Kansas Environmental Health Association

www.keha.us 2015 Spring Newsletter

Inside this Issue:

MESSAGE FROM THE PRESIDENT

Ann Mayo, MS, RS

Dear KEHA Members,

I hope this finds you and your families well after the holiday season.

I would like to take a moment to recognize the KEHA Executive Board for the time and effort they put out every year for the benefit of the organization and its members. The year 2015 promises to be full of challenges and accomplishments. Some of the Executive Board's major challenges and projects for 2015 are mentioned below:

Membership
KEHA currently has 64 active members. This is not enough to sustain the type of conferences with which we are familiar without an increase in registration fees. The Board has discussed possibly increasing the membership dues.. We anticipate discussing this matter with the membership at the 2015 Fall Conference.. We are also exploring ways to cut conference costs. You should expect to see some changes in our Annual Educational Conference this Fall.

Shared Administrative Management
The Board is in the process of discussing with the Kansas Association of Local Health Departments (KALHD) what benefits could be achieved through shared administrative management. By the time this goes to print those decisions will have been made. Of primary concern has been the Board's ability to adequately address accounting issues. Completion of our income tax and non-profit forms are specialized fields and we believe outside assistance would be of benefit. Our treasurer, Beth Rowlands, has a lot on her plate to accomplish this year.

School Inspections
As KEHA President, I will participate in the school inspection committee sponsored by the KDHE. Secretary, Lisa Davies, will also participate representing her community. The date of the first meeting will be set sometime after the middle of February. The goals of the committee will be explained at that time.

By-Laws
The Board will be reviewing and updating the organization's by-laws., Please expect to receive recommended changes by e-mail at least a month before the Fall Educational Conference.
We look forward to receiving your comments before a vote is taken to adopt any changes.

(*continued on Page 5)*

KEHA Spring 2015 Conference, April 9th & 10th

The conference will again be located at the beautiful Kansas oasis of Rock Springs 4-H Ranch near Junction City. On this page as well as the following pages, please find the conference agenda, registration form and Rock Springs site maps for this year's spring KEHA conference. The Registration area and meeting room will be in the Wiedemann Dining Hall and Lodging at the Leadership Lodge. Meals will be at the Williams Dining Hall.

Registration forms on page 4 should be e-mailed to Beth Rowlands ASAP. Beth's e-mail is *browlands@kdheks.gov*

2015 KEHA Spring Conference Program

Thursday, April 9th

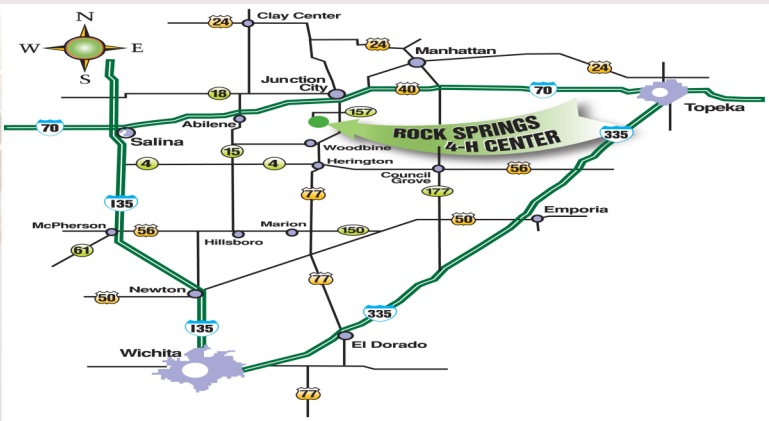
12:00-1:00	**Registration & Meeting Room Weideman Dining Hall**
1:00-1:15	**Opening Remarks** Ann Mayo, MS, RS KEHA President
1:15– 1:45	**Open Microphone/Program Updates**
1:45—2:45	**Harmful Algae Blooms (HAB)** Patti Haines-Lieber: KDHE Topeka
2:45-3:00	**Break**
3:00—4:00	**Proper Construction of a Domestic Water Well** Richard Harper: KDHE Topeka
4:00—5:00	**Proper Inspection and Troubleshooting of a Domestic Water Well** Richard Harper: KDHE Topeka
5:00 - 6:00	**Room check-in**
6:00 - 6:30	**Dinner @ Williams Dining Hall**
Dark - ?	**Council Circle Campfire** Beverages, Smores, Stories

