be used for GPS navigation.

Q. What about lodging?

A. DoubleTree is located on the same site and will offer a special conference rate of \$91 per night, plus taxes. No special conference code is needed. Call 812-539-8888 and ask for reservations for the IEHA conference.

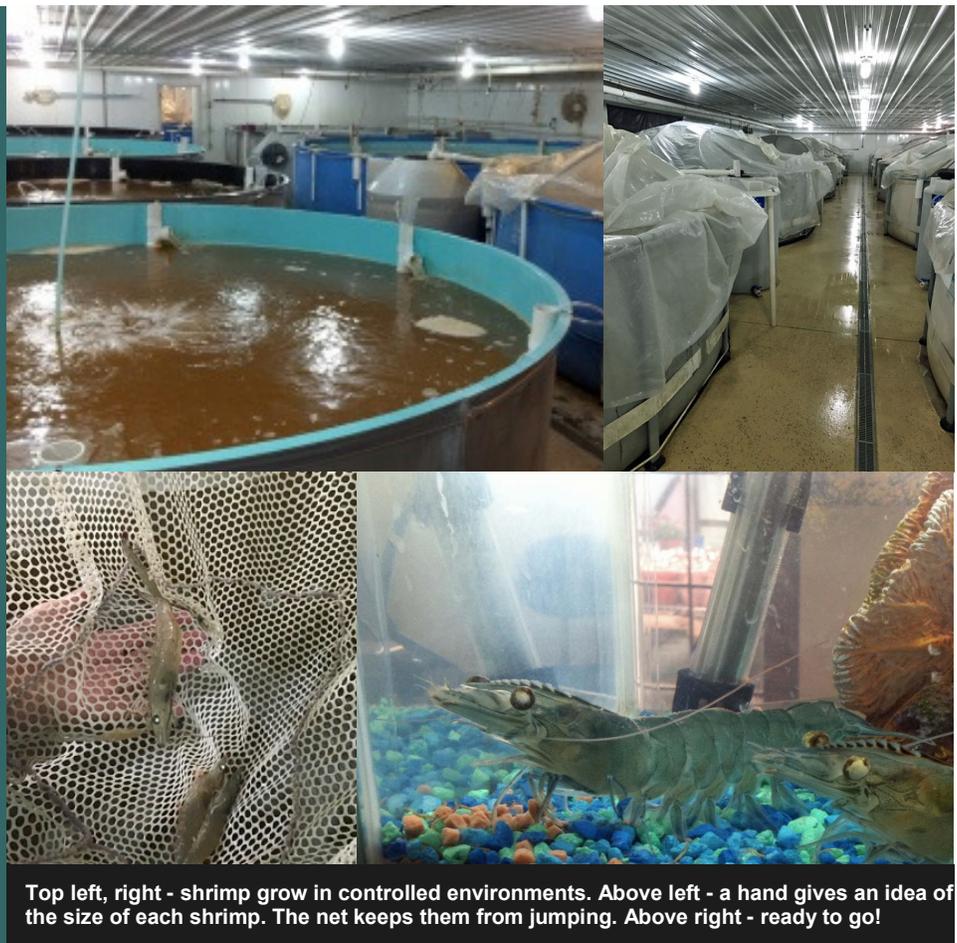
RDM Shrimp Farm's unique process

Shrimp production is unique in that a RAS (Recirculating Aquaculture System) using heterotrophic bacteria based water - ZEAH (Zero Exchange Aerobic Heterotrophic system) or bio flock. Co owner Karlanea Brown says this means that no water is discharged and a brown water or bacteria base system is used instead of a clear water system. She adds that their system runs on air only without the use of pumps. Only a regenerative blower is used to bring in outside air.

RDM Shrimp uses 19 production tanks, 7 intermediate tanks, and as many as 10 nursery tanks. Karlanea says the tank water is very close to the shrimps' natural environment without the toxins and ocean pollutants. Nine tests are run daily to assure water quality.



Photo credits: Stan Danao, Jennifer Asbury, RDM Shrimp



Top left, right - shrimp grow in controlled environments. Above left - a hand gives an idea of the size of each shrimp. The net keeps them from jumping. Above right - ready to go!

WV members see shrimp farm

Wabash Valley Chapter members saw up close how shrimp are raised during a visit to RDM Aquaculture LLC in Fowler, home of RDM Shrimp Farm. Co-owner and VP of Operations, Karlanea Brown, led the tour.

