

Master of Public Health Field Experience Report

BIOSECURITY AND ZOOONOTIC DISEASE CHALLENGES

AT THE KANSAS STATE FAIR

by

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Abstract

The author carried out his field experience in the Kansas Department of Agriculture, Division of Animal Health in Manhattan, Kansas from August 2014 to May 2015. The Kansas Department of Agriculture is the oldest agriculture department in the United States. It has as its responsibility, the overall support of agriculture in Kansas. The Kansas Department of Agriculture (KDA) is divided into a number of divisions and programs to carry out its mission. The Division of Animal Health was created in 1969 from a consolidation of the Livestock Sanitary Commission and the State Brand Commission. The Division of Animal Health joined the Kansas Department of Agriculture in 2011. It is comprised of three programs: animal disease control, livestock brands and animal facilities inspection. The Kansas Board of Veterinary Examiners also operates under the Division of Animal Health. The Division of Animal Health's objectives include the securing of public health and safety of the citizens of Kansas through the prevention, control and eradication of infectious diseases and conditions affecting the health of livestock and domestic animals in the state.

The author was involved in several different projects and activities. These included:

- 1) Biosecurity recommendations for the Kansas State Fair
- 2) Ebola virus disease table top exercises for state agencies in Kansas,
- 3) Foreign animal disease (FAD) outbreak: Foot and Mouth Disease table-top exercises
- 4) Low pathogenic avian influenza outbreak table-top exercise
- 5) One Health Collaboration Gap Analysis.

The author completed a lengthy project (culminating experience) in the development of biosecurity recommendations for the Kansas State Fair. These recommendations dealt with several facets of biosecurity including animal-to-human disease prevention (zoonotic diseases) as well as animal-to-animal disease prevention. The challenge of having large numbers of people at the fair in crowded spaces, combined with thousands of head of livestock and poultry while at the same time encouraging people to consume food and drink, sets up the potential for large outbreaks of zoonotic and/or food borne diseases. In preparing these recommendations, several factors weigh heavily into making practical, science based recommendations to protect the public. These factors include, the positive name of Kansas agriculture (which is show-cased at the fair), aging fair facilities and limited financial budgets. Human behavior also plays a large roll in reducing or increasing the risks of zoonotic disease at the fair or petting zoo. Education of fair visitors is vital to raising awareness that apparently healthy animals can be a source of disease. Facilities for hand washing or hand sanitizing along with promoting the use of these hand hygiene techniques is necessary to reduce the occurrence of zoonotic disease at the fair.

The biosecurity documents were constructed as three different levels of biosecurity: gold (highest), silver (medium) and bronze (lowest level). The intention was that the Kansas State Fair management not be overwhelmed at the prospect of trying to achieve too many changes in a single year of operation. The gold level may not be financially possible the first or second year of improvement and the management could opt for attempting a lower level as opposed to making no biosecurity improvements. These three separate documents appear in their entirety in the Appendix section of this report.

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Chapter 1

Field Experience Scope of Work

The author's overall goal was to understand the public health aspect of regulatory veterinary medicine by working in the Kansas Department of Agriculture in the Division of Animal Health in Manhattan, Kansas. The author accomplished this by assisting in the development of biosecurity standards for large animal exhibition events (fairs and livestock shows) where there is a high risk of human-animal contact and thus of zoonotic disease transmission. These large exhibition events pose unique problems as the co-mingled livestock and public are from very diverse geographical areas. The potential for food borne illness from animal exhibits, as well as primary zoonotic diseases, are evident in these events. Coordination between agencies is important to assure the public health of those attending.

The author's aim was to understand the process of animal disease emergency preparedness and response through exercises, planning, and workgroup participation. This was accomplished through planning and participating in current workshops, as well as participating in exercises. Among these was a table top exercise on foot and mouth disease and avian influenza. The author learned what has been accomplished and participated in improving the processes that keep the food supply safe from foreign animal disease threats and available for consumers. Through the evaluation of current disease response processes in Kansas, the author learned about the complex and diverse systems in place in a multi-agency disease response effort. The author participated in a gap analysis of an infectious disease control process through evaluation of critical planning/action steps of key stakeholder agencies.

Chapter 2

Learning Objectives

1. Understand how zoonotic disease surveillance is or can be incorporated from human and animal health agencies.
2. Understand infectious disease reporting requirements and regulatory processes on the state and federal level.
3. Understand and participate in the process of developing exercises to evaluate animal disease emergency plans.
4. Understand the need for and public health significance of large scale biosecurity plans for large exhibition events.

These learning objectives were compiled by the author in conjunction with the author's major professor and the author's field experience preceptor. They were designed to frame the parameters of the internship learning experience.

Chapter 3

Kansas State Fair Biosecurity: People, Animals and Zoonotic Diseases

Americans love to go to the fair. It is estimated that 125 million Americans (roughly 40% of the total population) annually attend one of the 3,500 state and county fairs in the US.[1] People in Kansas love the fair as well. The Kansas State Fair (KSF) is held each year during the month of September in Hutchinson, Kansas. The fair has more than a century of history in agriculture exhibits, livestock competition and entertainment.[2] It is the largest mass gathering in Kansas, boasting more than 355,000 visitors in September 2014 during its 10 days of operation.[3] More than 2,000 head of livestock and poultry were present at the Kansas State Fair in September 2014¹, along with more than 123 food vendor. The Kansas State Fair is governed by a Board of Directors comprised of 13 people from throughout the state of Kansas and represents various entities in the state. The current Secretary of Agriculture, Dr. Jackie McClaskey, is a member of the State Fair Board of Directors. [4] It is a common practice among state fairs in the mid-west for the animal health commissioner or the state veterinarian to be closely involved in the respective state fair animal health regulations. This is true in Kansas where the Kansas Animal Health Commissioner is actively involved in the Kansas State Fair.

Public health authorities have noted that in events which bring together large numbers of people, animals and food vendors in the same spaces, such as the Kansas State Fair, the possibility of the transmission of zoonotic disease (such as *E. coli* H7:O157) is at a high level.[5] The challenge of biosecurity at fairs and exhibitions (such as the Kansas State Fair) requires a balance between a high level of biosecurity and avoiding such onerous or burdensome requirements on visitors to the level that causes them not to attend. There must be a “middle

¹ E-mail communication with Denny Stoecklein, General Manage Kansas State Fair, October 30, 2014.

ground” where an acceptable risk level is found and also where fair visitors continue to desire to attend the fair, while heeding the biosecurity requests placed up on them. It is hoped the biosecurity recommendations in this paper also can be of use for other smaller fairs and livestock exhibitions.

3.1 Why Biosecurity is a High Priority to the Fair

The State Fair is an agricultural teaching event, promotes the human–animal bond, provides entertainment for the public, and is an exhibition of Kansas agriculture. Fair organizers desire that the fair should be a place where the citizens of Kansas can safely learn, appreciate the state’s agricultural industry and enjoy a good time.[2] The Kansas Department of Agriculture, Division of Animal Health was approached by the Kansas State Fair management about advice on improving biosecurity at the State Fair about three years ago. Staff members in the Division of Animal Health had made initial outlines for improving biosecurity at the fair prior to this author’s work on the project.² This author took the initial outline and through literature research, consulting with fairs in other states, discussions with public health and animal health authorities, and discussions with fair workers, developed these recommendations. The author also utilized information from the Compendium of Measures to Prevent Diseases Associated with Animals in Public Settings, 2013.[6] The Kansas Department of Health and Environment has a Disease Prevention for Fairs and Festival tool-kit online document that also provided guidance for these biosecurity recommendations. [7] These recommendations created by the author are not a static document but will need updating and improvement as changes occur at the State Fair and in animal and public health conditions in Kansas. The deeper meaning for these biosecurity recommendations is that our children and youth in Kansas have a safe,

² Personal communication with Dr. Justin Smith, Deputy Animal Health Commissioner, Kansas Department of Agriculture, Manhattan, KS

memorable and enjoyable time at the fair without falling sick from zoonotic disease.

3.2 The Kansas State Fair as an agricultural educational class room

Agriculture in Kansas is a \$7 billion dollar segment of the state economy.³ It employs approximately 123,818 people in Kansas. It ranks seventh in the state economy sectors (aircraft manufacturing is first place sector) in 2014 ratings⁴. A growing number of people (children and adults) do not know where their food comes in the US. One survey indicated that only 31 % of all young people in the US had ever visited a farm, yet consumers have a desire to be linked to the origin of their food[8]. This is especially true as the US population becomes more urban rather than rural as previous generations were. The Kansas State Fair is a large, multifaceted class room for instructing children and adults on where their food comes from as well as the major role that Kansas plays in the national food supply. Agriculture in Kansas is one of the reasons that the USA continues to have an abundant, affordable food supply. The livestock exhibits at the fair, the cow milking demonstrations, the animal birthing exhibition, petting zoo, poultry exhibits, the wheat and grain exhibitions, vegetable and produce competitions, along with the farm equipment displays serve to educate fair visitors where their food originates.

3.3 Human–Animal Bond and the Kansas State Fair

In addition to the agricultural education the fair provides, the Human–Animal Bond is also on display at the livestock exhibitions and other animal

³ Personal communication, Josh Roe, Kansas Department of Agriculture agricultural economist, December 12, 2014.

⁴ Personal communication from Josh Roe using statistics from Kansas Department of Agriculture, October 29, 2014.

contact and exhibition areas include the petting zoo, the animal birthing center, livestock exhibits and bison exhibition. Promoting this bond and seeking to share it with fair visitors is an important part of Kansas livestock agriculture. It helps visitors understand why livestock and poultry farmers engage in the often physically difficult and financially risky area of animal agriculture. [9] [10]

3.4 One Health and the Kansas State Fair

One Health is an initiative to promote the inter-connectedness of animal health, human health and environmental concerns together such that all three of these areas profit. It is a movement to bring together health professionals from many disciplines such as veterinary medicine, human medicine and the environmental science disciplines to promote health and scientific progress in the world. It has been endorsed by hundreds of health professionals and scientists from around the world. [11] The State Fair provides an opportunity for One Health to make an impact in protecting fair visitors from potential health hazards. While the livestock exhibits, petting zoo, animal birthing exhibition and poultry exhibits pose unique challenges for fair biosecurity, risk reduction interventions can be implemented that will allow fair visitors to profit educationally from the fair in the areas mentioned above.

3.5 Risk appraisal at the fair

To the knowledge of this author, a formal risk appraisal has never been made at the Kansas State Fair. However, a personal walk-through of the fair facilities by this author along with communication with Kansas State Fair management indicated areas of potential zoonotic disease transmission that needed to be addressed. The people consulted with in the Kansas State Fair management included Denny Stoecklein, Kansas State Fair General Manager and the Kansas State Fair veterinarian, Dr. Dayul E. Dick of Hutchinson, Kansas. Dr.

Justin Smith, Deputy Animal Health Commissioner, Kansas Department of Agriculture, has several years of experience at the fair. He was also consulted about risk and needed areas of improvement at the fair. Risk can never be reduced to zero at the fair, but efforts to minimize risks while not over-burdening fair visitors with biosecurity requests is the goal. As mentioned above, when hundreds of thousands of people are brought together in a confined area of the fairgrounds, along with livestock and poultry while being encouraged to eat and drink, the risk of zoonotic disease increases considerably. In the Kansas State Fair there are millions of human-animal contact interactions each year.

According to the people mentioned above (Dr. Smith, Mr. Stoecklein and Dr. Dick), there has never been a recorded or reported incident of zoonotic disease at the fair. One of the limitations of this statement is that many fair visitors do not live in the county (Reno) where the Kansas State Fair is located. People may attend the fair, become sick a few days later and not attribute it to the fair visit. They fall ill elsewhere (usually in their home county) and the history of a Kansas State Fair visit may not be recorded in connection with the illness. In the state of Kansas there has been a recorded episode of swine influenza passing from pigs to a Kansas county fair visitor.[7] If a given fair has never experienced a recorded zoonotic disease outbreak, the fair management may seem uninterested in encouraging improved biosecurity efforts.

Chapter 4

Previous Incidents of Zoonotic Disease at Fairs in the U.S.

The scientific literature has numerous reports of outbreaks of human illness that have been associated with fair visits and the associated animal contact. In the time period from 1991 to 2005, the number of enteric disease outbreaks in humans associated with animal contact in public settings (such as fairs) has increased.[12] Enteric disease outbreaks in humans with animal contact are no longer just a foodborne problem.[12] The Centers for Disease Control and Prevention (CDC) received reports of approximately 200 human infectious disease outbreaks that were associated with animal contacts in the years from 1996 through the year 2012.[6] According to the CDC and other authorities, the most commonly transmitted disease agents found in fairs include *E. coli*, *Salmonella* species, *Campylobacter*, *Cryptosporidiosis* and swine influenza (Influenza A).[12] The shedding of STEC (Shiga toxin producing *E. Coli*) and *Salmonella* bacteria are often highest in the fall and summer months. These times coincide with the months when larger numbers of agricultural fairs and livestock exhibits are scheduled. [6]

Often such outbreaks of human illness at fairs are the topic of media news and consequently discourage the public from attending a fair and experiencing many of the educational benefits mentioned above. Consumer confidence in the fair falls. Outbreaks of human illness have substantial economic, legal, public health and medical effects. [6, 13, 14]

Petting zoos are often found within county and state fairs across the US. This is the case for the Kansas State Fair where the petting zoo at the State Fair is operated by an outside party; but it is a part of the fair. Petting zoos may also be found at other mass gathering events where they are not connected with a fair; but connected to a seasonal festival (for example as in the Cider Days Festival in Topeka, Kansas). Table 1 gives a brief review of fairs and associated petting zoos in the US, where outbreaks of human illness among fair visitors have been associated with animal contact.