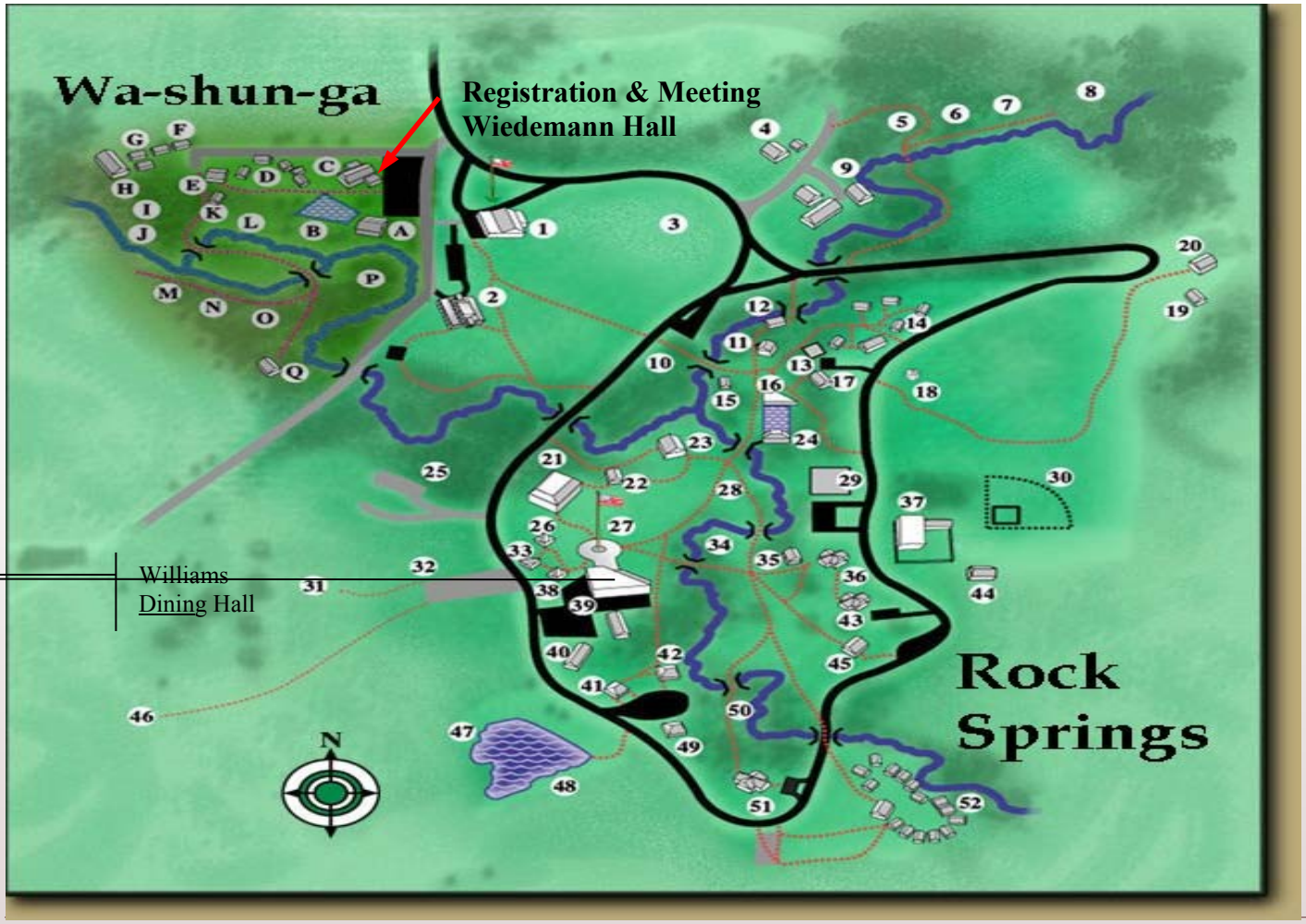
Friday, April 10th

7:30 - 8:00	**Breakfast @ Williams Dining Hall**
8:00-8:05	**Opening Remarks**
8:05—9:05	**Dealing with Ebola Waste** Ed Kalas, Shawnee County Health Agency
9:05-10:05	**EPA 503 Land Application of Septage** Ann D'Alfonso: KDHE Topeka
10:05-10:20	**Break**
10:25– 11:25	**Reading and Understanding Private Water Well Lab Results** Frances Morgan: KDHE Forbes Field Labs
11:25—11:45	**Open Microphone and Closing**

KEHA 2015 Spring Conference Map

Directions: From the Junction of I-70 and U.S.77, travel eight miles south on U.S. 77. Turn right (west) at the junction of K-157 and follow the blacktop highway 4 miles west and south through the gate-way and into Rock Springs Ranch. Registration begins at noon at the Wiedemann Dining Hall where the meeting will be located. Lodging will be at the Leadership Lodge.





2015 Spring Conference Registration Form

Kansas Environmental Health Association
2015 Spring Conference Registration

April 9 & 10, 2015

Rock Springs 4-H Center

Please return completed form via email ASAP to: browlands@kdheks.gov

NAME:

_____

ORGANIZATION:

_____

ADDRESS:

_____

TELEPHONE: _____ **EMAIL:**

_____

Conference Registration (Lodging and Meals included):

KEHA member .....$120.00 $ _____

KEHA ***non-member*** .....$140.00 $ _____

2015 KEHA Membership Dues .....$20.00 $ _____
(October 1, 2014 to December 31, 2015)

Scholarship Donation ..... $ _____

TOTAL AMOUNT DUE.....
(Money does NOT have to accompany form.)

Please make sure information is complete and include one form for each person attending the conference.
This information will be used to update the KEHA Membership list.

Please send **payment** along with a copy of the registration form to:

Beth Rowlands, KEHA Treasurer
P O Box 1969
Lawrence, KS 66044-1969