The business has been operating for nearly seven years, and Karlanea said people are surprised that Indiana has a shrimp farm. When they started, there were just three such operations in the U.S.

Members learned that it takes the right bacteria in the water for shrimp to survive. No antibiotics or hormones are used, but rather they let nature do its work allowing what they feel are superior quality shrimp to grow to harvest. Shrimp spend 25 days in the nursery tanks, 25 days in intermediate tanks, and 3 months in production for a total of about five months.

Crawfish are also produced, plus some larger fish, like tilapia, at certain times of the year. RDM markets about 6,000 pounds of shrimp per year. Most sales are from visitors visiting the business. It is not subject to inspection because the product is sold alive. However, if the highest standards are not maintained, there will be no product to sell.

RDM staff cooked up samples for WV members to try.



Attendees are all smiles as they pose for a picture at the IEHA Spring conference at Ivy Tech's Culinary and Conference Center.

Spring conference a success

More than 110 attendees at the IEHA Annual Spring Conference listened to a variety of speakers, with topics ranging from emerging mosquito-borne diseases to preparing for a food emergency. The consensus was that the facility chosen by conference chair JoAnn Xiong-Mercado, the Ivy Tech Community College Culinary and Conference Center, was an ideal location for the conference themed "Behind the Scenes."

The conference speakers included six professional and six student poster presenters from Indiana University-Purdue University Indianapolis' Richard M. Fairbanks School of Public Health. The speakers included Nora Spitznogle from Second Helpings on a topic of food safety and food rescue; Kevin Moore & Major Tyler Bouma from the Marion County Sheriff's Office shared their two emergency action plans for a hostage situation and chemical spills.

Bryan Price with the Indiana State Department of Health addressed emerging mosquito-borne diseases; Heather Lynch with the Indiana State Excise Police discussed breweries, distilleries and artisan licensing; Megan Teachout with ISDH Public Laboratory discussed preparing for the next food/feed emergency with the Indiana Rapid Response Team. Laura Dresen from the Indiana Department of Homeland Security shared information concerning radiation/nuclear detection at the Indianapolis Motor Speedway and Lucas Oil Stadium.

Student presenters shared posters

There were four total student posters with six student presenters. Their research projects were "Addressing Sanitation in Rural Nicaragua"; "Identifying Main Factors Contributing to Chronic Kidney Disease in Northwest Nicaragua"; "Environmental Counseling in Clinical Practice"; and "Effects of Certified Pool Operator Certification on Public and Semi-Public Recreational Pools in Marion County, Indiana".

Members of various IEHA chapters introduced the individual speakers. A tour of the Ivy Tech Culinary Arts program was also available.

(JoAnn Xiong-Mercado contributed to this article.)

Neonicotinoids are widespread

Neonicotinoids are on almost all corn and most soybean seeds sold, according to Purdue entomology professor Christian Krupke. He adds that studies show inconsistent yield benefits, which indicates widespread use is unnecessary. Professor Krupke says future research will focus on determining which circumstances neonicotinoids are useful to improve crop yields. He would encourage farmer access to neonicotinoid-free seed, but that is almost nonexistent currently.

“The good news is farmers don’t often need treated seeds, and can easily and rapidly reduce bee risk simply by using untreated seeds,” Professor Krupke said.

The Indiana Gardening Newsletter says Three quarters of the world’s crops, including fruit, grains and nuts depend on pollination. The loss of pollinators including bees is not only an issue concerning food sources for humans; it impacts all living things.

(from Purdue News Service)



Will pollinators survive the insecticide onslaught?

Neonicotinoids are killing bees

A Purdue University study is showing that a common insecticide is killing bees, the bees that pollinate plants that produce food. According to Purdue’s Agriculture News page, Neonicotinoids are a class of insecticide commonly applied as a coating to corn and soybean seeds to protect them from early-season pests. Powder from the seeds containing the insecticide can be discharged leading to unwanted contamination.

Christian Krupke, professor of entomology, has previously showed that insecticides were found on flowers bordering agricultural fields and were also found in nearby beehives. Bees showed physical signs of insecticide poisoning, and dead bees tested positive for neonicotinoids. Studies by Purdue have shown drift of neonicotinoids from fields can carry up to 100 meters or more and settle on flowers.