Table 1

**Outbreaks of zoonotic disease associated with fairs and petting
zoos in the USA from literature sources 1999-2011**

Reference	Date of Fair	State	Location of fair	Zoonotic pathogen identified	Number of people affected	Number of deaths	Number of hospitalizations	Number of cases of HUS ¹	Attendance at the fair
[15]	1999	New York	Washington County	<i>Campylobacter jejuni</i> ; <i>E.coli</i> O157:H7 ²	921	2	65	11	108,000
[16]	September 2001	Ohio	Lorain County Fair	<i>E.coli</i> O157:H7	23	0	6	2	160,000 visitors in 2014 fair[17]
[18]	September 2002	Ohio	Wyandot County Fair	<i>E.coli</i> O157:H7	92	0	Not Reported	2	38,000 in 2014[19]
[1]	September 2003	Texas	Fort Bend County	<i>E.coli</i> O157:H7	25	0	6	4	170,307
[13]	2004	North Carolina	North Carolina State Fair Wake County	<i>E.coli</i> O157:H7	108	0	4	15	800,000
[20]	2005	Florida	Florida Fairs and Festivals	<i>E.coli</i> O157:H7	63	0	17	7	unknown
[21-23]	2007	Ohio	Huron County fair	Swine origin Influenza A virus (H1N1)	26	0	N/A	N/A	unknown
[24, 25]	2009	Kansas	County fair	Swine origin Influenza virus A(H3N2)	1	0	0	N/A	Unknown
[13, 26]	2011	North Carolina	North Carolina State Fair Wake County	<i>E.coli</i> O157:H7	25	0	8	4	Approximately 1,000,000
[27, 28]	September 26 to October 7, 2012	North Carolina	Cleveland County Fair	<i>E.coli</i> O157:H7	106	1	13	1	165,000

1. HUS is hemolytic uremic syndrome. 2. Water source related outbreak N/A -Not Available

4.1 Enteric diseases and fecal-oral transmission

The route of transmission associated with most cases of human illness at fairs is fecal-oral transmission. Of the pathogens listed above by the CDC as common pathogens found in zoonotic diseases at fairs, *E. coli*, *Salmonella* spp. and *Cryptosporidia* spp. and *Campylobacter jejuni* would be among the agents transmitted from animals to fair visitors. This can be through either direct or indirect contact with fecal material.[6] Fair visitors often desire to touch or pet livestock at the fair. This results in the risk of contacting fecal matter on hair, feathers and hides. Indirect contact is usually through visitors touching gates and pens that have fecal matter on them. Often this fecal matter and the accompanying pathogens are transferred to the face or mouth through hand-to-face contact. Children (those usually five years of age or younger) are at high risk for hand-to-mouth behavior (including use of pacifiers, eating or thumb sucking) and thus are more likely to have the fecal- oral transmission of the pathogens.[6] Also for similar reasons, adults who are mentally challenged and visiting the livestock areas of the fair may also be as a similar risk due to child-like behaviors.[29]

Transmission of *E. coli* through dust in livestock barns has been reported. These cases usually involved food eaten in barns where livestock shows were previously held. *E. coli* survived in the environment of these barns for several weeks in these human outbreaks of enteric disease.[1, 30] Out breaks of *E. coli* have been observed in fair visitors as well as fair exhibitors in *E. coli* H7:O157 outbreaks at fairs.[1]

4.2 Influenza viruses and the State Fair

Influenza virus transmission in visitors at fairs has occurred primarily through direct contact with swine[6]. Airborne transmission, however, could occur. [31] Vaccination of swine entering the fair one month or more prior to the competition would be a method to reduce the risk of swine flu virus passing to fair

visitors. Vaccination of swine with a licensed swine flu vaccine will in most cases reduce the risk of people being exposed to the influenza virus.⁵

Swine exhibits at fairs provide opportunity for bidirectional transmission (people to swine and swine to people) of influenza viruses. There is comingling of swine from multiple sources with humans; both exhibitors and fair visitors. Swine at fairs along with bi-directional transmission of influenza viruses emphasize the fact that swine in the fair setting are potentially exposed to multiple lineages of influenza A viruses. This situation makes fairs ideal locations for genomic reassortment and formation of novel viruses.[32]

5 . Personal communication by e-mail with Dr. Jürgen Richt. Professor at Kansas State University, College of Veterinary Medicine, October 31, 2014.

Chapter 5

Practical Applications of Current Zoonotic Disease Knowledge to the Kansas State Fair Biosecurity Recommendations

5.1 Hand hygiene and food consumption by visitors

The Kansas State Fair hosted 123 food vendors in September, 2014.[4] These food vendors are register and inspected through the Kansas Department of Agriculture, Food Safety and Lodging Division. Before each fair season, vendors must apply and be inspected in order to sell food at the Kansas State Fair. In relation to consuming food and drink at the fair, visitors need to be made aware of the need for hand washing before eating. Fair visitors may visit the petting zoo or livestock barn and then go directly to the food vendors' area for a meal without proper hand washing or sanitizing. This sets up a high risk situation for fecal-oral transmission of pathogens from the animal contact. Requiring food vendors to have a hand sanitizing station at the vendor site would be a way to encourage visitors to sanitize their hands prior to eating. Parents would need to be responsible for sanitizing or washing children's hands prior to eating. Also having signage to encourage hand washing and the presence of hand washing or hand sanitizing stations at the exits of the petting zoo and the livestock barns would encourage visitors to carry out hand hygiene up on departure from these areas. The author, in a visit to the fair in September, noted only one food vendor that had a hand sanitizer station (with signage encouraging hand sanitizing) at the serving window of the vendor's trailer.

5.2 Human behavior and exposure to zoonotic pathogens at the fair

Human behavior is complex.⁶ Human behavior plays an important part in increasing risk at an animal contact event such as the Kansas State Fair. The

⁶ The author came to understand much about how the complexity of human behavior plays a role in the area of public health in the course, Social and Behavioral Bases of Public Health, MPH 818 at KSU.

biosecurity recommendations prepared for the Kansas State Fair have provisions for reducing these risky behaviors. Important risk factors have been identified at fairs and petting zoos throughout the US and presented in the literature. These behaviors are listed along with a brief explanation of how they contribute to the transmission of zoonotic disease at the fair as well as recommended interventions to reduce risk.

1) Lack of hand washing (hand hygiene) following visits to fairs and petting zoos

Many reports in the scientific literature suggest that hand washing would greatly reduce the number of cases of zoonotic disease acquired by people at the fair if it were carried out at fairs and petting zoos.[7, 33-35] The Kansas State Fair currently has 32 hand sanitizer stations that can be (and are) distributed throughout the fair at the petting zoo, the livestock exhibitions, the rabbit and poultry barn and the birthing center. In addition to these, the State Fair has approximately 73 hand washing sinks in restrooms in the livestock exhibit buildings.⁷ These are distributed among 15 buildings at the fairgrounds. While additional research needs to be carried out to know the number of visitors attending the petting zoo, the livestock exhibits and the birthing center, this author suggests that the number of hand sanitizer stations be increased to 88. This is based on a formula from the Kansas Department of Health and Environment.[7] These hand sanitizers should be of different heights that would allow both children and adults to practice hand hygiene. While hand washing with soap and water is the preferred method for hand hygiene, not all facilities at the fair have plumbing for water and drains. The best solution in these situation are hand sanitizers stations that are kept in good condition and stocked with sanitizer solution frequently.[35] The Kansas State Fair buildings are not always

⁷ Personal communication by email with Mr. Denny Stoecklein, Kansas State Fair General Manager. October 16, 2014.

configured in ways that funnel visitors toward a hand washing station or hand hygiene station. Research has suggested that if visitors can be funneled toward hand hygiene stations that they are more likely to engage in hand washing. Due to the layout of the building and traffic flows, this is difficult to do in the current Kansas State Fair setting.[6]

2) Hand-mouth and hand-face touching while in the animal exhibits

One of the most common behaviors among children is that of touching the mouth and face with the hands. This behavior is a high risk behavior in transmitting pathogens from the hands to the face and mouth. While this is often observed in children, adults can also exhibit this behavior. In animal contact settings such as the fair, children will often touch animals or manure covered surfaces (animal pens or bedding) and then without thinking touch their face and/ or mouth. This provides enteric disease pathogens such as *E. coli* and *Salmonella* species, a prime opportunity to complete the fecal-oral transmission route. Ruminants at the fair (cattle, sheep, and goats) can be sources of enteric disease such as *E. coli* (and the highly pathogenic *E. coli* O157:H7), without exhibiting clinical illness. [6, 7, 35] The highest risk for human disease from animals in a public setting, such as a fair, comes from enteric bacteria and parasites .[18] Research has found that not only posting educational signs about the risk of zoonotic disease at the fair but also providing fair personnel to remind visitors to avoid hand to face and mouth behaviors is effective in reducing risk. [35] The use of personnel (fair staff) to remind visitors about avoiding the above behaviors, results in better compliance than simply using only the signs for education and awareness. [6]

3) Direct contact with livestock (feeding petting zoo animals and petting livestock)

Many petting zoos encourage feeding goats and other small ruminants by providing pelleted food for visitors to give to animals. Feeding of the animals should only be allowed if contact with the animals is controlled through the use of barriers. Feed should only be provided in containers that discourage consumption by humans. Some fairs have provided animal feed in containers such as ice cream cones that led to children consuming the animal feed (an additional risk for children). Also, feeding of petting zoo animals encourages the animals to lick or nibble at visitor's hand and increases risk for zoonotic disease transmission.

4) Indirect contact with livestock such as contact with manure

Parents of small children need to be aware of this behavior as it is almost impossible to keep livestock holding pens completely free of manure despite the efforts of fair and petting zoo cleaning personnel. Small children have a tendency to place their face or mouth on the bars of livestock pens. This behavior again facilitates the fecal-oral transmission route for pathogens. Parental supervision is important in this regard and cannot be over emphasized.[36]

5) Stepping in manure or touching manure covered surfaces such as livestock panels/ fences

Children often are not aware of the presence of manure in walkways and sidewalks and may step in the manure. There also maybe intentional stepping in manure piles by some children. Children are not knowledgeable of the risk of disease from manure or livestock at a petting zoo or livestock exhibit and need adult supervision during these visits, especially children under five years of age. The signage at the State Fair concerning zoonotic disease risks and State Fair staff can be effective in reducing the risk of manure contact.[6, 35]

- 6) Eating / drinking or use of infant pacifiers while in a livestock exhibition or petting zoo

Eating and drinking should be avoided in the animal exhibit areas. Signs as well as personnel can be used to encourage food and drink to remain outside of the barns. Parents should put away infant pacifiers while the children are in the barns and take Sippy cups and food items from children while in the barn. Signs at the State Fair address this behavior of not eating or drinking at the livestock exhibits, but additional staff at the livestock exhibit barns, as mentioned in the biosecurity recommendations would greatly aid in discouraging visitors from eating or drinking at the petting zoo or livestock barns.

- 7) Lack of hand washing facilities or hand sanitizing facilities provided by management at a petting zoo or animal exhibition

The current numbers of hand washing facilities at the State Fair are mentioned above. While soap and water washing along with drying hands on paper towels is the best method of cleaning hands and reducing zoonotic risks, this is not always possible with the current building layout of the fair. [37] Often there is not plumbing to allow for water hand washing in certain areas of the buildings. Hand sanitizer stations using an alcohol based hand sanitizer are the next best solution if water hand washing is not available. These hand sanitizers need to be increased in number (this is included in the recommendations) and need to be placed at the petting zoo, the livestock barns, the rabbit and poultry barns. Signage needs to be at the hand sanitizing stations to encourage use of the units. The Kansas State Fair management (grounds and physical plant management) need to check and refill the sanitizer stations frequently with sanitizer solution. Several of these hand sanitizer units need to be placed at child height to encourage small children to use the hand sanitizers. The Animal Birthing Center at the

Kansas State Fair, which is a joint project of Kansas State University- College of Veterinary Medicine / Kansas Veterinary Medical Association, has a portable hand washing unit that is sufficient in the author's opinion, Animal Birthing Center staff needs to encourage its use by the fair visitors.

- 8) Use of baby strollers or children's wagons in petting zoos or animal exhibits which are later transported home.

Baby strollers and children's wagons in the livestock exhibit areas pose a public health risk to visitors as they can carry manure (on wheels) from the livestock premises to the home or car. They provide a way for children to be exposed to pathogens of the fair outside of the usual fair environment. [6, 7] The State Fair management should create a "stroller corral" at each end of the livestock barn areas so that strollers and wagons can be parked there while fair visitors view the livestock area. These strollers and wagons can be retrieved when the visit is finished and used at the other sites in the fair grounds. Staff would provide security for the "stroller corral" in an effort to encourage visitors to keep strollers out of the livestock areas. Staff would give each owner of a stroller a numbered token to identify the visitors' stroller. The stroller can be retrieved by the owner by presenting the token when the livestock area visit is completed by the family. This would provide additional security for families and keep strollers out of livestock areas.

Unfortunately the current layout of the livestock barns does not always allow for this "stroller corral" area and the ability to funnel people in one direction through the livestock exhibition areas. Also not allowing the strollers into the livestock barn areas may meet with resistance from fair visitors. Parents may not want to physically carry their children through the aisles of the livestock barn. This is a situation where fair staff (as mentioned above) can be of assistance in encouraging parents to leave the strollers and wagons outside of the livestock areas.

9) Consuming food and drink in the petting zoo or livestock areas

Personnel at the fair need to encourage visitors to not eat or drink in the livestock building. Signage is already in place at the fair for this and needs to be expanded in number of signs and more signs in the Spanish language. Additionally the State Fair management should prohibit non-fair events that involve food and drink (such as birthday parties, family reunions and so on, from renting livestock building for this purpose. Outbreaks of enteric disease (*E. coli* specifically) have been linked to events serving food several months following a livestock event in the same building.[1, 30] The State Fair can solve this issue by not allowing events serving food in the livestock buildings and using only non-livestock buildings for food and drink serving events.[38]

10) Consuming food or drink at the food vendors in the fair without proper hand sanitizing or hand washing.

Very few of the food vendors at the Kansas State Fair have a hand sanitizing station at their station or vehicle. This author recommends that the State Fair management encourage the vendors to have their own hand sanitizer units at the order window of the vehicle and signage to encourage its use. This would encourage visitors to carry out hand hygiene before eating at the vendor's location. This would help reduce the risk of not only zoonotic diseases from livestock exhibits but other diseases such as colds and influenza. Food vendors are licensed by the Kansas Department of Agriculture each year prior to entering the fair. Hand sanitizer units cost approximately \$80 to \$100. This cost could be placed on the vendor rather than on the State Fair by asking that all vendors to have a hand sanitizing unit.