Phone: 785-842-4600

Administrative Use Only:

_____ Date: _____ Amount: _____
Beth Rowlands, KEHA Treasurer

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MESSAGE FROM KEHA PRESIDENT, ANN MAYO *(Continued from page 1)*

Workforce Development for Environmental Public Health

This group has been coordinated by a Workforce Development Specialist with the Kansas Association of Local Health Departments and the Kansas Department of Health and Environment. The main goal of the workgroup is to focus on priority needs of the environmental public health workforce. Ann D'Alfonso, KDHE, provided information at the last meeting from the survey sanitarian's took at the district meetings. What will Kansas and our local communities need in the future? Accreditation of public health is part of the driving force behind this group. If you are not familiar with the movement toward accreditation you should talk to your local health administrator. All local sanitarians should be interested in this outcome, especially our future Environmental Health leaders. It will probably focus on some form of policy and protocol development, program planning, and leadership. Our thanks to Jerry McNamar for making sure we have a voice in this group.

Conferences

Electronic conference agenda, time-line, and responsibility templates are being developed to assist future Board members with assignments and to ease meeting preparations.

Your First Vice-President, Ed Kalas, is in charge of the conferences this year. The Spring Educational Conference has been set for Thursday, April 9 and Friday, April 10, 2015 at Rock Springs. The Fall Annual Educational will be held in Topeka at the downtown Ramada on September 30 through October 2, 2015. Registration materials for the Spring Educational Conference may be found in the body of this newsletter.