Bees are exposed at high rates

Mapping studies of Indiana’s corn acreage, including areas that may receive drift, show that 42 percent of Indiana is exposed to neonicotinoids during crop planting. Projecting the range that honey bees forage, 94 percent of bees could fly through areas that contain lethal doses of the insecticides during the period corn is planted.

“Our previous study showed that these neonicotinoids are likely to leave the fields, but we wanted to demystify that distance and show how far the material moves, and at what concentration the actual risk is,” Professor Krupke said. He added that there is a misconception that bees not living near corn are fine, but that’s not true, he added.



Mike Haddon examines the size of a storm shelter as another member looks on.

Earth Day turns 47

Earth Day was first celebrated in 1970 as an effective way to raise awareness about environmental issues. Environmental concerns in the prior decade seemed to culminate when the Cuyahoga River near Cleveland caught fire, which highlighted the problem with industrial pollution.

Earth day, held April 22, is recognized by countries around the world with more than one billion people in 174 countries, and 17,000 partners and organizations involved, according to the History Channel.

Southern visits Rex Vault Co.

More than two dozen Southern Chapter members witnessed how septic tanks, concrete risers, and distribution boxes are made during a recent tour of the Rex Vault Company in Oden. The company also manufactures burial vaults.

The process involves concrete poured into preformed metal boxes with a concrete the consistency of a slurry. This reduces possible air pockets. Once the concrete hardens, it is flipped over, a dangerous process that requires the staff to use chains and overhead hydraulic devices. These tanks weigh thousands of pounds. The company can produce various sizes with the largest being a 1500 gallon tank. Some adaptations can be made to depth with the addition of framing on the outside of the metal form, but changes to length are not possible for these adaptations.

Members learned that Rex Vault also produces storm shelters, basically the same 1500 gallon tank but with an added door and bench inside. These can be buried up to six inches below the door or into a hillside to serve as an emergency shelter from tornados and storms. Overhead is a circulating air fan to bring in air. The door can be on a slanted side or on the top with a ladder in both for access.

Chapter members then visited Casa de Sevilla to hear Doug Ginder and Emily Potts from ISDH talk about mosquitoes that carry the Zika virus, and control measures that can be used to prevent bites.

(contributed by Jennifer Heller Rugenstein)



Lucas Bolander, center, Rex Vault owner, explains the features of their products to chapter members

CDC says WGS vital

The Centers for Disease Control and Prevention (CDC) views whole genome sequencing as important in the battle against Listeria as it provides genetic information about bacteria that cause people to get sick. CDC says better information allows improved ability to detect, investigate, then stop foodborne illness outbreaks. This information allows identification of outbreaks that may stretch over a long period of time, often years.

CDC's Mathew Wise has said that even though many Listeria illnesses are outside of any outbreak, it's a high priority because fatality rates can reach 20 percent or more. When outbreaks have happened, fresh produce was named in nearly half of all cases, outpacing foods like luncheon meats by a wide margin.

With WGS, Listeria outbreaks can be detected after as few as two people become ill, says CDC. Learning the same Listeria strain is making people sick can indicate the illnesses came from the same source, that is, the same food or same processing facility.



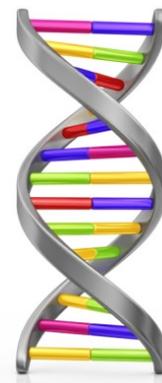
Whole genome sequencing allows FDA to precisely link the source of foodborne illness.

WGS key tool in investigations

The U.S. Food and Drug Administration (FDA) now has an improved resource in tracking down the source of foodborne illness outbreaks. Whole Genome Sequencing (WGS) allows a detailed DNA "fingerprint" so an accurate comparison may be made between a suspect food and clinical isolates from patients. A match means a positive link has been established.

Earlier tests used methods such as PFGE, but FDA says that test was unable to distinguish between similar bacterial strains. WGS can distinguish between virtually all strains of foodborne pathogens. FDA says that the most far reaching benefit might be

the test's ability to pair a pathogen's genomic information with its geographic location. Principles of evolutionary biology are applied to help determine how pathogens are related. FDA believes that knowing the geographic area that certain pathogens are typically associated can be powerful in tracking down the root source of food product contamination. This is even more beneficial with many food products that are multi-



ingredient that may originate from different states or countries. The faster public health officials can identify a contamination source, the faster it can be removed from the food supply.