Chapter 6

Animal to Animal Disease Transmission at the State Fair

6.1 Lack of animal isolation facilities for sick animals at the fair.

Currently there are no specific facilities for isolation of sick animals at the Kansas State Fair. Construction of these isolation facilities at a proper location needs to be a priority of the fair management. Under present conditions, if the fair veterinarian were to identify a sick animal (such as a horse with suspected EHV I infection or a ruminant with *Salmonella* infection and diarrhea), there is no location to isolate such a case. This lack of facilities has both public health and animal health implications. Along with the construction of isolation facilities, fair management needs to be able to set up separate personnel for feeding and watering the isolated animal along with separate feed sources facilities so that no cross –contact occurs with other personnel, feed or animals. The proposed biosecurity recommendations advise that temporary isolation pens be constructed in the racetrack area of the fair using portable equipment and shading materials. The State Fair employees will need training in how to use separate feeding and watering sources for the isolation pens as well as designated personnel who only attend to the isolation pens.

6.2 Current Concerns - Livestock to Livestock Disease Transmission

The State Fair brings together livestock from across Kansas and also from other states. This magnifies the opportunity for disease agents to pass from animal to animal at the fair. Although all animals entering the fair facilities having been certified as healthy by an accredited veterinarian, (health certificates required for fair entrance), there remains the possibility for disease agents to enter the fair.⁸

⁸ All animals entering the Kansas State Fair must be accompanied by a health certificate written by a licensed, accredited veterinarian. See Appendix I, Biosecurity Recommendations, Section H for details.

Small ruminants are inspected at arrival at the fair for “club lamb skin disease” (ringworm infections in the skin) by KDA officials. This zoonotic disease is highly contagious to other small ruminants, especially other sheep.

A serious and economically costly cattle disease, BVD, or bovine viral diarrhea, is a viral disease that could be spread to other cattle at the fair. This disease can have serious consequences in cattle herds due to the persistently infected (PI) individuals. These PI individuals are cattle exposed to BVD virus while in the uterus during the early part of the cow’s gestation period. The calf exposed to BVD virus in the uterus, has an immune response that recognizes the BVD virus as normal and does not build a defense response to it. At birth, the animal is persistently infected, sheds large amount of BVD virus and can be responsible for infection of many other individuals in a cattle herd. Most PI calves do not grow well and many die in the first few months of life. There is, however, a very small chance that a PI calf could find its way to the State Fair as an exhibition animal. If this were to happen, it could expose many animals at the fair to BVD virus and newly exposed animals may return home along with the BVD virus they acquired at the fair.[39] This is mostly a risk for the fetus of animals in early pregnancy.

The KDA is proposing to the State Fair management that there be an added regulation to have cattle entering the fair to be tested for BVD PI status (Bovine Viral Diarrhea Persistent Infection status) and found negative upon testing, prior to the fair. This would increase biosecurity for this disease at the fair. This new regulation will likely be introduced during the 2015 fair as a test that is strongly encouraged for all cattle being exhibited and in 2016 would be a requirement for all cattle. The cattle industry supports this testing and some state fairs and livestock shows are already making BVD-PI testing with negative results, an entrance requirement.⁹

⁹ Personal communication by email with Mr. Marshall Ernst, Western National Stock Show, Denver, Colorado, November 10, 2014.

For the current year, recommendations are included that propose that the younger cattle be housed in different sections of the livestock barn from females that are in the early stage of pregnancy. Younger cattle (market cattle and those that are terminal show animals) are at a higher risk for being PI cattle, thus need to be housed separately to reduce risk of transmission to susceptible pregnant females. A request has already been made to organizers to have mature cattle shown on different days and times from market (younger cattle). The stock show organizers should request that mature and breeding stock be shown first in the fair schedule and then the younger livestock/ market/ terminal animals be shown later in the fair schedule.

In 2009, Kansas was unfortunate to have a swine influenza case that affected a human.[25] While swine influenza affected many swine shows and farms in the US that year, the number of cases has declined in recent years.[22, 32] Swine influenza can make an appearance at fairs along with possible transfer to humans. To reduce this risk, the author recommends that swine shows and exhibitions be scheduled so that swine are on the exhibition site (fair grounds) for no more than 72 hours. Swine need to be released as soon as possible following their respective competitions so they can return to home farms. This limits the time that animals are mixed with each other and flu viruses potentially shared. The market pig show (terminal show where the market pigs are destined for harvesting) should be held following the breeding swine show (breeding swine likely will return to their home farms following competition).[40]

6.3 Future Concerns- Is the Kansas State Fair prepared for a Foreign Animal Disease Outbreak?

The Kansas Department of Agriculture seeks to prepare the animal agriculture industry in Kansas for the unlikely but devastating event of a foreign animal disease (FAD) outbreak. The most likely occurrence of a FAD and the most economically devastating would be an outbreak of foot and mouth disease in cattle and swine.[41] Studies carried out at the California State Fair indicate foot and

mouth disease (FMD) could spread quickly throughout California and to other states if an animal with foot and mouth disease were exhibited at the fair. This study also indicates that an FMD infection would likely go undetected until an animal left the fair and the resulting outbreak would spread quickly.[42] An efficient and effective animal trace back system would be imperative in this situation. Currently the Kansas State Fair collects exhibitor information as exhibitors register for various livestock competitions at the fair. Research has shown that this type of information is unlikely to be able to fully trace the animals.[43, 44] This author proposes a more robust and detailed “check-out” information form so animals can be followed post-fair. A copy of this document is found in the Appendix (see Appendix 1, Biosecurity Recommendations, section F document). This would include details of the animal’s physical destination, contact telephone numbers and planned attendance at future livestock shows. Research has also shown that most fair exhibitors are likely to practice no biosecurity or limited biosecurity at the home farm when returning animals. This increases the risk for disease that are contracted at the fair to make their way into commercial herds.[45] The author’s recommendations are to increase the awareness of this issue to exhibitors and livestock groups through education. Included in the State Fair recommendations are Iowa 4-H Club educational documents that can be used to educate exhibitors about the need for biosecurity when returning animals from the fair to the home herd.

The Kansas State Fair also needs to prepare for the possibility of a “stop movement order” from the Kansas Animal Health Commissioner if there were a Foreign Animal Disease (FAD) outbreak in another part of Kansas apart from the fairgrounds. If this were to happen during the week of the State Fair, all animals on the fairgrounds premises would be unable to move until they received permission from the Animal Health Commissioner. In the event of a FAD, it could take days before KDA or USDA personnel were able to arrive at the State Fair and determine if any swine, sheep or cattle were affected by the FAD. If all animals were considered no risk or low risk by animal health officials, then movement

permits could be issued to livestock on the fairgrounds premises to return to their home premises.

This could take several days for the process to be completed and for all animals to depart from the fairgrounds. The Kansas State Fair management would have to take responsibility for the care, feeding and sanitation of the livestock at the fair during that period. The Kansas State Fair management needs to consider this scenario and work with the State Fair veterinarian and other industry leaders to establish an emergency FAD plan for the fair that accounts for both biosecurity and animal welfare.

Chapter 7

Looking Ahead and Conclusions

7.1 Going forward

This author suggests that the way forward for improved biosecurity at the Kansas State Fair consists of several steps. The first step (and perhaps one of the most economical) would be to reduce the number of risky behaviors in the petting zoo, livestock exhibition barns and birthing center. This can be done by the use of additional fair personnel in these areas who would encourage people to avoid drinking or eating in livestock or petting zoo areas, encourage children to not step in or touch manure, and encourage good hand hygiene behaviors. These could be fair volunteers or Future Farmers of America (FFA) members who have been trained by local health department personnel.

Signage advising fair visitors concerning zoonotic disease risks and encouraging hand washing following animal area visits, needs to be increased. Hand hygiene stations (both washing with soap and water as well as hand sanitizer units) need to be provide in numbers adequate to meet the number of visitors at the fair. The State Fair management needs to continue to keep these in good working order and supplied with soap and paper towels or sanitizer solution, respectively. These measures above (which are detailed in the biosecurity recommendations in the appendix (see Appendix 1, Appendix 2, and Appendix 3) would be good initial steps to take at reducing zoonotic infection risk at the fair.

The Kansas State Fair should undertake an observational study (research program) to increase the information on the behavior and habits of fair visitors in livestock areas and the petting zoo. Funding for this could likely be secured through a grant and KSU public health students could be engaged to carry out the observational study. The Kansas Health Foundation could be a source of funding for this research. The questions and measurements to be studied are given below.

In 2005, the South Carolina State Fair undertook a surveillance project similar to what the author recommends and this could be a model for the research.[46]

The Kansas State Fair management should remove the food concession stand from the equine Expo Center building at the fairgrounds. This concession stand is within about twenty feet of the equine arena and poses a public health risk in the author's opinion due to the proximity to the horses. This food concession stand could possibly be moved outside the building so that it could be utilized in a more sanitary area.

The fair management needs to give immediate attention to establishing isolation pens or stalls so sick animals can be moved to the isolation stalls and give separate personnel for feeding and watering. Along with the isolation pens, there should be the availability of separate feed and water storage for animals in isolation stalls to prevent cross-contamination at the feed source. Personnel attending sick animals at the isolation stall need strict cleaning and disinfectant protocols to prevent disease spread.

7.2 Further research needed for state fairs and animal contact related zoonotic diseases among fair visitors.

This is a possible research project (observational study) that is detailed in a document in Appendix 4. If this research were carried out it would give data that could be used to make informed decisions to improve biosecurity at the Kansas State Fair in the future.

Conclusions

The Kansas State Fair has many benefits for Kansas agriculture and the citizens of Kansas. It is a rich tradition with many opportunities for animal agriculture and education of consumers in the state. It is also an opportunity for zoonotic disease transmission to fair visitors and exhibitors. As mentioned previously when mixing this mass gathering of people with a mass gathering of livestock, the potential for zoonotic disease transmission increases greatly. The author desires to not have headline news in Kansas (as other states have had)

where children die from enteric pathogens due to visit to the livestock barn at the fair.[27] There are many ways to reduce risk at the fair from zoonotic disease. Many of these are simple such as hand washing, avoiding manure contact in livestock barns, and washing hands before eating following a barn visit. Improved biosecurity at the fair will be a team effort of fair management and staff, public health leaders, animal health officials and responsible conduct by the public. It is hoped these recommendations will contribute to a safe and healthy state fair environment for the public and for livestock at the fair.

Chapter 8

MPH CORE COMPETENCIES

Biostatistics

The biostatistics training assisted in properly reading research papers on zoonotic diseases transmitted at fairs and petting zoos and determining the validity of the research carried out and the questions that were actually answered. This training assisted in separating what was actually factual or statistically significantly important from erroneous or incidental information gained in the various research studies.

Epidemiology

Epidemiology courses enhanced insight into what questions needed to be asked of personnel at the Kansas State Fair and stakeholders in the overall biosecurity setting at the fair. It taught this author to read and think critically and carefully in any research materials. It encouraged examination of root causes of diseases and where interventions could be made in the transmission of zoonotic disease at the fair to improve biosecurity. It assisted in proposing future research that might be carried out in the future at the Kansas State Fair.

Environmental Health Sciences

While this training was not widely used in the capstone project, it did assist in consideration of chemicals, particularly disinfectants, which are used in the cleaning and disinfection of animal pens at the fair. There were concerns from fair visitors about “smells” of cleaners (particularly chlorine bleach) when they were used in cleaning facilities at the fair. Also the biodegradability of various disinfectants and their effect in a city sewer system had to be taken into

consideration. The large amount of manure and waste produced at the Kansas State Fair were also an environmental issue as was how to dispose of any livestock that might die at the fair.

Health Services Administration

The ability to see the human health system as a whole entity was something I carried away from health services administration. This was valuable in considering what happens to fair visitors when they fall ill due to a disease they contracted at the petting zoo or at a state fair. How the American health system (and particularly the Kansas health system) would respond in the case of animal-associated illness was useful in this project. This training provided an understanding of the financial burden of a given disease and how that is borne by the citizens of a state or nation. It taught this author the importance, in financial terms, of prevention zoonotic diseases at the fair rather than treating the consequences following a disease outbreak. The economics of disease prevention was helpful in considering what could be done in zoonotic disease prevention at the Kansas State Fair.

Social and Behavioral Sciences

The behavior of people when attending an animal exhibition or petting zoo is extremely important in the transmission of disease. This education provided a good foundation for how behavior can be altered so that disease transmission can be decreased. It also provided understanding of the complexity of human behavior and its interrelationship with health.

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APPENDIX

APPENDIX 1

Biosecurity recommendations for KS state fair-Gold level

Kansas Dept. of Agriculture

Division of Animal Health

Manhattan, Kansas

Last update Feb 27, 2015

Kansas State Fair Biosecurity Plan Guidance

Recommendations for the Kansas State Fair Biosecurity-- Draft III—
Dec 4, 2014 (high level of biosecurity, “Gold Standard”-this would
be the best biosecurity situation possible)

Introduction

The Kansas state Fair is the largest organized mass gathering in Kansas with an attendance of more than 350,000 people in 2014. With a history of more than a century, the fair is an opportunity for people to enjoy the “fair experience”, as well as be educated about Kansas agriculture. For many FFA and 4-H exhibitors this is an important livestock exhibition event. It is a chance for people to “see where their food comes from” and to appreciate the human-animal bond seen in animal agriculture. Keeping fair visitors safe to enjoy the fair and keeping livestock healthy while being exhibited is the goal of this biosecurity recommendation document. We have sought to balance keeping people safe from zoonotic diseases (transferred from animal

to people) while not making demands on the fair patrons such that we discourage them from attending the fair, or livestock exhibitions in particular.

The objective of this outline is to provide Kansas State Fair event managers and staff with guidance to address the event biosecurity risks and develop an infectious disease control plan for use in responding to an infectious disease outbreak at the venue. Each event and venue is unique; therefore, this toolkit provides guidance for the assessment and development of event specific plans to address the identified disease risks of a particular event and venue.