If we can do anything to assist you in your work, please do not hesitate to contact any board member or come to one of the board meetings. Board members will have the information on the meeting schedule for the Executive Board.
Respectfully,
Ann Mayo, RS
President Kansas Environmental Health Association

National Onsite Wastewater Recycling Association (NOWRA) - 2014 Annual Conference

Submitted by Doug Schneweis, KDHE— WMS

The 2014 NOWRA conference was held at the Westin Westminster Hotel in Denver, Colorado on November 9—12, 2014. The conference agenda included 2 days for general sessions and concurrent sessions for: Advanced Treatment System Design Course; Policy; and Technical. A field trip was on the last day and participants visited local onsite advanced treatment units. Through the cooperative efforts of KDHE and the Kansas Small Flows Association, Kansas was well represented. Twelve scholarships were available to local sanitarians/regulators to cover the cost of registration, travel, lodging and meals. Three KDHE staff also attended the conference.

Additional information about the conference is available on the NOWRA website at: http//www.nowra.org/content.asp?pl=28&contentid=56
Conference proceedings are also available on the NOWRA website at: http//www.nowra.org/2014proceedings

Chikungunya Hits U.S. Mainland

The first locally acquired cases of chikungunya were reported in Florida on July 17, 2014. These cases represent the first time that mosquitoes in the continental United States are thought to have spread the virus to non-travelers. Though CDC does not expect widespread cases this year, Americans infected when traveling to the Caribbean, South America, or the Pacific Islands may continue to return and bring the virus with them. For updates on locally acquired and travel associated chikungunya cases, visit CDC's chikungunya website.

ASK THE INSPECTOR — FOOD SANITATION QUESTION

Submitted by Greg Willis, RS - District Manager, Ks. Dept. of Ag, Division of Food Safety & Lodging

Question: Is meat cooked at 120 degrees for 48 hours safe to eat? (Whole cut of meat such as a roast)

Answer:

Whole MEAT roasts including beef, corned beef, lamb, pork, and cured pork roasts such as ham shall be cooked:
(1) In an oven that is preheated to the temperature specified for the roast's weight in the following chart and that is held at that temperature:

Oven Temperature Based on Roast Weight
(1) Relative humidity greater than 90% for at least 1 hour as measured in the cooking chamber or exit of the oven; or in a moisture-impermeable bag that provides 100% humidity.

Oven Type	Less than 4.5 kg (10lbs)	4.5 kg (10lbs) or more
Still Dry	177°C (350°F) or more	121°C (250°F) or more
Convection	163°C (325°F) or more	121°C (250°F) or more
1 High Humidity	121°C (250°F) or less	121°C (250°F) or less

(2) As specified in the following chart, to heat all parts of the FOOD to a temperature and for the holding time that corresponds to that temperature:

Temperature °C (°F)	Time in Minutes
54.4 (130)	112
55.0 (131)	89
56.1 (133)	56
57.2 (135)	36
57.8 (136)	28
58.9 (138)	18
60.0 (140)	12
61.1 (142)	8
62.2 (144)	5

The short answer is NO! The danger zone for bacteria is 41°F - 135°F, which this would clearly be too long in the danger zone.

The long answer would be, that after a certain amount of time there would be no water left in the meat for bacteria to survive. If this process were to be used, a controlled study, would need to be performed.

Global Weirding Reports

Excerpts from recent articles on Climate Change
Collected by Ann Mayo, MS, RS

From the Climate Change Synthesis Report 2014 (Draft)
International Panel on Climate Change

Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.

Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, and sea level has risen. Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years.

Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century. Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.

Climate change will amplify existing risks and create new risks for natural and human systems. Risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development.

Without additional mitigation efforts beyond those in place today, and even with adaptation, warming by the end of the 21st century will lead to high to very high risk of severe, widespread, and irreversible impacts globally (high confidence). Mitigation involves some level of co-benefits and of risks due to adverse side-effects, but these risks do not involve the same possibility of severe, widespread, and irreversible impacts as risks from climate change, increasing the benefits from near-term mitigation efforts.

There are multiple mitigation pathways that are likely to limit warming to below 2°C relative to preindustrial levels. These pathways would require substantial emissions reductions over the next few decades and near zero emissions of CO2 and other long-lived GHG's (greenhouse gases) by the end of the century. Implementing such reductions poses substantial technological, economic, social, and institutional challenges, which increase with delays in additional mitigation and if key technologies are not available. Limiting warming to lower or higher levels involves similar challenges, but on different timescales.