Cryptosporidium is a parasite that causes the diarrheal disease cryptosporidiosis.

Crypto, a problem for pools

The Centers for Disease Control and Prevention (CDC) has identified Cryptosporidium as a growing problem in public pools. The parasite can cause serious symptoms like stomach cramps, diarrhea, nausea, vomiting, and weight loss, although some people may show no symptoms.

The parasite is protected by an outer shell that allows it to survive outside the body for long periods of time and makes it very tolerant to chlorine disinfection although hyperchlorination does work. (Recreational water may not be used during treatment.) CDC says drinking water and recreational water are the most common ways the parasite spreads. It is the leading cause of waterborne disease among people in the United States. Swimming outbreaks have doubled from 2014 to 2016 numbering 32 in the latter year. Part of the increase may be due to better detection.

Sources of Crypto infections

Crypto lives in the intestines of infected humans or animals, meaning that an infected person or animal sheds Cryptosporidium parasites in feces. Millions of parasites can be released in a single bowel movement. Shedding begins when symptoms start and can continue weeks after symptoms stop.

How you get infected

Victims become infected after swallowing the parasite, such as water in a recreational pool, that has become contaminated. But it can also be contracted from contaminated food, soil, or touching a surface contaminated with feces from infected humans or animals, anything from toys to bathroom fixtures (faucets to changing tables), caring for an infected person or animal. Those with compromised immune systems are at greater risk, but no one is immune. Healthy people should recover without treatment, but need to drink plenty of water. If symptoms are serious, seek medical help.

Member making news

Jason Ravenscroft, IEHA President Elect, has been chosen as one of 9 recipients of an Accela scholarship to attend the NEHA Annual Educational Conference in July. More than 140 environmental health professionals applied.

Jason supervises the Pools, Septics, and Wells program at the Marion Co. Public Health Department.

Accela designs and provides cloud-based productivity software to government agencies.



Water playgrounds can easily spread Crypto when users are sick with diarrhea.

Protect yourself

Wash hands thoroughly before eating or handling food. Be sure any water you drink is safe. Don't let pool water get into your mouth.

Shower before and after getting into a pool. Take kids to bathroom breaks often.

Support IEHA sustaining members

Sustaining members are an integral part of the association. Show them your gratitude by visiting their websites and supporting their businesses.

A&R Wastewater Management -
www.arwwm.com

Crisis Cleaning –
www.crisiscleaning.com

DonLevy Laboratories

ECC Horizon

Indiana Restaurant & Lodging Association –
www.inrla.org

Infiltrator Water Technologies –
www.infiltratorwater.com

La Porte County Convention & Visitor Bureau –
www.michigancitylaporte.com

Meijer – www.meijer.com

NIPSCO –
www.nisource.com

Steri-Clean

Watermark Engineered Product Sales

WDD Software –
www.wddsoftware.com

IEHA's Sustaining Members





Southeastern Chapter recently hosted a Home Based Vendor Training for LHDs. Lisa Harrison from ISDH provided members with an in depth look into Home Based Vendors and Farmers Markets. Fifteen members and 8 guests attended the training held in Ripley County.

(contributed by Holley Rose)

GEHSC tracks bills

During the 2017 Indiana General Assembly session, the General Environmental Health Services Committee (GEHSC) took two trips to the Indiana Statehouse to learn more about the legislative process. The group participated in a guided tour and learned the history of the building and Indiana's government, plus facts about how our state government functions. The GEHSC tracks bills with an environmental health focus or impact. In order to visualize better the steps for a bill to move from an idea to a law, the group attempted to observe different steps of the process and sat in on the House Environmental Affairs Committee while they discussed bills, including one bill meant to provide more funding for mitigation of lead contamination in East Chicago. The group also watched a general House session from the gallery above the House Chamber. Updates on bills being tracked by the GEHSC are on the IEHA website.

(contributed by Ellie Hansotte)

**Indiana
Environmental Health Association
2017
Annual Fall Educational Conference
“Evidence-based Practice”
September 25, 26, 27
Lawrenceburg Event Center
51 Walnut Street
Lawrenceburg, Indiana**

Lodging will be at the adjacent DoubleTree Inn at a special conference rate. Attendees will have a choice of breakout sessions Monday and Tuesday afternoons with the conference awards banquet Monday evening.