Biosecurity is a set of preventative measures designed to reduce the risks for introduction and transmission of an infectious disease agent. Infectious disease pathogens may be brought to and spread at an event premises by livestock, people, vehicles, equipment, insect, ticks, birds, wildlife, feed, waste and water. Implementation of an event biosecurity plan will minimize or prevent the movement of diseases on and off the premises. Failure to implement, or to comply with, biosecurity measures can lead to the increased likelihood of on-site disease agent introduction and transmission. Successful implementation of the biosecurity plan relies on event staff, participants and spectators understanding and complying with the policies and procedures of the plan. In the event of an animal disease outbreak, more stringent practices will be required to control disease spread.

Event Biosecurity Assessment (consideration of physical layout and traffic of the fairgrounds)

(Note that recommendations in blue text are activities and plans that the State Fair management would need to carry out on their own with the information they have on fair premises, facilities and capabilities.)

1. Facility Layout

a. Stall/Pen Arrangements

Include facility maps. Highlight areas of livestock concentrations, including exhibition and attraction animals (such as petting zoo, pig races and bison

area). Outline traffic patterns of both livestock and trailers into and out of fairgrounds as well as within the grounds itself. Include specifics for each type of species and barn

- i. Number of barn or buildings
- ii. Size (dimensions, number of stalls, etc.)
- iii. Construction

Include type of barn construction (metal walls, treated wood walls untreated wood walls, bars, half walls, etc.) flooring, and ventilation. Also include type of stall/pen/tie-out construction.

- iv. Location-(in relation to the overall event layout)

b. Isolation Area

See Comments in Infectious Disease Control plan section for Isolation area considerations.

- i. Location of isolation area

Preference for isolation is a designated area that can function on an “as needed” basis in a barn away from exhibition area. If capacity is exceeded by the number of animals involved or a designated area is not available, isolation can be established at the home pen/stall in some circumstances.

- ii. Suitability
- iii. Consider Access Limitations (if animal were to die in isolation, would there be access for trucks to enter)
- iv. Cleaning & Disinfection (C&D) capabilities (water supply, electrical power supply for lights and pumps, controlled drainage of waste water into a sanitary sewer or collection area)

c. Communal Wash Areas for livestock

Develop map of wash areas, what type of construction, presence of hot water, accessibility for equipment C&D

- i. Number of tie out areas
- ii. Construction
- iii. Cleaning & Disinfection capabilities

- iv. Location in relation to livestock stalls
- v. Consider restriction of exhibitors / owners only to the washing and tie out areas in an effort to control visitor access to these areas. These are high risk areas for fair visitors.

Bicycle racks (portable types) can be used to restrict visitors' access to washing areas.

d. Exercise/Tie Out Areas

- i. Size
- ii. Location
- iii. Animal-to-Animal Contact- can animals touch each other? *It is best if they cannot touch each other.*
- iv. Sanitation (manure removed frequently)

e. Parking Areas

Include outline of both trailer/truck and public parking arrangements (how many truck /trailers can be parked, access to main roads, etc.) Develop a contingency plan if a livestock disease incidence requires C&D of vehicles. Consider changes of vehicle ingress and egress protocols, isolation of trailers, etc.

- i. Location
- ii. Separation
- iii. Signage

Have a plan for how signage and vehicle barriers can be established for a quick turnaround.

- iv. Security and security personnel

Develop a plan for increased security (personnel on foot and on horse-back) for parking and changes in traffic patterns.

1. Entrance to fair grounds for exhibitors / animal owners:

Animal Entry Requirements

A summary of the Kansas State Fair animal health regulations for animal entering the fairgrounds is found in Appendix 1. See Section H of this document for 2014 Livestock Health Requirements for Kansas State Fair

In addition to these requirements:

a) All livestock exhibitors and owners need to receive and acknowledge (by signature), receipt of the following statements at the time of off-loading animals (or before) at the fair:

“All horses and other livestock that enter the Kansas State Fairgrounds whether entered for exhibit, competition or otherwise, are subject to examination by event officials and /or State Animal health officials to determine whether animals are or have been exposed/ infected or are likely to be infected with a contagious or infectious disease.

“If after such examination, there is reason to believe that an animal’s health condition places other animals at risk, event officials may isolate such an animal, and other animals that may have been infected / exposed.

“All participants agree to fully cooperate with event officials and abide by their decisions/instructions. Failing to comply shall be grounds for immediate expulsion of the participant from the grounds and potential action by organization, local / state or federal animal health officials.”

Exhibitors need to read and sign a copy of this statement to acknowledge agreement with it as a part of participation in the fair competitions.

This would allow exhibitors to know what the expectation of State Fair personnel and animal health officials are in dealing with an animal disease event.

This statement gives Animal Health authorities and State Fair officials more control over inspection and movement of livestock.

Those exhibitors or owners not willing to comply with this statement should be turned away from the fair and animals not accepted in the event. This statement is adapted from an equine event biosecurity statement and may need to be modified for the state fair.

See Section C of this document for details.

2. Check out procedures for all livestock

- a) Each exhibitor needs to fill out a “check out” form upon leaving the fairgrounds. (A draft of this “check-out” document is attached in Section F of this document.)

This would give information such as:

- date of entrance of the livestock into the fair,
- building and pen number where animal(s) was housed while at the fair, date of exit from the fair,
- destination of the livestock (i.e. returning to farm, to slaughter, or further competition),
- contact phone number and address of exhibitor.
- Signature of agent or exhibitor

- b) This information could be used for trace back data if the need arises. The document can be left with the State Fair gate staff upon departure from the fair. Gate staff can forward this form to fair administration who can forward to KDA if needed for trace back. For animals or herds in the *USA HERDS* system, the GPS coordinates could be located.
- c) Give exhibitors leaving the fairgrounds a written list of recommendations for post-fair quarantine when returning to the farm or ranch of origin including:

- i) Suggested recommendations: all swine and swine pens mates should not be exhibited for at least 7 days following the fair exhibition to reduce the spread of swine influenza (Swine exhibition biosecurity recommendations; *USAHA* website)

 - II) Recommend that all animals returning to the farm or ranch of origin should be quarantined for at least 21 days to protect the other animals on the farm from any possible infection acquired. Owners / exhibitors should daily examine their animals which returned from the fair during this quarantine time for signs of disease and notify their veterinarian of any concerns.

 - III) Owners/ exhibitors who have been at the fairgrounds need to change clothing and shoes before entering the home livestock areas. Boots, shoes and clothing should be washed and dried thoroughly before use on the home ranch or farm again.
1. Report Protocol for Suspicion of Sickness should be developed by the fair:

Contact lists and notification protocols need to be developed by the Kansas State Fair.

- a. Event policy requiring that any suspicion of illness be immediately reported to a designated event official. The official should have the authority and responsibility to immediately take necessary actions, such as enactment of an isolation plan, and/or public announcements.

Develop an outline indicating the designation of authority to make these decisions.

2. Isolation Protocol for Sick Livestock

- a. Restrict isolation area access to the minimum number of individuals needed to care for the animals.

Kansas State Fair needs to develop a team that would be responsible for the isolation area. Have training established for proper protocols. The state fair veterinarian needs to be a part of this team.

3. Equipment Cleaning and Disinfection

Identify accessibility, location, sources of equipment and supplies. Develop inventory list. Consider location of drainage of waste water and sewer concerns if any.

Animal contact areas and facility design

3. **Public health of visitors to the fair;**

Increase the number of hand sanitizing stations throughout the fair. If possible, add more of these in the following areas:

- a) Food vendor areas –one hand sanitizer station for each **2 food vendors** with accompanying signage to encourage visitors to sanitize their hands before eating. Suggestion: Request food vendors to supply their own hand sanitizer unit for their business as a means of reducing the financial burden on the Fair to purchase these.
- b) Entrance/ exits of all fair gates with signage to encourage visitors to sanitize their hands prior to departing the fairgrounds campus and to advise visitors of potential for disease spread from animals to humans (raise awareness of the risk of zoonotic diseases).

- c) Additional hand sanitizers at livestock unloading areas with signage to encourage owners and exhibitors to clean their hands after unloading the animals.
- d) Organize hand hygiene stations (either hand sanitizers or hand washing), such that children ages 3 to 5 years, have some of these stations at their height (lower in height) so as to encourage hand hygiene among this high risk group. Children (especially children under the age of 5 years) are usually at a higher risk than adults to fall ill from zoonotic disease due to their behaviors at the fair.
- e) Consider using hand sanitizing that minimizes the need for hand contact. These stations that would have paddles rather than knobs to turn off / on sanitizer to reduce hand contact.
- f) There are currently **32** of these hand sanitizing stations used/ owned by the Kansas State Fair (per communication with State Fair general manager). A minimum of about **88** hand sanitizing stations are needed for the animal exhibition buildings and petting zoo areas. So an additional 56 hand sanitizing units need to be purchased and placed into use in the animal exhibition areas and the petting zoo areas. These additional unit numbers are based on visitor numbers and time spent in the animal exhibition areas and petting zoo. (There are other hand washing areas in wash rooms/ bath rooms that can also be used to carry out hand hygiene.). The commercial sponsors of the petting zoo can be requested to purchase these for the petting zoo visitors to reduce financial burden to the fair. Also consider if there are community grants that could pay for purchase of additional hand sanitizer units. This would assist the State Fair in purchasing more of the units.

(See note below on calculation of hand sanitizers and hand washing versus sanitizing in Section B of this document)

- g) Continue to post the information on-line (as is currently done by the Fair) on livestock viewing, hand washing and sanitation advice given on the website at “Planning Your Day at the Fair”. This is good advice to protect fair visitors from zoonotic disease. See Section G of this document.

Personnel

- 4. **Additional personnel** in the livestock barns, petting zoo, exits of the fair grounds and animal birthing center to encourage visitors and exhibitors to wash or sanitize their hands following visits to the exhibitions. (Number of personnel will depend on day of fair and time of day.)
 - a) These individuals should be personnel working under the state fair administration that encourage visitors to use the hand sanitizers or wash their hands using soap and water. These personnel should be placed at the livestock barns, petting zoo, birthing centers and if possible in the food vendor areas.(See Section D in this document.)

These could be fair volunteers, 4-H club exhibitors or FFA exhibitors who have time to do this needed task. These personnel need to have some minimal training in encouraging visitors to sanitize their hands following visits to the above building and before they eat food from the food vendors.

- a) These personnel need to be identifiable by proper State Fair IDs / clothing / vests. They are especially needed during high visitor traffic times in the livestock areas. Weekends would be a time where there are many more visitors and thus more volunteers

needed. If possible, add Spanish speaking volunteers to this group of personnel.

b) The local health department in Hutchinson (Reno County Health Department) could be of help in training these personnel in proper hand washing or hand sanitizer use.

5. **Additional signage** (available through *the Center For Disease Control-Atlanta*) is needed in livestock exhibition areas, petting zoo areas, exits and entrances to fair grounds to encourage hand hygiene and to communicate risks associated with zoonotic diseases

b) In livestock building, more signs are needed to discourage people from allowing children to sit in the stalls or floors where they can easily contact manure. Strollers, Sippy cups and pacifiers use in the livestock barns need to be prohibited. (Effectiveness of this is unknown, but the message should be communicated. A balance between communicating the message of zoonotic diseases risks and encouraging families with children to visit the livestock barns / exhibits needs to be found.)(See Section A in this document.)

c) Signage indicating not to eat or drink while visiting the livestock exhibition is needed in English and Spanish. Signage needs to be approximately 12 inches by 18 inches in size and using bold colors for lettering.

d) More of these signs need to be in Spanish language for the Spanish speaking portion of the visitors to the fair. Approximately 11 % of Kansans are of Hispanic origin (Kansas demographic figures from website; <http://quickfacts.census.gov/qfd/states/20000.html>) and so adding more signs in Spanish could help this portion of visitors to be more aware of hand hygiene and zoonotic disease risks.

- e) Communicate to exhibitors and livestock owners that personal food items such as snacks and drinks should not be stored in the barns near livestock. Encourage good hand hygiene among exhibitors (washing hands after handling animals and before eating).
- f) Communicate to exhibitors and livestock owners that exhibitors should not be sleeping or eating in the livestock exhibit areas.

Cooperation with partners and other agencies

1. Encourage the **Reno County Health Department** to be more actively involved at the Kansas State Fair. The health department can assist in training fair personnel in the prevention of zoonotic diseases. Personnel can be trained to supervise visitors in carrying out hand washing following visits to the petting zoos and exhibition areas. Also they can train fair workers to discourage eating and drinking in the animal exhibition areas and verbally encouraging parents not to allow their children to sit in the animal exhibit areas. The Reno County Health Department can also advise the Kansas State Fair about influenza risk (swine or avian flu) that maybe circulating within Kansas at the time of the fair.
2. Encourage **4-H leaders** (county level) and **FFA advisors** (county level) to train youth who will be exhibiting animals about good biosecurity before exhibition time at the Kanas State Fair. The Iowa State fair has a good 4-H biosecurity training piece that could be adapted for Kansas. (See Section 3 in this document.)