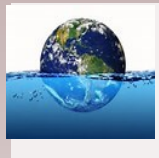
Adaptation and mitigation responses are underpinned by common enabling factors. These include effective Institutions and governance, innovation and investments in environmentally sound technologies and infrastructure, sustainable livelihoods, and behavioral and lifestyle choices.

Rivers are draining Greenland quickly

By Carol Rassmussen, NASA Earth Science News Team - January 12, 2015

Rivers of glacial meltwater flowing over Greenland's frozen surface may be contributing as much to global sea level as all other processes that drain water from the melting ice sheet combined, according to researchers at the University of California, Los Angeles, and NASA. Eighty percent of Greenland, which is about the size of the United States west of the Rocky Mountains, is covered by ice, which has the potential to make a significant Contribution to sea level rise as it melts. Research took place in July 2012. The researchers mapped rivers and streams over about 2,000 square miles of Greenland. Virtually all of the flowing water drains directly to the Ocean through sinkholes.

(continued of Page 7)



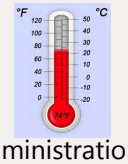
Global Weirding Reports (cont'd from page 7)

The tides are changing: Sea levels rising at faster rate than predicted, study finds

Reported by Steve Connor for The Independent, UK - January 14, 2015

Global sea levels have risen faster than previously thought over the past century, suggesting that climate change is having a greater-than-expected impact on the rising oceans, a study has found. However the new estimate, based on a revised statistical analysis of the data, suggests the annual rate was about 1.2 mm between 1900 and 1990 and about 3 mm per year since 1990. "What this study [study] shows is that sea-level acceleration over the past century has been greater than had been estimated by others. It's a larger problem than we initially thought," said Erick Morrow of Harvard University**.**

2014 warmest year on record



Source: EarthSky//Earth, Human World, Science Wire Release Date: Jan 17, 2015

The National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) confirmed on January 16, 2015 that 2014 was Earth's warmest year since record-keeping began in 1880. 2010 owned the title for warmest year prior to 2014, with 2005 and 1998 just behind it. It might have been cool where you lived, but most of the globe was experimenting temperatures well above average. The report also says that global oceans experienced the warmest year ever recorded, making ocean temps in 2014 the highest among all years in the 1880-2014 record, and surpassing the previous records of 1998 and 2003 by 0.09°F (0.05°C). Six months of 2014 - May, June, August, September, October, and December - had record warmth for land and ocean temperatures, combined beating out all monthly records set since 1880. Surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is *very likely* that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions. The ocean will continue to warm and acidify, and global mean sea level to rise.

2015 United Nations Climate Change Conference

The United Nations international climate conference will be held in Paris from November 30 through December 11, 2015. The overarching goal of the Convention is to reduce greenhouse gas emissions to limit the global temperature increase of 2 degrees Celsius above pre-industrial levels.

Global Weirding is a name coined by Hunter Lovins, co-founder of the Rocky Mountain Institute. He believes climate warming will result in dramatic weather events such as: hotter heat spells; colder cold spells; more violent storms, more intense flooding and forest fires; and, greater species loss.

Unusual Number of UK Flowers Bloom

Reported by Roger Harrabin for the BBC - January 9, 2015

Botanists have been stunned by the results of their annual hunt for plants in flower on New Year's Day in the United Kingdom. They say according to textbooks there should be between 20 to 30 species in flower. This year there were 368 in bloom. It raises further questions about the effects of climate change during the UK's warmest year on record.

"Wind Turbines = Environmental Health Hazard ?"

By Guy Crabill , R.S. — KEHA Environmental Section Chair

In eastern Kansas, large commercial wind turbines have yet to become a predominate feature of the landscape. In Franklin County we have a few private, modern windmills which provide auxiliary power to private residents. On a recent drive from New Mexico back to Franklin County, I was struck by how prevalent wind farms have become in the middle and western parts of the State of Kansas.