Find more information at
www.iehaind.org/conference



Left to right: Lee Green, Tammy Gleber, Representative Carey Hamilton, Morgan Bennett, Ellie Hansotte visit the Indiana statehouse.

Examples of previously donated silent auction items:

*Handmade Jewelry;

*Lanyards;

*Gas Grill;

*Chair;

*Flower Pots made of recycled materials;

*Hand Knitted Scarf;

*Rain Barrel;

*1922 Silver Dollar;

*Ball State Basket;

*Starbuck's Gift Pack;

*Spend a Night in Cass County Basket;

*Gourd Birdhouse;

*Handmade Fish Basket;

*wine basket.

Use your imagination!

Proceeds from the Silent Auction are used at the discretion of the President Elect, and always go towards the needs and interests of IEHA.

silent 2017 AUCTION

Monday, September 25!

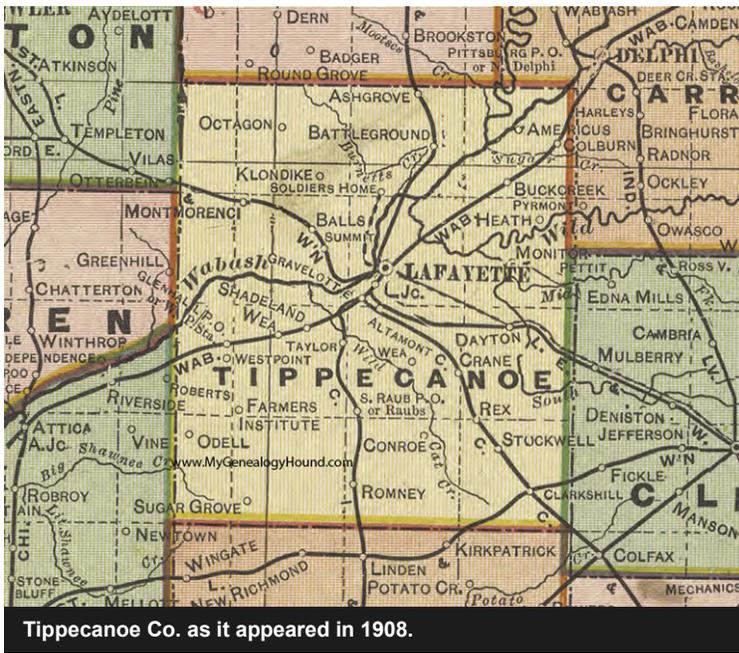
*Held in conjunction with the
IEHA Fall Educational Conference*

Please bring items for the Silent Auction to the registration table on Monday morning.

- Auction items will be put on display Monday afternoon with bidding begins as soon as items are displayed.
- Bidding will end at 10:00 pm OR earlier, if announced.
- Payment must be either "check" or "cash".
- Those individuals who donate items will receive a tax deductible letter, upon request.

If you have any questions, please contact:

- Patty Nocek- pnocek@laportecounty.org
- Margaret Voyles- ma_voyles@sbcglobal.net



Tippecanoe Co. as it appeared in 1908.

Bomb awareness training

A Bombing Prevention Awareness training course was presented recently by the Office of Bombing Prevention, Department of Homeland Security and sponsored by the TAHP committee. The two course instructors were National Guard members in addition to their full time jobs, and both had served in Iraq and Afghanistan. The course covered IED's (Improvised Explosive Device) and HME's (Homemade Explosives), as well as suspicious behaviors, and protective measures. Components of IED's and HME's were explained with photographic examples of how IED's can be incorporated into just about any object.

Effects of an explosive blast on people and materials were shown in video and photos. Instructors explained protection in terms of physical security, intelligence protective measures and technical protective measures. Attendees included law enforcement, health departments, bomb technicians, fire departments and other agencies.

(from Jennifer Rugenstein)

How LHD life has changed

When Ron Noles began his environmental career at the Tippecanoe Co. Health Dept. in 1973, he shared a tiny office with another beginner. "There was no ordinance that required permits or inspections of onsite systems," he said. He says an early assignment was to establish a working relationship with Area Plan, Building Permit, and Surveyor's offices. At this time, percolation tests were used, and tests prepared by Soil and Water Conservation District Conservation District, which was a general statement of the soils present at the proposed system site as "light, moderate, or severe" for septic suitability. Ron says systems included a 1,000 gallon tank, distribution box, and an absorption field sized 250 or 330 square feet per bedroom. ISDH Bulletin S.E. 8 covered design criteria.