Other Animal Health Recommendations:

- A) Require BVD-PI testing for cattle--Discuss the *possibility* of requiring cattle entering the fair to be tested for BVD virus and show negative test to enter fair. This should be a BVD-PI test for “persistently infected” cattle. The animals that are exhibited should be tested prior to the fair and the results recorded by the veterinarian on the Certificate of Veterinary Inspection (CVI). Pooled testing results can be accepted if the animal identification can be verified.
- B) Request fair officials to house or allocate pens for cattle such that the mature cattle and breeding cattle are in one area of the fair separate from the market and/or terminal cattle. This would help in reducing BVD transmission from younger animals (the higher risk group) to mature cattle (lower risk group). Also request organizers to have mature cattle shown on different days and times from market (younger cattle). The organizers should request that mature and breeding stock be shown first in the fair schedule and then the younger livestock/ market/ terminal animals be shown later in the fair schedule. This will reduce contact between these groups and thus lessen BVD transmission risk.
- b) No dogs are allowed on the fair ground during the State Fair, except for service dogs under the Americans with Disability Act.
- c) All animal entering the Kansas State fairgrounds need to have a CVI (certificate of veterinary inspection). The CVI must:
- i) Be issued by an accredited licensed veterinarian
 - ii) Show the name and physical address of the owner/ exhibitor
 - iii) Show all tests required and vaccinations given
 - iv) Each Swine CVI must contain the following statement: *“To the best of my knowledge, swine represented on this certificate have not been exposed to or been infected with Porcine Epidemic Diarrhea (PEDv) or originated from*

premises known to be infected by PEDv in the last thirty (30) days.”

d) Swine Exhibits and Swine influenza special concerns

In previous years in the United States (US), there has been the transmission of swine influenza (also known as swine flu or pig flu) from pigs to people at fairs and swine exhibitions in the US. Although the risk is small that this might occur at the Kansas state Fair, there needs to be biosecurity measures taken to minimize the risk and educate fair visitors about the risk of swine flu.

a) Scheduling of swine events--The swine shows and exhibition need to be scheduled so that swine are on the exhibition site (fair grounds) for no more than 72 hours. Swine need to be released as soon as possible following their respective competitions so they can return to home farms. This limits the time that animals are mixed with each other and flu viruses potentially shared. The market pig show (terminal show where the market pigs are destined for harvesting) needs to be held following the breeding swine show (breeding swine would be animals that will return to their home farms following competition).

b) Have an isolation pen(s) for any swine that are recognized as sick such that they can be removed from the other animals. Establish a protocol for immediate removal of sick swine from the fair under the supervision of the fair veterinarian.

c) Have hand washing stations (as mentioned above) at the all exits of the swine exhibition such that visitors can wash hands or use hand sanitizers. Place signs that encourage hand washing or the use of hand sanitizers following visiting the swine exhibits.

- d) Signs and notices from the Centers for Disease Control and Prevention (CDC), concerning the risk of swine flu to high risk individuals (children under the age of five, people with asthma and other respiratory conditions, people over the age of sixty-five) should be posted at the all entrances to the swine exhibits. Education of the public who are attending the swine exhibits is very helpful in raising awareness about swine flu and preventing behaviors that could lead to swine flu infections.
- e) FFA and 4-H groups need to be educated about swine flu from their leaders. Exhibitors need to practice good biosecurity when returning home with their pigs (changing of clothes and boots used at the fair as well as hand washing). Quarantine of individuals animals that have been exhibited at the fair needs to be encouraged by swine competition event organizers.
- f) In years where there are nation-wide swine flu alerts, consider recommending that swine coming to the state fair swine competitions be vaccinated for Swine Influenza Virus (two doses of vaccine approximately three weeks apart). This swine influenza virus vaccination should be recorded on the CVI issued by the inspecting veterinarian.

e) Physical plan concerns / Changes in construction

- a) **Isolation stalls** need to be designated and prepared for use with separate water, feeding and personnel. This needs to be cordoned off so that other exhibitors, fair personnel or visitors cannot access the isolation areas. Preferable this would be in a separate building from exhibition animals. The isolation stalls should be designated in areas so that sick animals do not have to be housed with other animals. Proper cleaning and

disinfection of the stall where the sick animal was housed needs to be carried out. Adjacent stalls of animals that were isolated need to be checked daily by the state fair veterinarian.

- b) Cleaning and sanitation**-Following the close of the fair each September, all facilities, stalls, arenas, show areas, and loading/unloading areas need to be cleaned and disinfected thoroughly. All bedding and manure needs to be hauled from the fair grounds to land fill for disposal. Adequate control for rodents needs to be instituted. The poultry and rabbit barns need to be secured such that wild birds (that might harbor disease) do not overwinter in the exhibit buildings. The portable horse stalls that are rented each year for the Kansas State Fair need to be cleaned and disinfected thoroughly each year before livestock enter the stalls.
- c)** For non-fair events such as weddings, family reunions and other social gatherings where food and drinks are served, the fair board should only rent out buildings where **NO livestock or poultry** have been kept during exhibitions or fair competitions. This will reduce the risk of transferring animal diseases (that could persist in dust or debris) to humans by way of food.
- d)** The food concession stand in the horse barn / riding arena known as the Expo Center needs to be moved outside the Expo Center for food safety concerns. This concession stand is located within about 20 feet of the riding arena. Dust, manure and other foreign objects (straw) containing bacteria could present a health hazard with food items being prepared and served a few feet from the arena.

e) Consider ways to keep visitors away from animal washing areas (especially during washing time) in order to keep visitors from getting splashed with water and/or manure. Barn staff members need to be trained to manage restricted areas from public access. Portable bicycle racks could be used to restrict visitor movements.

f) Livestock event infectious disease outbreak- being prepared for the unlikely but high impact disease event

Kansas State Fair needs to be prepared for the unlikely event of a “stop movement order” from the Kansas, Animal Health Commissioner in the event of a foreign animal disease threat. If this animal health disease event were to occur, livestock at the Kansas State Fair would temporarily not be allowed to travel back to their farms/ ranches of origin. They *could be* held in the Kansas State Fair facilities for several days until the livestock could be examined by Department of Agriculture teams and permission from the State Animal Health Commissioner given for movement of livestock to home farms/ ranches. The state fair staff and administration would be responsible for feeding housing these animals for the duration of the “stop movement order”.

NOTE—legal implications and finances for this is covered under a similar situation for livestock markets in the event of a “stop movement” order.

A livestock event infectious disease control plan requires a mechanism to assess the exposure risk of all livestock on the property. Knowledge of the location and activities of the sick animals that occurred before the onset of the clinical signs is essential for determining the exposure risks. The plan is a system of stricter and enhanced biosecurity measures which may include:

1. Stop Movement Orders- Temporary movement restrictions may be necessary until assessment of the situation is complete after which permission for allowing certain movement to home premises may occur. The plan should outline procedures to promptly secure the event venue.

The Kansas State Fair needs to establish protocols for security enhancement, gate closures, gate and parking security, Cleaning and Disinfectant needs, isolation area restrictions, and changes in traffic patterns in the event of a stop movement order.

2. Control and Track Livestock Movement- Continue with the complete checkout process as outlined above.
3. Monitoring of Livestock Health – During an infectious disease outbreak, continuous health monitoring of all potentially affected and susceptible livestock on the premises should be instituted. Immediate identification and isolation of sick stock is critical. With guidance and support of the event veterinarian, trigger points should be established to evaluate the livestock to determine the presence of clinical signs. Monitoring can be accomplished by;
 - a. Periodic walk-through of stable/pens by the veterinarian observing for any sign of clinical disease by designated officials.
 - b. Participant notification of monitoring and reporting requirements.
 - c. Monitoring and keeping a log of the temperature of livestock.

This will be initiated and established with the fair veterinarian. The exact protocols will be determined by the disease of concern.

4. Initiate enhanced biosecurity measures that include discontinue sharing equipment and instigate strict proper cleaning and disinfection of all equipment and premises. Implement processes to inform exhibitors of the 4-step cleaning and disinfection (C&D) protocol and request their help in cleaning and disinfection of their equipment. (Four steps- cleaning, washing, disinfecting, drying)

The Kansas State Fair needs to consider the need for a large supply of disinfectant and cleaning tools on short notice.

The Kansas State Fair should develop a plan prior to an outbreak. Additional things to consider are additional hand washing/sanitization stations, footbath placement, power-washer needs, supplies of disinfectant chemicals, water supply and electrical power.

5. Restrict direct and indirect livestock exposure such as prohibiting access to communal areas. For example this could include practice and exercise pens, wash areas, tie-out areas and exhibition arenas.
6. Restrict human-to-livestock contact: During an infectious disease outbreak, only the owner/agent or designated personnel should handle livestock on the event grounds. Access by visitors should be restricted and they should be informed of proper biosecurity measures if they are returning to outside livestock operations. (The fair visitors and /or exhibitors would need to be informed about changing clothing, shoes, showering, nose blowing and so forth, before returning to outside livestock operations.)
7. Increase adequate biosecurity signage: Communication of the enhanced infectious disease plan and the extra measures being implemented is critical and can be enhanced with clear signage and messaging to all on the event grounds.

Event organizers should document in advance where this signage will be posted. Signage needs to be in English and Spanish

SECTIONS of BIOSECURITY RECOMMENDATIONS (For Additional Information) Gold Level

Section A.

JAVMA Vol 224 No 7 April 2004 pg. 1105-1109

Risk factors associated with animal exhibits identified:

Biting nails

Sucking thumbs

Eating or purchasing food near animal exhibits

Contact with animals or their environment

Recommendations commonly made for reducing risks:

Placement of appropriate signs

Education of visitors

Avoiding contact with sick animals

Providing adequate hand washing facilities

Ensuring adequate supervision of children

Providing separate eating and animal contact area

Establishing animal contact guidelines

Providing for appropriate cleaning and disinfection of the animal holding environment and proper manure disposal

Section B.

Note on Hand hygiene: Hand washing has been shown to more effective than hand sanitizers as the most effective way to remove organic material. Hand sanitizers should be used only if hand washing facilities are not available, according to the above agencies. Yamamoto, et al. 2005-has shown that using paper towel to dry hand after washing is more effective than hot air dryers in removing

bacteria from hands. The physical problem at the state fair maybe that there are not places that have plumbing, water and hand washing sinks for the visitors due to the location of the petting zoo and the food vendors being in temporary facilities.

The formula for estimating the number of hand sanitizers needed is:

of people x 1 minute (average time for hand washing) / number of minutes spent in exhibit area = # hand washing basins

This formula used an estimate of 20 minutes for a visit in the livestock exhibition areas and the number of people was set at 100.

Other researchers (Davis, M.A. et al. 2006) have concluded similar results in using either hand washing with soap and water or ethanol-based hand hygiene preparations in reducing bacterial and coliform counts among livestock exhibitors.

Section C.

These statements are taken from “Biosecurity Toolkit for Equine Events”, February, 2012, by Dr. Katie Flynn, California Dept. of Food and Agriculture, Equine Medication Monitoring Program, page 19, Sacramento Ca; kflynn@cdfa.ca.gov

A similar statement can be authored specifically for Kansas.

D. Research has shown that active rather than passive interventions are more effective for increasing hand washing compliance (Anderson and Weese, 2012)

(Note: Doug Powell, former KSU food safety professor, and others have studies to indicate that having event staff or personnel in the animal contact areas to verbally encourage hand hygiene (hand washing or hand sanitizing) increases the proportion of visitors who carry out hand hygiene. Dr. Powell’s study was on petting zoos but can be extrapolated to the state fair. See

Powell, et al. "Observation of risk behaviors at Kansas and Missouri petting zoos", 2010.

Section E.

Iowa 4-H Biosecurity for exhibitors' document

(Used with the permission of Iowa State University Extension Service)

Bio- Security and Fairs

What You Need to Know

Fairs create an environment that results in the intermingling of people from different backgrounds as well as animals from various locations and different species. Many of these situations are counter to what 4-H producers have been taught in herd and flock health management.

While fairs provide an opportunity for youth to participate in animal oriented group activities, they also represent a potential threat to the health of any livestock herd or flock and the financial well-being of an industry.

To protect the health and wellbeing of all animals and the exhibitors, the following points should be followed:

- Meet or exceed all health requirements for all animals as established by the state veterinarian.
- Bio-security is one of the reasons for health inspections. Have your animals checked by a veterinarian regularly and follow a your veterinarians suggested health program for exhibited animals
- Booster vaccinations should be given as recommended by your veterinarians prior to exhibiting animals
- Request a health certificate
- Leave unhealthy or contagious animals at home. Public settings such as fairs are not the place for animals with ringworm, club lamb fungus, warts, eye infections, draining wounds, respiratory diseases and other contagious diseases.
- Provide adequate feed and water during exhibition.
- Keep housing facility clean of manure and waste bedding.
- Make sure animals have adequate space and proper ventilation.
- Use your own barn cleaning equipment such as pitch forks, shovels, etc. and keep them clean. This goes for show equipment such as clippers and combs as well. Avoid sharing equipment with other exhibitors.

- Practice good personal hygiene. Disinfect boots and equipment often, as well as wash your hands frequently.
- Change or wash clothes and shoes worn at the fair before returning home to work with other animals.
- Be cautious as to who has contact with your animals. Discourage fair visitors from petting or feeding your animals. If so, encourage them to wash their hands.
- Be on guard for visitors that might intend harm to exhibited animals and report suspicious people or activities to the show security.

After the Fair

If you take your show animals off the farm and expose them to other animals, there is also the possibility of spreading germs or diseases.

After the fair, when you return your animals to your farm, strictly isolating exhibited animals from other animals for at least two weeks.

Thoroughly clean to remove all soil and manure from your equipment and trailer, rinse to remove soap, then disinfect. Exhibiting livestock is an enjoyable and educational experience for most young people. Following a few simple guidelines will help keep you and your livestock healthy during and following the show season.

IOWA STATE UNIVERSITY
University Extension

Section F)

Draft of "Check-Out Form" for animals leaving the fair grounds.

DRAFT OF "CHECK-OUT FORM" FOR LIVESTOCK LEAVING KANSAS STATE FAIR

Name of exhibitor or owner _____

Type of livestock:

Beef Cattle ___ Dairy cattle ___ Swine ___ Poultry ___ Goats ___ Sheep ___

Equine ___ Other (identify or name) ___

Date and time of **entrance** of the animal(s) into the fair ground _____

Building and pen number where animal(s) was housed while at the fair _____

Date of time of **exit** and from the fair _____

Destination of the livestock after leaving the fair (i.e. returning to farm, to slaughter, or further competition) _____

Exhibitor's contact phone number and address (must be street address and not post office box address)

Signature of agent or exhibitor _____

For state fair gate attendant only

Time of departure _____ Gate of departure _____

Initials of gate worker _____

Keep this form for State Fair Administration for trace back program

Section G

From Kansas State fair website—“Planning your day at the Fair”

<https://kansasstatefair.com/page.php?id=398>

(Reprinted with the permission of the Kansas State Fair)

Animal Safety

Animals can be great fun, but it's important to know how to be safe when you're with them. Animals and humans view their surroundings very differently. Humans see in color, while livestock in shades of grey and livestock generally have poor depth perception. Most animals can see wide angles around them, but have a blind spot (area they cannot see) near the hindquarters. Horses also have a blind

spot directly in front of them. When approaching or around livestock, be aware of these blind spots – movement in these areas should be avoided as it makes animals uneasy and nervous. Animals also have extremely sensitive hearing – loud and high-frequency sounds can hurt their ears.