I had heard of concerns expressed by environmentalists concerning the effects of wind farms on the migratory patterns of birds, bats and other wildlife, but had given little thought to any human health hazards. However, I recently received a press release from the Wisconsin based BCCRWE (Brown County Citizens for Responsible Energy) which trumpets the decision by the Brown County Wisconsin, Board of Health which is to declare "the industrial Wind Turbines at Shirley Wind Projects in the Town of Glenmore, Brown County, WI, a human health hazard for all people (residents, workers, visitors, and sensitive passersby) who are exposed to infrasound/low frequency noise and other emissions potentially harmful to human health."

While I cannot judge the scientific merits or the validity of this decision, a close reading of the press release seems to indicate that local government entities are in conflict with the State of Wisconsin concerning who has the ultimate authority for locating wind farms within the community. It would appear the local Board of Health as been drawn into this conflict.

Looking into the subject of infrasound/low frequency noise leads one to stories concerning "Wind Turbine Syndrome." Symptoms are described as dizziness, headaches, ringing in the ears and insomnia. "Wind Turbine Syndrome" is thought to be a human reaction to consistent exposure to high pulse vibrations coming from rapidly spinning turbines.

However, for all the claims that "Wind Turbine Syndrome" exists and is a threat to human health, little scientific data seems to have yet been published to support this claim. Many of the stories from people living near wind farms, claiming adverse physical and health symptoms appear to be antidotal and suffer from a sincere confusion of cause and effect or observational selection. The CDC does not recognize this as an official disease at this time.

Some sources cite "Wind Turbine Syndrome" as being an example of a "Nocebo" effect or the opposite of a Placebo effect. The Nocebo effect is harmful symptoms arising from negative information. Earlier and ongoing claims to technology causing health problems have been high tension power lines, cell phones, cell phone towers and more recently Wi Fi connections.

Having worked in the private sector and having been involved in remediation activities on a number of sites throughout the United States, I do not take the result of unintended consequences lightly. However, political expediency should not negate good science. To quote Macello Truzzi and later Carl Sagan, "Extraordinary claims require extraordinary proof".

KDHE Reorganization of Bureau of Environmental Health Announced by Office of Communications

Susan Mosier, M.D. Acting Secretary of KDHE announced in January a reorganization of the Bureau of Environmental Health (BEH) programs, effective February 1. The Asbestos Program will be rejoining the Bureau of Air. The Environmental Public Health Tracking Program will become part of the Bureau of Epidemiology and Public Health Informatics. The Healthy Homes and Lead Hazard Prevention Program will become part of the Bureau of Family Health. The Radiation and Right-to-Know Programs are joining the Bureau of Community Health Systems as the Radiation Control Program. While KDHE won't have a single bureau that goes by the name "Environmental Health," the agency's work in these critical program areas remains a departmental priority. Through this reorganization, KDHE will benefit from improved programmatic alignments that better support the KDHE mission, as well as the Governor's Road Map.

BOURBON VIRUS by Ann Mayo, MS, RS
Condensed from the December 22, 2014 KDHE Press Release and from the CDC

The Kansas Department of Health and Environment (KDHE) is working closely with the Centers of Disease Control and Prevention (CDC) to investigate a new virus which has been linked to the death of a Kansas resident during the summer of 2014. Although the host of this new virus, called Bourbon virus, is unknown at this time, it is thought to be transmitted through the bites of ticks or other insects.

Symptoms in the Kansas resident included fever and fatigue and resembled the symptoms of Ehrlichiosis and Heartland Virus Disease. It is not known if Bourbon virus was the cause of death or how much it contributed to the resident's death. There is no known specific treatment, vaccine, or drug for Bourbon Virus Disease.

This is the first known case of Bourbon virus, which has been named after Bourbon County, where the patient had lived. Investigations are ongoing to explore how people are getting infected with the virus, including plans to collect and test ticks and other insects for the new virus.