Ron's first year in 1973 saw more than 50 onsite inspections but had difficulty with contractors who used roofing paper, or who believed "the deeper, the better" or just discharge into a ditch were acceptable. Sometimes flexible pipe was used, which was difficult to use and maintain grade, Ron says. He adds that most of the early systems have been corrected, either the result of complaints or when a property sold.

Passing an Ordinance to permit and inspect

It was 1978 when County Commissioners were convinced to pass a sewage ordinance that required a permit and final inspection be obtained for repairs, replacements, and new installations. Ron says this worked well since the health department worked closely with the Building Permit Office. He adds they started to see more soil evaluations by soil scientists, and in the 1980s they began working with Purdue's Onsite Program. With

(Continued on page 13)

Constitution committee completes critique, changes

After several meetings over the past year, the ad hoc committee established to review and recommend changes to the Indiana Environmental Health Association Constitution and Bylaws has finished. The committee, chaired by President Elect Jason Ravenscroft, reviewed the existing document line by line with the goal to update wording and make changes to reflect the present day IEHA.

The revised draft will now go to the Executive Board for its review, then to members for review, then approval. The process may extend into 2018.

Although amended several times over the years, much of the language had not changed since IEHA's inception in 1951.



(Continued from page 12)

LHD life has changed (cont.)

the cooperation of some homeowners a few (then) innovative systems were tried, like dual alternating absorption fields, pressure distribution, and elevated Wisconsin sand mounds. Except for many at-grade rock systems, which have been repaired, most are still functioning.

Growth and change in the 1990s

The 1990s saw a housing growth spurt as several major industries began operation. Over 300 permits per year could be issued for new installations, with property owners subdividing their land and creating housing developments with each housing lot needing an onsite system. Perimeter drains were often required, leading to easements for outlets.

In 1999, the original ordinance was updated to require a minimum lot size for housing construction to be based on soil loading rates. (30,000 sq. ft. for a .5 or more load rate, and one suitable area for .3 or less load rate) A "set aside" was needed for a possible replacement system.

There were three major subdivisions developed using the ISDH cluster system concept in the mid 2000s. One that stands out, Ron says, has 43 lots, is a regulated public utility, and the homeowners association collects monthly fees for maintenance. There, two large drip fields installed in well-drained soils with no soil limitations from seasonal wetness or shallow till. Homes use septic tanks and media filter pods. Regular service is performed by an IOWPA certified installer, which Ron believes is key to the system functioning as well as it does. "Maintaining a properly installed onsite system is the key to longevity," Ron adds.

Onsite systems have come a long way in recent years mostly related to the improved technology. Communication has improved as well with groups like IOWPA and ISDH providing a network between regulators, installers, and home owners.

"Having a great working relationship with them all over the years has made this job rewarding," Ron concludes.



Erik Kurdelek points out some of the equipment used in food process testing.

Process to make food safer, preserve quality

New methods of destroying pathogens have been tested at the Pilot Lab that make food safer, while preserving more nutrients and flavor. Now being implemented is a thermal process using microwave energy, a thousand times stronger than home units. In a split second, pathogen cells can be destroyed by the heat created, which has minimal effect on the product.

Less destructive heat means more nutrients are preserved.

Purdue Pilot Lab hosts WV

The only other food lab like it in the country is at North Carolina State University and Wabash Valley Chapter members were treated to a guided tour of the Pilot Laboratory, part of the Food Science Department at Purdue. The 9,000 sq. ft. facility is overseen by Erik Kurdelek and assisted by students from the Food Science Department. For over 30 years, the Pilot Lab has offered training on aseptic packaging and has now expanded into “thermal process validation.”

Validating equipment, processes

Enterprising entrepreneurs can ask for help in bringing a new food product to market. Existing companies can have products and processes tested. With the passing of the Food Safety Modernization Act, the FDA used the facility for inspector training.

“We can show new business operators, how to bring new food products to market,” says Erik. “Many new operators think there are only a couple of steps to success, when in fact it’s more like 16 steps,” he added.