When around animals:

- Ask for permission to approach or touch an animal that is not a part of a petting zoo.
- Be calm and don't run around the animals
- Avoid making loud noises
- Approach large animals at their shoulder
- Be cautious about petting any new-born animals.

It is important to remember that animals sometimes carry germs that are harmful to us and can make us sick. Washing your hands is the best way to stop germs from spreading. Think about all of the things that you touched today - from the telephone, to a door handle to the animals in the petting zoo. Whatever you did today, you came into contact with germs. It is especially important to wash your hands after petting or being around animals because they not only carry germs that can be harmful to us but we can also come into contact with Zoonotic Diseases. Zoonotic Diseases are those that can be transferred from animals to humans. Some of these germs and diseases may not be harmful for the animals but can be harmful to humans. It's easy for a germ on your hand to end up in your mouth. Think about how many times your hands touch your face and how many different foods you eat with your hands. You can't wear rubber gloves all day long, but you can wash your hands so those germs don't get a chance to make you or someone else sick. When germs go down the drain, they can't make anyone sick.

- Always wash your hands after petting animals or touching the animal enclosure, especially before eating and drinking.
- Running water and soap are best. Use whatever soap you like. Some soaps come in cool shapes and colors or smell nice, but whatever kind that gets you scrubbing is the kind you should use. Antibacterial soaps are OK to use, but

regular soap works fine. Work up some lather on both sides of your hands, your wrists, and between your fingers. Don't forget to wash around your nails. This is one place germs like to hide. Wash for about 10 to 15 seconds - about how long it takes to sing "Happy Birthday." (Sing it quickly two times or just once if you go nice and slow.)

- Use hand gels if running water and soap are not available. You still need to rub your hands together when using the hand gel instead of water and soap.
- **Do not share your food with animals.**
- Never put your hands or objects (for example: pacifiers) in their mouth while interacting with animals.

Now that you've covered safety on the way to the fair, you can enjoy this exciting animal adventure!

MORE LINKS

Section H

General Rules - 2014 Livestock Requirements **2014 REQUIREMENTS FOR KANSAS STATE FAIR**

LIVESTOCK HEALTH PAPER CHECK-IN:

1. **All livestock** must be inspected by a veterinarian and have certificates of veterinary inspection (CVIs/ health papers) issued prior to arrival at the Fairgrounds.
2. CVIs must be checked and stamped by officials of the Kansas Department of Agriculture Division of Animal Health (KDAH) at the livestock check-in area before entering the Fairgrounds.

3. The livestock check-in will be located east of the Fairgrounds at the Fairgrounds Water Park. Enter parking lot from Severance Street between 17th Ave. and 23rd Ave. Access Severance Street from 17th Avenue.
4. Daily check-in hours will be 6:00am to 10:00pm. Exhibitors should plan to arrive during these hours. If arrival is going to be delayed past 10:00 pm due to circumstances beyond exhibitor's control, please call the Highway Patrol at 620-669-3627.
5. After CVIs are inspected and approved, the officials will stamp CVIs, which will allow entry onto the Fairgrounds.
6. The KDAH reserves the right to inspect or test any animals on the Fairgrounds if necessary.

LIVESTOCK ORIGINATING IN KANSAS

GENERAL REQUIREMENTS

1. **All animals must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch for swine. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. Animals with lesions of ringworm, warts or infested with mange as determined by officials of the KDAH or exhibition staff will not be permitted to exhibit.
4. All required tests must be conducted by a state-approved laboratory.
5. All animals are subject to examination by officials of the KDAH or those designated by the exhibition staff, and shall be free of clinical signs of infectious or contagious disease.

CATTLE AND BISON

1. **All cattle and bison must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, or breed registration tattoo or tag. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. Kansas is brucellosis and tuberculosis free; no tests are required.

SWINE

1. **All swine must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. No testing for Pseudorabies or brucellosis is required for swine originating in Kansas, as Kansas is at stage V in the National Pseudorabies Program and swine brucellosis free.

SHEEP

1. **All sheep must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All sheep must be identified with an official USDA premises ID tag. Lambs under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
3. All sheep must be free of any signs of sore mouth.

4. All sheep must be free of signs of active fungal (ringworm) infection, including club lamb fungus. Sheep may be examined by KDAH officials.

GOATS

1. **All goats must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All goats must be identified with a registered tattoo or an official USDA premises ID tag. Goats identified with registration tattoos must have registration papers for these animals available for inspection. Kids under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
3. All goats must be free of signs of active fungal (ringworm) infection, including sore mouth.

HORSES

1. **All horses must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Identification must be individually listed on the CVI.**
2. Evidence of a negative equine infectious anemia (EIA/ Coggins) test conducted within 12 months before exhibition must accompany the CVI. Test results must be shown on a VS 10-11 form (copies will not be accepted unless verified *in writing* by testing veterinarian). Foals, six months of age and younger, accompanying their EIA-negative dams, are exempt from EIA test requirements.
3. A valid Equine Passport may be used in lieu of a CVI. If an equine passport is used, a negative EIA test within six months is required.

POULTRY

All poultry, except waterfowl, must show proof that they are pullorum-typhoid clean by one of the following methods:

1. Originate from a U.S. Pullorum -Typhoid clean flock as evidenced by an official VS Form 9-3, certifying all birds in the flock over 4 months of age have had a negative test for pullorum -typhoid within the past year.

2. Present evidence that the entries were purchased from a U.S. Pullorum-Typhoid clean source and have been the only poultry on the premises.
3. Present an official VS 9-2 Form, signed by an official testing agent, showing the entries have had a negative pullorum-typhoid test within the proceeding 90 days.
4. If an official tester is on site, entries may be tested at the time of entry. A VS 9-2 Form must be completed for each entry. If any birds in an entry test positive for pullorum-typhoid, the entire entry, as well as all other birds from the same premises, will be refused.

LIVESTOCK ORIGINATING FROM OTHER STATES

GENERAL REQUIREMENTS

1. All livestock entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.
2. **All animals must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
3. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch for swine. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
4. Animals with lesions of ringworm, warts or infested with mange as determined by officials of the KDAH or exhibition staff will not be permitted to exhibit.
5. All required tests must be conducted by a state-approved laboratory.
6. All animals are subject to examination by officials of the KDAH or those designated by the exhibition staff, and shall be free of clinical signs of infectious or contagious disease.

CATTLE AND BISON

1. **All cattle and bison must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, or breed registration tattoo or tag. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. All cattle and bison entering Kansas should follow all KDAH import requirements. The import requirement list is available at [www. agriculture.ks.gov/divisions-programs/division-of-animal-health](http://www.agriculture.ks.gov/divisions-programs/division-of-animal-health) or by calling KDAH at (785) 296-2326.

SWINE

1. **All swine must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. All swine entering Kansas should follow all KDAH import requirements. The import requirement list is available at [www. agriculture.ks.gov/divisions-programs/division-of-animal-health](http://www.agriculture.ks.gov/divisions-programs/division-of-animal-health) or by calling KDAH at (785) 296-2326.

NOTE: SWINE VACCINATED FOR PSEUDORABIES SHALL NOT BE ALLOWED INTO KANSAS FOR EXHIBITION OR ANY OTHER PURPOSES.

SHEEP

1. **All sheep must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**

2. All sheep must be identified with an official USDA premises ID tag. Lambs under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
3. All sheep must be free of any signs of sore mouth.
4. All sheep must be free of signs of active fungal (ringworm) infection, including club lamb fungus. Sheep may be examined by KDAH officials.
5. All sheep entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

GOATS

1. **All goats must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All goats must be identified with a registered tattoo or an official USDA premises ID tag. Goats identified with registration tattoos must have registration papers for these animals available for inspection. Kids under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
3. All goats must be free of signs of active fungal (ringworm) infection, including sore mouth.
4. All goats entering Kansas should follow all KDA import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

HORSES

1. **All horses must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Identification must be individually listed on the CVI.**
2. Evidence of a negative equine infectious anemia (EIA/ Coggins) test conducted within 12 months before exhibition must accompany the CVI. Test results must be shown on a VS 10-11 form (copies will not be accepted unless verified *in writing* by testing veterinarian). Foals, six months of age and younger, accompanying their EIA-negative dams, are exempt from EIA test requirements.

3. A valid Equine Passport may be used in lieu of a CVI. If an equine passport is used, a negative EIA test within six months is required.
4. All horses entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

POULTRY

All poultry, except waterfowl, must show proof that they are pullorum - typhoid clean by one of the following methods:

1. Originate from a NPIP certified U.S. Pullorum-Typhoid clean flock as evidenced by an official VS Form 9-3, certifying all adult poultry in the flock have had a negative test for pullorum-typhoid within the past year. (Adult poultry are any turkeys over 12 weeks of age and any other poultry over 16 weeks of age).
2. Be accompanied by an official VS Form 9-3 signed by the official NPIP representative in the state of origin or by a CVI that has been issued within the previous 90 days.
3. In addition to the VS9-3 or CVI, out-of-state poultry must have a "Permit to Ship Poultry or Hatching Eggs" issued by the KDAH within the previous year, or a permit number issued by the KDAH office within the previous 15 days.

All poultry entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-232

Appendix 2

Biosecurity recommendations for Kansas State Fair-Silver Level

Recommendations for the Kansas State Fair Biosecurity-- Draft II--

Oct 31, 2014 (Medium level of biosecurity, "Silver Standard")

Updated 2/27/2014

Introduction

The Kansas state Fair is the largest organized mass gathering in Kansas with an attendance of more than 350,000 people in 2014. With a history of more than a century, the fair is an opportunity for people to enjoy the "fair experience", as well as be educated about Kansas agriculture. For many FFA and 4-H exhibitors, this is an important livestock exhibition event. It is a chance for people to "see where their food comes from" and to appreciate the human-animal bond seen in animal agriculture. Keeping fair visitors safe to enjoy the fair and keeping livestock healthy while being exhibited is the goal of this biosecurity recommendation document. We have sought to balance keeping people safe from zoonotic diseases (transferred from animal to people) while not making demands on the fair patrons such that we discourage them from attending the fair, or livestock exhibitions in particular.

1. Entrance to fair grounds for exhibitors / animal owners "**Check-in**" Procedures:
 - a) See Section E in this document for Kansas Department of Agriculture requirements for admission to the Kansas State Fair.

- b) All livestock exhibitors and owners need to receive and acknowledge receipt of the following statements at the time of off-loading animals at the fair :

“All horses and other livestock that enter the Kansas State Fairgrounds whether entered for exhibit, competition or otherwise, are subject to examination by event officials and /or State Animal health officials to determine whether animals are or have been exposed/ infected or are likely to be infected with a contagious or infectious disease.

“If after such examination, there is reason to believe that an animal’s health condition places other animals at risk, event officials may isolate such an animal, and other animals that may have been infected/exposed.

“All participants agree to fully cooperate with event officials and abide by their decisions/instructions. Failing to comply shall be grounds for immediate expulsion of the participant from the grounds and potential action by organization, local / state or federal animal health officials.”

This would allow exhibitors to know what the expectation of State Fair personnel and officials are in dealing with an animal disease event.

Those exhibitors or owners not willing to comply with this statement should be turned away from the fair. (See Section C in this document for additional information)

2. Check out procedures for all livestock

a) Each exhibitor needs to fill out a “check out” form upon leaving the fairgrounds. (A draft of this “check-out” document is attached in Section 1 of this document.)

- a. This would give:

-date of entrance of the livestock into the fair,

- building and pen number where animal(s) was housed while at the fair, date of exit from the fair,
- destination of the livestock (i.e. returning to farm, to slaughter, or further competition),
- contact phone number and address of exhibitor.

-Signature of agent or exhibitor

2. This information could be used for trace back data if the need arises. The document can be left with the gate staff upon departure. Gate staff can forward to fair administration who can forward to KDA if needed for trace back. For animals or herds in the *USA HERDS* the GPS coordinates could be located.
3. Give exhibitors (FFA, 4-H and others) leaving the fairgrounds a list of recommendations for post-fair quarantine when returning to the farm or ranch of origin: See Section B in this document for Iowa State University Biosecurity handout that can be used.

Suggested swine recommendations: all swine and swine pens mates should not be exhibited for at least 7 days following the fair exhibition to reduce the spread of swine influenza (Swine exhibition biosecurity recommendations US Animal Health Association website)

- d) Recommend that all animals returning to the farm or ranch or origin should be quarantined for at least 21 days to protect the other animals on the farm from any possible infection acquired. Owners / exhibitors should daily examine their animals which returned from the fair during this quarantine time for signs of disease and notify their veterinarian of any concerns.

General Animal Health Recommendations:

- A) Discuss with Fair Board general manager(s) the *possibility* of requiring cattle entering the fair to be tested for BVD virus and show negative test to enter fair.
- B) No dogs are allowed on the fair ground during the State Fair. The EXCEPTION would be service animals under the Americans with Disabilities Act
- C) All animal entering the Kansas State fairgrounds need to have a CVI (certificate of veterinary inspection). The CVI must:

- Be issued by an accredited licensed veterinarian
- Show the name and address of the owner/ exhibitor
- Show all tests required and vaccinations given
- Each Swine CVI must contain the following statement: *“To the best of my knowledge, swine represented on this certificate have not been exposed to or been infected with Porcine Epidemic Diarrhea (PEDv) or originated from premises known to be infected by PEDv in the last thirty (30) days.”*

(see Section E for additional information on Kansas Department of Agriculture requirements for animal’s admission to state fair

Animal Contact Areas and facility design

1. Continue to post the information on-line (as is currently done by the Fair) on livestock viewing, hand washing and sanitation advice given on the website at “Planning Your Day at the Fair”. This is good advice to protect fair visitors from zoonotic disease.
(See Section F in this document.)

2. Increase the number of hand sanitizing stations throughout the fair.

Increase the number of hand hygiene stations from **32 to 50**.