At first, it was though that Bourbon virus might be the Heartland virus that was identified in Northwest Missouri in 2012. This was proven not to be the case. As of March 2014, eight cases of Heartland Virus Disease had been identified among residents of Missouri and Tennessee. It is unknown at this time if the virus may be found in other areas of the United States. All patients diagnosed with Heartland Virus Disease became sick during May-September. They all had a fever and felt very tired. Some also complained of headaches, muscle aches, diarrhea, losing their appetite, of feeling sick to their stomach. They all had low numbers of infection fighting cells and the cells that help blood clot. Most patients required hospitalization for their illness. Most patients fully recovered, but one patient died.

Since Bourbon Virus Disease and Heartland Virus Disease are thought to be transmitted through tick or insect bites, rick to the public during the winter months is minimal. To reduce the potential risk of tick-or insect-borne illnesses, the KDHE and CDC recommend that people:

1. Avoid wooded and bushy areas with high grass and leaf litter;
2. Use insect repellent containing DEET when outdoors;
3. Use products that contain permethrin on clothing;
4. Wear clothing with long sleeves and pants;
5. Bathe or shower as soon as possible after coming indoors to wash off and more easily find ticks that are crawling on you;
6. Conduct a full body tick check after spending time outdoors; and
7. Examine gear and pets, as ticks can "ride" into the home and attach to a person later.

KDHE has submitted an article to a peer-reviewed journal for publication that has additional information. It has not been published.

SCHOLARSHIPS FOR SANITARIANS by Ann D'Alfonso, KDHE—WMS

Recently KDHE, Watershed Management Section (WMS) has partnered with the Kansas Small Flows Association (KSFA) to offer five, two day workshops focusing on onsite wastewater information and education. KDHE, WMS will be providing 10 scholarships to each workshop for sanitarians/ regulators. The KDHE/ Kansas Small Flows scholarships will cover the costs associated with registration, hotel, per diem, and mileage reimbursement at each KSFA workshop.

The first KSFA workshop (Soils for onsite wastewater) occurred this past October in Wichita. The second workshop was during the KSFA Annual Conference on February 5th & 6th. The two day workshop will be covering *Choosing the System Best for the Site* and *Pumps, Panels and Electrical for Onsite*. Three additional workshops will be scheduled throughout 2015; topics, dates and locations to be determined.

In addition, eleven sanitarian/regulators were awarded scholarships to attend the National Onsite Wastewater & Recycling Association (NOWRA) conference held in Denver Colorado on November 9-12, 2014.

If you are interested in additional information about the KSFA workshop scholarship, please e-mail Ann D'Alfonso with KDHE or Charlene Weiss with KSFA.

KDHE Sponsors LEPP Sanitarian Meetings Throughout the State by Ann D'Alfonso, KDHE– WMS

Throughout December 2014 and January 2015, KDHE sponsored a series of four LEPP Sanitarian Meetings across the state. The purpose of these annual sanitarian meetings are two-fold;

1) allows KDHE to share information on issues at the state level and get feedback from local sanitarians and
2) an opportunity for sanitarians to discuss policies and procedures with each other and find solutions to problems that they are currently addressing.

KDHE shared information on a new Low Interest Loan Program that may provide funds for repairing onsite wastewater systems as well as funding agricultural practices that will help reduce nutrient loading in Kansas surface waters. Look for more information on this program in late summary 2015. KDHE also updated the sanitarians on scholarship opportunities for onsite wastewater training through the Kansas Small Flows Association.

Round Table discussions included the following topics – County Code Revisions; County Attorney and County Commissioner roles in enforcement of local sanitary codes; Sharing of new onsite wastewater technologies; Water well education; and Land application of septage to name a few. As is usual for these meetings, there were many more topics to be discussed than time allowed.

Chickens and Histoplasmosis submitted by Beth Rowlands, KDHE—WMS

With many Kansas cities passing ordinances allowing chickens within the city limits, sanitarians may get inquiries from concerned citizens regarding the potential health risks associated with histoplasmosis.