The facility is not regulated and no food is made for consumption. But high standards of food safety are maintained to preserve integrity of tests.

Facilitating facility, student success

The Lab’s main function, says Erik, is to “facilitate faculty success” and second is the education of undergraduate students.



Erik Kurdelek shows an extruded corn product being tested

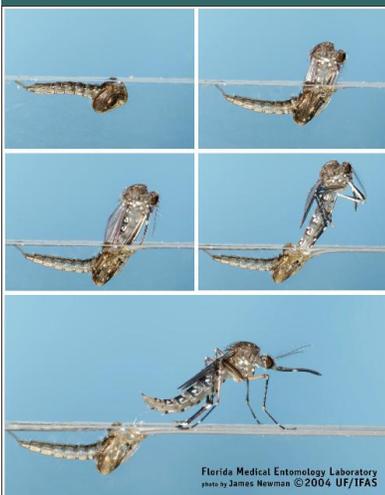
Following the tour, members were surprised when four Food Science faculty members came in, including the department head, and held an impromptu panel discussion and Q & A session.

Mosquitoes carry diseases

A number of diseases are bourn by mosquitos, and bites can lead to a reaction from annoying to life threatening. There are around 167 species of mosquitos in the U.S., which are considered part of the fly family.

Mosquito borne diseases include various types of Encephalitis, Malaria, Dengue Fever, Chikungunya Fever, and Zika.

Mosquitos begin as aquatic life, so control requires eliminating standing water like from old tires or flower pots. Even a small area can be a breeding site, if it holds water. Eliminating standing water is the most effective method to reduce mosquito numbers.



An adult mosquito emerges from the pupa stage. After hatching from eggs, mosquito larvae grow and change from swimming aquatic forms to a flying insect.



Female mosquitos may lay eggs individually or in groups called rafts.

Mosquito myths never go away

The University of Florida Medical Entomology Laboratory (FMEL) says myths about mosquitoes continue to flourish.

But first some facts.

Mosquitoes don't actually "bite" but FMEL says "sting" is more accurate. Females do the stinging. Once a host is located, the female probes the skin for a blood capillary, inserts its sharp proboscis through the skin to suck the blood, which provides the nutrients it needs. This process injects a small amount of the mosquito's saliva serving as an anticoagulant. It's the saliva that leads to swelling and itching from the victim's immune response, best treated with soap and water as soon as possible. Repellants containing DEET do work.

Now to dispel some myths

When they sting, mosquitos do not inject blood into the victim. Mosquitos do not transmit AIDS or HIV. Mosquitos do not prefer a certain blood type.

Bug zappers are effective but also destroy beneficial insects. Electronic repellents do not work. Mosquitos may "rest" in vegetation but do not nest. Bats and owls or other birds may eat mosquitos as part of their diet, they don't consume enough to make much difference. Spraying the adults is not considered effective in controlling mosquitos. They may bite at any time, not just dawn or dusk although those times may be more prevalent.

If you spot a mosquito that's, say, 2 inches long, it's not a mosquito!



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IEHA is an Indiana not for profit organization in existence since 1951.

The Mission of the Indiana Environmental Health Association is to promote, preserve and protect environmental public health in the state of Indiana, and to encourage a spirit of cooperation among all environmental health stakeholders while serving its members in the regulatory, industry, and academic communities.

More about IEHA

The Indiana Environmental Health Association (IEHA) was founded in 1951 as the Indiana Association of Sanitarians (IAS). There were 16 charter members. The name was officially changed to the Indiana Environmental Health Association in 1985.

IEHA is affiliated with the National Environmental Health Association (NEHA), and the International Association for Food Protection (IAFP).

IEHA is comprised of eight regional chapters. They are Central, East Central, Northeast, Northwest, Southeastern, Southern, Wabash Valley, and West Central.

There are four standing committees, which include Food Protection, General Environmental Health Ser-

vices, Terrorism And All Hazards Preparedness, and Wastewater.

The operations of IEHA are governed by an Executive Board that meets regularly. The Board and various standing committees are made up of voting and non-voting members. Information plus meeting dates, times and locations for the chapters and standing committees may be found on the IEHA website listed on this page.

All meetings are open to any member or guest but voting privileges and active participation are limited to voting members only.



**Find us on
the Internet!**

www.iehaind.org