(See Section G in this document for more details.) If possible, add more of these in the following areas:

- a) Food vendor areas –one hand sanitizer station for every **4 food vendors** with accompanying signage to encourage visitors to sanitize their hands before eating.
- b) Entrance/ exits of all fair gates with signage to encourage visitors to sanitize their hands prior to departing the fairgrounds campus.
- c) Additional hand sanitizers at livestock unloading areas with signage to encourage owners and exhibitors to clean their hands after unloading the animals.
- d) Organize hand hygiene stations (either hand sanitizers or hand washing), such that children ages 3 to 5 years, have some of these stations at their height so as to encourage hand hygiene among this high risk group.

3. Additional signage (signage / reproducible signage) is available through the *Centers For Disease Control and Prevention-Atlanta*) is needed in livestock exhibition areas, petting zoo areas, exits and entrances to fair grounds to encourage hand hygiene and to communicate risks associated with zoonotic diseases

- a) In livestock building, more signs are needed to discourage people allowing children to sit in the stalls or floors where they can easily

contact manure. Sippy cups and pacifiers use in the livestock barns need to be discouraged.

- b) Communicate to exhibitors and livestock owners that personal food items such as snacks and drinks should not be stored in the barns near livestock. Encourage good hand hygiene among exhibitors (washing hand after handling animals and before eating).

- c) Signage not to eat or drink while visiting the livestock exhibition is needed in English and Spanish. Signage needs to be approximately 12 inches by 18 inches in size and using bold colors for lettering. Signage in English should be about 85 % of the signs while the remaining 15 % should be in Spanish language. This would roughly reflect the language distribution in the state.

Cooperation with partners and other agencies

Encourage the **Reno County Health Department** to be more actively involved at the Kansas state Fair. The health department can assist in training fair personnel in the prevention of zoonotic diseases. Personnel can be trained to supervise visitors in carrying out hand washing following visits to the petting zoo and exhibition areas. Also they can train fair workers to discourage eating and drinking in the animal exhibition areas, verbally encouraging parents not to allow their children to sit in the animal exhibit areas.

Physical Plant Changes and Construction

Isolation stalls need to be designated and prepared for use with separate water, feeding and personnel. This needs to be cordoned off so that other exhibitors, fair personnel or visitors cannot access the

isolation areas. The isolation stalls should be designated in areas so that sick animals do not have to be housed with other animals. Proper cleaning and disinfection of the stall where the sick animal was housed needs to be carried out. Adjacent stalls need to be checked daily by the state fair veterinarian.

Cleaning and sanitation-Following the close of the fair each September, all facilities, stalls, arenas, show areas, and loading/ unloading areas need to be cleaned and disinfected thoroughly. All bedding and manure needs to be hauled from the fair grounds to land fill for disposal. Adequate control for rodents needs to be instituted. The poultry and rabbit barns need to be secured such that wild birds (that might harbor disease) do not overwinter in the exhibit buildings. The rented portable horse stalls that are brought to the Kansas State Fair each September need to be cleaned and disinfected prior to livestock entering these stalls. (See Section D for information on the use of disinfectant known as *Symbiont Agri-Wash*.)

For non-fair events such as weddings, family reunions and so on where food and drinks are served the fair board should only rent out buildings where **NO livestock or poultry** have been kept during exhibitions or fair competitions. This will reduce the risk of transferring animal disease to humans by way of food.

SECTIONS of BIOSECURITY RECOMMENDATIONS
(For Additional Information)
Silver Level

Section A - Draft of "Check-Out Form" for animals leaving the fair grounds.

**DRAFT OF "CHECK-OUT FORM" FOR LIVESTOCK
LEAVING KANSAS STATE FAIR**

Name of exhibitor or owner _____

Type of livestock:

Beef Cattle___ Dairy cattle___ Swine___ Poultry___ Goats___ Sheep___

Equine___ Other (identify or name) ___

Date and time of **entrance** of the animal(s) into the fair
ground _____

Building and pen number where animal(s) was housed while at the
fair _____

Date of time of **exit** and from the fair _____

Destination of the livestock after leaving the fair (i.e. returning to farm, to
slaughter, or further competition) _____

Exhibitor's contact phone number and address (must be street address and
not post office box address)

Signature of agent or exhibitor _____

For state fair gate attendant only

Time of departure _____ Gate of departure _____

Initials of gate worker _____

Keep this form for State Fair Administration for trace back program

Section B

BIO-SECURITY ADVICE FOR EXHIBITORS WHEN RETURNING HOME

Iowa State University Extension Service Biosecurity for exhibitors document

(reprinted with permission of Iowa State University Extension Service)

Bio- Security and Fairs

What You Need to Know

Fairs create an environment that results in the intermingling of people from different backgrounds as well as animals from various locations and different species. Many of these situations are counter to what 4-H producers have been taught in herd and flock health management.

While fairs provide an opportunity for youth to participate in animal oriented group activities, they also represent a potential threat to the health of any livestock herd or flock and the financial well-being of an industry.

To protect the health and wellbeing of all animals and the exhibitors, the following points should be followed:

- Meet or exceed all health requirements for all animals as established by the state veterinarian.
- Bio-security is one of the reasons for health inspections. Have your animals checked by a veterinarian regularly and follow a your veterinarians suggested health program for exhibited animals

- Booster vaccinations should be given as recommended by your veterinarians prior to exhibiting animals
- Request a health certificate
- Leave unhealthy or contagious animals at home. Public settings such as fairs are not the place for animals with ringworm, club lamb fungus, warts, eye infections, draining wounds, respiratory diseases and other contagious diseases.
- Provide adequate feed and water during exhibition.
- Keep housing facility clean of manure and waste bedding.
- Make sure animals have adequate space and proper ventilation.
- Use your own barn cleaning equipment such as pitch forks, shovels, etc. and keep them clean. This goes for show equipment such as clippers and combs as well. Avoid sharing equipment with other exhibitors.
- Practice good personal hygiene. Disinfect boots and equipment often, as well as wash your hands frequently.
- Change or wash clothes and shoes worn at the fair before returning home to work with other animals.
- Be cautious as to who has contact with your animals. Discourage fair visitors from petting or feeding your animals. If so, encourage them to wash their hands.
- Be on guard for visitors that might intend harm to exhibited animals and report suspicious people or activities to the show security.

After the Fair

If you take your show animals off the farm and expose them to other animals, there is also the possibility of spreading germs or diseases.

After the fair, when you return your animals to your farm, strictly isolating exhibited animals from other animals for at least two weeks.

Thoroughly clean to remove all soil and manure from your equipment and trailer, rinse to remove soap, then disinfect. Exhibiting livestock is an enjoyable and educational experience for most young people. Following a few simple guidelines will help keep you and your livestock healthy during and following the show season.

IOWA STATE UNIVERSITY
University Extension

Section C

3. These statements are taken from “Biosecurity Toolkit for Equine Events, Feb 2012, by Dr. Katie Flynn, California Dept. of Food and Agriculture, Equine Medication Monitoring Program, page 19, Sacramento Ca; kflynn@cdfa.ca.gov

A similar statement can be authored specifically for Kansas.

Section D

Disinfection of premises at the KS State Fair

State fair management should consider the use of Symbiont Agricultural Wash for disinfection of all premises at the fair. This product is a food grade antimicrobial product that claims effectiveness against E. coli, EHV I virus, Salmonella species and avian influenza (H1N1). Exhibitors can purchase this product as well so that top down biosecurity (fair premises being disinfected) as well as a bottom up (exhibitors disinfecting tack, trailers and grooming equipment) can be implemented. More information can be found at the Synbiont website. This is not an endorsement of this product(s) by the author or by Kansas Department of Agriculture <http://www.synbiontagwash.com/how-to-use> (accessed Feb. 27, 2015)

Section E

General Rules - 2014 Livestock Requirements

2014 REQUIREMENTS FOR KANSAS STATE FAIR

LIVESTOCK HEALTH PAPER CHECK-IN:

7. **All livestock** must be inspected by a veterinarian and have certificates of veterinary inspection (CVIs/ health papers) issued prior to arrival at the Fairgrounds.
8. CVIs must be checked and stamped by officials of the Kansas Department of Agriculture Division of Animal Health (KDAH) at the livestock check-in area before entering the Fairgrounds.

9. The livestock check-in will be located east of the Fairgrounds at the Fairgrounds Water Park. Enter parking lot from Severance Street between 17th Ave. and 23rd Ave. Access Severance Street from 17th Avenue.
10. Daily check-in hours will be 6:00am to 10:00pm. Exhibitors should plan to arrive during these hours. If arrival is going to be delayed past 10:00 pm due to circumstances beyond exhibitor's control, please call the Highway Patrol at 620-669-3627.
11. After CVIs are inspected and approved, the officials will stamp CVIs, which will allow entry onto the Fairgrounds.
12. The KDAH reserves the right to inspect or test any animals on the Fairgrounds if necessary.

LIVESTOCK ORIGINATING IN KANSAS

GENERAL REQUIREMENTS

6. **All animals must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
7. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch for swine. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
8. Animals with lesions of ringworm, warts or infested with mange as determined by officials of the KDAH or exhibition staff will not be permitted to exhibit.
9. All required tests must be conducted by a state-approved laboratory.
10. All animals are subject to examination by officials of the KDAH or those designated by the exhibition staff, and shall be free of clinical signs of infectious or contagious disease.

CATTLE AND BISON

4. **All cattle and bison must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
5. All animals must be individually identified by official USDA-approved ear tag, or breed registration tattoo or tag. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
6. Kansas is brucellosis and tuberculosis free; no tests are required.

SWINE

4. **All swine must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
5. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
6. No testing for Pseudorabies or brucellosis is required for swine originating in Kansas, as Kansas is at stage V in the National Pseudorabies Program and swine brucellosis free.

SHEEP

5. **All sheep must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
6. All sheep must be identified with an official USDA premises ID tag. Lambs under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
7. All sheep must be free of any signs of sore mouth.

8. All sheep must be free of signs of active fungal (ringworm) infection, including club lamb fungus. Sheep may be examined by KDAH officials.

GOATS

4. **All goats must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
5. All goats must be identified with a registered tattoo or an official USDA premises ID tag. Goats identified with registration tattoos must have registration papers for these animals available for inspection. Kids under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
6. All goats must be free of signs of active fungal (ringworm) infection, including sore mouth.

HORSES

1. **All horses must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Identification must be individually listed on the CVI.**
2. Evidence of a negative equine infectious anemia (EIA/ Coggins) test conducted within 12 months before exhibition must accompany the CVI. Test results must be shown on a VS 10-11 form (copies will not be accepted unless verified *in writing* by testing veterinarian). Foals, six months of age and younger, accompanying their EIA-negative dams, are exempt from EIA test requirements.
3. A valid Equine Passport may be used in lieu of a CVI. If an equine passport is used, a negative EIA test within six months is required.

POULTRY

All poultry, except waterfowl, must show proof that they are pullorum-typhoid clean by one of the following methods:

5. Originate from a U.S. Pullorum -Typhoid clean flock as evidenced by an official VS Form 9-3, certifying all birds in the flock over 4 months of age have had a negative test for pullorum -typhoid within the past year.

6. Present evidence that the entries were purchased from a U.S. Pullorum-Typhoid clean source and have been the only poultry on the premises.
7. Present an official VS 9-2 Form, signed by an official testing agent, showing the entries have had a negative pullorum-typhoid test within the proceeding 90 days.
8. If an official tester is on site, entries may be tested at the time of entry. A VS 9-2 Form must be completed for each entry. If any birds in an entry test positive for pullorum-typhoid, the entire entry, as well as all other birds from the same premises, will be refused.

LIVESTOCK ORIGINATING FROM OTHER STATES

GENERAL REQUIREMENTS

7. All livestock entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.
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10. Animals with lesions of ringworm, warts or infested with mange as determined by officials of the KDAH or exhibition staff will not be permitted to exhibit.
11. All required tests must be conducted by a state-approved laboratory.
12. All animals are subject to examination by officials of the KDAH or those designated by the exhibition staff, and shall be free of clinical signs of infectious or contagious disease.

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NOTE: SWINE VACCINATED FOR PSEUDORABIES SHALL NOT BE ALLOWED INTO KANSAS FOR EXHIBITION OR ANY OTHER PURPOSES.

SHEEP

- a. **All sheep must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**

- D) All sheep must be identified with an official USDA premises ID tag. Lambs under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
- E) All sheep must be free of any signs of sore mouth.
- F) All sheep must be free of signs of active fungal (ringworm) infection, including club lamb fungus. Sheep may be examined by KDAH officials.
- G) All sheep entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

GOATS

- 5. **All goats must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
- 6. All goats must be identified with a registered tattoo or an official USDA premises ID tag. Goats identified with registration tattoos must have registration papers for these animals available for inspection. Kids under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
- 7. All goats must be free of signs of active fungal (ringworm) infection, including sore mouth.
- 8. All goats entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

HORSES

- 5. **All horses must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Identification must be individually listed on the CVI.**
- 6. Evidence of a negative equine infectious anemia (EIA/ Coggins) test conducted within 12 months before exhibition must accompany the CVI. Test results must be shown on a VS 10-11 form (copies will not be accepted unless verified *in writing* by

testing veterinarian). Foals, six months of age and younger, accompanying their EIA-negative dams, are exempt from EIA test requirements.

7. A valid Equine Passport may be used in lieu of a CVI. If an equine passport is used, a negative EIA test within six months is required.
8. All horses entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

POULTRY

All poultry, except waterfowl, must show proof that they are pullorum - typhoid clean by one of the following methods:

4. Originate from a NPIP certified U.S. Pullorum-Typhoid clean flock as evidenced by an official VS Form 9-3, certifying all adult poultry in the flock have had a negative test for pullorum-typhoid within the past year. (Adult poultry are any turkeys over 12 weeks of age and any other poultry over 16 weeks of age).
5. Be accompanied by an official VS Form 9-3 signed by the official NPIP representative in the state of origin or by a CVI that has been issued within the previous 90 days.
6. In addition to the VS9-3 or CVI, out-of-state poultry must have a "Permit to Ship Poultry or Hatching Eggs" issued by the KDAH within the previous year, or a permit number issued by the KDAH office within the previous 15 days.