Histoplasmosis is an infection caused by the fungus *Histoplama*. The fungus can be found throughout Kansas and thrives in soil that contains large amounts of bird (or bat) droppings. People can be exposed to *Histoplama* when they disturb the soil where the fungus is (e.g. cleaning out chicken coops, tearing down old buildings). Although anyone can become infected with histoplasmosis people with a weakened immune system (e.g. people who have had an organ transplant, taking certain medications, infants, and adults >55 years of age, etc.) are at increased risk. Since cases of histoplasmosis, when diagnosed in people, are not required to be reported in Kansas it is unknown how many people may have this disease.

Since the fungus is considered to be throughout the entire state of Kansas an individual would be unable to avoid contact with it all together. There are steps that people can take to decrease their risk of exposure, especially controlling dust when removing bird (or bat) manure from a building (e.g. wetting the material with water before removal).

While KDHE Bureau of Epidemiology and Public Health Informatics do not believe that allowing small flocks of chickens inside the city limits will pose a health risk, there are several issues to address prior to considering passing an ordinance.

1. Type of poultry – Consider the type of poultry you will allow. Many cities only allow chickens; some allow chickens or ducks but not turkeys or peacocks. Do not allow roosters or Guineas due noise complaints.
2. Number of chickens allowed – I have reviewed other city ordinances and the number of chickens allowed is variable. The City of Wichita allows up to 4 hens without a permit and 4-12 with a permit ($25).
3. Chicken housing – Chickens are not allowed to roam free and should be kept in a sanitary enclosure at all times. The enclosure should be kept at least 10 feet from any property line and 25 feet from any adjacent residence. Specific guidelines on the structure are recommended (e.g. sturdily built, etc.).
4. Provision for dog attack - If chickens get loose and a dog or cat kills a chicken, the dog or cat is not considered a dangerous animal (Columbia, MO).
5. Human health hazard issues
   A. Disposal of chicken manure—storage, location, frequency of removal.
   B. Rodents– Poultry, their feed and waste can attract rodents, especially rats. Store feed in sealed container.
   C. Fly control - through maintenance of coop, proper cleaning and disposal of coop and waste, storage of food.
   D. Salmonella—a prominent public health issue especially during the spring handling of baby chicks, contact with chicken manure, or improperly cooking eggs and poultry.
6. Animal welfare issues - 1. cock fighting—prohibit roosters inside city limits.
   2. What to do with chickens that are no longer productive? Some cities have raised concerns that chickens would be set free or overwhelm the humane shelter.

For more information on Histoplasmosis visit the Centers for Disease Control and Prevention webpage to review *Histoplasmosis—Protecting Workers at Risk* at http://www.cdc.gov/niosh/docs/2005-109/

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How is typhoid fever spread? *Salmonella* Typhi lives only in humans. Persons with typhoid fever carry the bacteria in their bloodstream and intestinal tract. In addition, a small number of persons, called carriers, recover from typhoid fever but continue to carry the bacteria. Both ill persons and carriers shed *Salmonella* Typhi in their feces (stool). You can get typhoid fever if you eat food or drink beverages that have been handled by a person who is shedding *Salmonella* Typhi or if sewage contaminated with *Salmonella* Typhi bacteria gets into the water you use for drinking or washing food. Therefore, typhoid fever is more common in areas of the world where handwashing is less frequent and water is likely to be contaminated with sewage. (CDC website)*nella*

Affiliate of the National Environmental Health Association

The Objective of the Kansas Environmental Health Association is to promote competency and effectiveness in sanitarians and other environmentalists engaged in the regulation of the Kansas environment including, but not limited to, food service establishments, commercial food preparation facilities, dairy products businesses, meat processing plants, bakeries, commercial lodging and hotels, swimming pools, water supplies, wastewater treatment and disposal, solid waste collection and disposal, air pollution control, radiation control, hazardous waste materials management, pesticide usage, institutions, schools, nursing homes, hospitals and health care facilities, recreational camps and public events.

Kansas Environmental Health Association
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Lawrence, KS 66044
Email: indiangrass1@gmail.com

WE'RE ON THE WEB!

WWW.KEHA.US