All poultry entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326

Section F

From Kansas State fair website—“Planning your day at the Fair”

<https://kansasstatefair.com/page.php?id=398>

(used with permission of Kansas State Fair)

Animal-Safety

Animals can be great fun, but it's important to know how to be safe when you're with them. Animals and humans view their surroundings very differently. Humans see in color, while livestock in shades of grey and livestock generally have poor depth perception. Most animals can see wide angles around them, but have a blind spot (area they cannot see) near the hindquarters. Horses also have a blind spot directly in front of them. When approaching or around livestock, be aware of these blind spots – movement in these areas should be avoided as it makes animals uneasy and nervous. Animals also have extremely sensitive hearing – loud and high-frequency sounds can hurt their ears.

When around animals:

- Ask for permission to approach or touch an animal that is not a part of a petting zoo.
- Be calm and don't run around the animals
- Avoid making loud noises
- Approach large animals at their shoulder
- Be cautious about petting any newborn animals.

It is important to remember that animals sometimes carry germs that are harmful to us and can make us sick. Washing your hands is the best way to stop germs from spreading. Think about all of the things that you touched today - from the telephone, to a door handle to the animals in the petting zoo. Whatever you did today, you came into contact with germs. It is especially important to wash your hands after petting or being around animals because they not only carry germs that can be harmful to us but we can also come into contact with Zoonotic Diseases. Zoonotic Diseases are those that can be transferred from animals to humans. Some of these germs and diseases may not be harmful for the animals but can be harmful to humans. It's easy for a germ on your hand to end up in your mouth. Think about how many times your hands touch your face and how many

different foods you eat with your hands. You can't wear rubber gloves all day long, but you can wash your hands so those germs don't get a chance to make you or someone else sick. When germs go down the drain, they can't make anyone sick.

- Always wash your hands after petting animals or touching the animal enclosure, especially before eating and drinking.
- Running water and soap are best. Use whatever soap you like. Some soaps come in cool shapes and colors or smell nice, but whatever kind that gets you scrubbing is the kind you should use. Antibacterial soaps are OK to use, but regular soap works fine. Work up some lather on both sides of your hands, your wrists, and between your fingers. Don't forget to wash around your nails. This is one place germs like to hide. Wash for about 10 to 15 seconds - about how long it takes to sing "Happy Birthday." (Sing it quickly two times or just once if you go nice and slow.)
- Use hand gels if running water and soap are not available. You still need to rub your hands together when using the hand gel instead of water and soap.
- **Do not share your food with animals.**
- Never put your hands or objects (for example: pacifiers) in their mouth while interacting with animals.

Now that you've covered safety on the way to the fair, you can enjoy this exciting animal adventure!

Section G

Note on Hand hygiene: Hand washing has been shown to more effective in CDC (2010) and Health Protection Agency (2011) recommend the use of hand washing using soap and water, rather than hand sanitizers as the most effective way to remove organic material. Hand sanitizers should be used only if hand washing facilities are not available, according to the above agencies. Yamamoto, et al. 2005-has shown that using paper towel to dry hand after washing is more effective

than hot air dryers in removing bacteria from hands. The physical problem at the state fair maybe that there is not places to have plumbing, water and hand washing sinks for the visitors due to the location of the petting zoo and the food vendors being in temporary facilities.

The formula for estimating the number of hand sanitizers needed is:

of people x 1 minute (average time for hand washing) = # hand washing basins needed

number of minutes spent in exhibit area

This formula is from the Kansas Department of Health and Environment Fairs and Festivals Disease Prevention Toolkit website:

http://www.kdheks.gov/epi/download/Disease_Prevention_Toolkit.pdf

Appendix 3

Biosecurity recommendations for Kansas State Fair-Bronze level

Recommendations for the Kansas State Fair Biosecurity-- Draft II— Nov 21, 2014 (Ordinary level of biosecurity, “Bronze Standard”)

Last update Feb. 27, 2015

Introduction

The Kansas State Fair is the largest organized mass gathering in Kansas with an attendance of more than 350,000 people in 2014. With a history of more than a century, the fair is an opportunity for people to enjoy the “fair experience”, as well as be educated about Kansas agriculture. For many FFA and 4-H exhibitors this is an important livestock exhibition event. It is a chance for people to “see where their food comes from” and to appreciate the human-animal bond seen in animal agriculture. Keeping fair visitors safe to enjoy the fair and keeping livestock healthy while being exhibited is the goal of this biosecurity recommendation document. We have sought to balance keeping people safe from zoonotic diseases (transferred from animal to people) while not making excessive demands on the fair patrons such that we discourage them from attending the fair, or livestock exhibitions in particular.

The objective of this document is to provide event managers and staff with guidance to address the event biosecurity risks and develop an infectious disease control plan for use in responding to an infectious disease outbreak at the venue. Each event and venue is unique: therefore, this toolkit provides guidance for the assessment and development of event specific plans to address the identified disease risks of a particular event and venue.

Biosecurity is a set of preventative measures designed to reduce the risks for introduction and transmission of an infectious disease agent.

Infectious disease pathogens may be brought to and spread at an event premises by livestock, people, vehicles, equipment, insect, ticks, birds, wildlife, feed, waste and water. Implementation of an event biosecurity plan will minimize or prevent the movement of diseases on and off the premises. Failure to implement, or to comply with, biosecurity measures can lead to the increased likelihood of on-site disease agent introduction and transmission. Successful implementation of the biosecurity plan relies on event staff, participants and spectators understanding and complying with the policies and procedures of the plan. In the event of an animal disease outbreak, more stringent practices will be required to control disease spread.

A. Entrance to fair grounds for exhibitors / animal owners:

Animal Entry Requirements For Kansas State Fair

The following is a summary of the Kansas State Fair animal health regulations for animal entering the fair grounds. In some instances these regulations may exceed the current Kansas Dept. Of Agriculture regulations that govern movement of livestock into shows, fairs and exhibitions.

-All livestock exhibited or competing in the event should have a Certificate of Veterinary Inspection (“health certificate” or CVI) completed within the last 30 days (within 30 days of entrance into the livestock exhibition) signed by an accredited veterinarian. (See Section C in this document for details of CVI)

-All livestock should have official identification such as Bangs tags, National Uniform Ear-tagging System (NUES) tags, tattoo, Electronic Identification (EID) tags, or USDA Scrapie tags.

(See Section A in this document for 2014 Livestock Health Requirements for Kansas State Fair.)

All livestock owners should fill out the “check out form” upon departing from the fair with their livestock to return home. This form will be helpful in trace back of livestock who were unknowingly exposed to a

livestock disease while at the fair. This form would be submitted to personnel at the departure gates as livestock departs and would be used by the Kansas State Fair management for any trace back efforts. (See Section F in this document for a draft of this form.)

Additional recommendations for biosecurity:

Exhibitors should report any illness observed in their animals to the veterinarian in charge at the exhibit

Exhibitors should practice good biosecurity when returning to the home ranch or farm (assuming this is not a terminal show) and quarantine livestock that has been on exhibition for 21 days to avoid introducing disease into the home herds. If a 21 day period cannot be met, even a shorter interval of time for quarantine, will help in reducing introduction of disease. (See Section B in this document for additional information on biosecurity for exhibitors- 4-H recommendations on biosecurity for after the fair compiled by Iowa State Extension service.)

Exhibitors should be advised to bring their own brushes, halters, and other items to the exhibition and not to share with other exhibitors in order to avoid disease transmission.

Exhibitors should be advised to clean/wash hands following animal care in order to avoid transmission of illness from animals to themselves or to other animals.

No dogs are allowed on the fair ground during the State Fair, except for service animals under the Americans with Disability Act.

B. Protecting public health of visitors to the fair

Utilize as many hand washing and hand sanitizing stations throughout the fair as possible.

- a) Place hand sanitizing (hand hygiene stations) stations in areas of the event premises so that visitors and exhibitors can clean their hands following animal contact. These hand sanitizing stations can be

either hand washing stations with soap and water or hand sanitizer stations that use liquid hand sanitizers. There should be enough sanitizer stations such that there should be 5 hand sanitizers for each 100 visitors/hour that pass through the livestock exhibit. These hand sanitizer stations should be dispensing a hand sanitizer solution that is at least 60 % alcohol based.

- b) If this number of hand sanitizers cannot be achieved, there should be as many hand sanitizers placed in the exhibition as possible.

Special attention should be given to positioning hand sanitizer stations in the following areas:

Food vendor areas for fair visitors to clean their hands before eating. Suggestion: Request food vendors to supply their own hand sanitizer unit for their business as a means of reducing the financial burden on the Fair to purchase these.

- 1) Place hand sanitizers at the entrance/ exits of all fair gates with signage to encourage visitors to sanitize their hands prior to departing the fairgrounds campus and to advise visitors of potential for disease spread from animals to humans (raise awareness).
- 2) Position hand sanitizers at livestock unloading areas with signage to encourage owners and exhibitors to clean their hands after unloading the animals.
- 3) Organize hand hygiene stations (either hand sanitizers or hand washing), such that children ages 3 to 5 years, have some of these stations at their height (lower in height) so as to encourage hand hygiene among this high risk group of children.

- 4) Continue to post the information on-line (as is currently done by the Fair) on livestock viewing, hand washing and sanitation advice given on the website at “Planning Your Day at the Fair”. This is good advice to protect fair visitors from zoonotic disease. (See Section D.)

C. Additional signage (available through *the Center For Disease Control and Prevention*) is needed in livestock exhibition areas, petting zoo areas, exits and entrances to fair grounds to encourage hand hygiene and to communicate risks associated with zoonotic diseases

- 1) In livestock building, more signs are needed to discourage people from allowing children to sit in the stalls or floors where they can easily contact manure. Strollers, sippy cups and pacifiers use in the livestock barns should be prohibited.
- 2) Signage indicating not to eat or drink while visiting the livestock exhibition is needed in English and Spanish. Signage needs to be approximately 12 inches by 18 inches in size and using bold colors for lettering. Signage in English should be about 85 % of the signs while the remaining 15 % should be in Spanish language. This would roughly reflect the language distribution in the state.
- 3) Communicate to exhibitors and livestock owners that personal food items such as snacks and drinks should not be stored in the barns near livestock. Encourage good hand hygiene among exhibitors (washing hands after handling animals and before eating).
- 4) Communicate to exhibitors and livestock owners that exhibitors should not be sleeping or eating in the livestock exhibit areas.

D. Physical plant concerns / Changes in construction

Isolation stalls need to be designated and prepared for use with separate water, feeding and personnel. This needs to be cordoned off so that other exhibitors, fair personnel or visitors cannot access the isolation areas. Preferable this would be in a separate building from exhibition animals. The isolation stalls should be designated in areas so that sick animals do not have to be housed with other animals. Proper cleaning and disinfection of the stall where the sick animal was housed needs to be carried out. Adjacent stalls of animals that were isolated need to be checked daily by the state fair veterinarian.

E. After exhibit and competition cleaning and disinfection (after the fair)

- 1) Cleaning and sanitation-Following the close of the fair each September, all facilities, stalls, arenas, show areas, and loading/unloading areas need to be cleaned and disinfected thoroughly. All bedding and manure needs to be hauled from the fair grounds to land fill for disposal. Adequate control for rodents needs to be instituted. The poultry and rabbit barns need to be secured such that wild birds (that might harbor disease) do not overwinter in the exhibit buildings. Rented horse stalls that are brought in for the fair should be cleaned and disinfected prior to animals entering the stalls. (See Section E for recommendations on use of disinfectant for premises disinfection.)
- 2) For non-fair events such as weddings, family reunions and so on where food and drinks are served, the fair board should only rent out buildings where NO livestock or poultry have been kept during exhibitions or fair competitions. This will reduce the risk of

transferring animal diseases (that could persist in dust or debris) to humans by way of food.

F) Livestock event infectious disease outbreak- being prepared for the unlikely but high impact disease event

Kansas State Fair needs to be prepared for the unlikely event of a “stop movement order” from the State of Kansas, Animal Health Commissioner in the event of a foreign animal disease threat. If this animal health disease event were to occur, livestock at the Kansas State Fair would temporarily not be allowed to travel back to their farms/ ranches of origin. They would be held in the state fair facilities for several days until the livestock could be examined by Department of Agriculture teams and permission from the State Animal health Commissioner given for movement of livestock to home farms/ ranches. The state fair staff and administration would be responsible for feeding housing these animals for the duration of “the stop movement order”.

**SECTIONS of BIOSECURITY RECOMMENDATIONS
(For Additional Information)
Bronze Level**

Section A

**General Rules - 2014 Livestock Requirements
2014 REQUIREMENTS FOR KANSAS STATE FAIR**

LIVESTOCK HEALTH PAPER CHECK-IN:

1. **All livestock** must be inspected by a veterinarian and have certificates of veterinary inspection (CVIs/ health papers) issued prior to arrival at the Fairgrounds.
2. CVIs must be checked and stamped by officials of the Kansas Department of Agriculture Division of Animal Health (KDAH) at the livestock check-in area before entering the Fairgrounds.
3. The livestock check-in will be located east of the Fairgrounds at the Fairgrounds Water Park. Enter parking lot from Severance Street between 17th Ave. and 23rd Ave. Access Severance Street from 17th Avenue.
4. Daily check-in hours will be 6:00am to 10:00pm. Exhibitors should plan to arrive during these hours. If arrival is going to be delayed past 10:00 pm due to circumstances beyond exhibitor's control, please call the Highway Patrol at 620-669-3627.
5. After CVIs are inspected and approved, the officials will stamp CVIs, which will allow entry onto the Fairgrounds.
6. The KDAH reserves the right to inspect or test any animals on the Fairgrounds if necessary.

LIVESTOCK ORIGINATING IN KANSAS

GENERAL REQUIREMENTS

1. **All animals must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch for swine. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. Animals with lesions of ringworm, warts or infested with mange as determined by officials of the KDAH or exhibition staff will not be permitted to exhibit.
4. All required tests must be conducted by a state-approved laboratory.
5. All animals are subject to examination by officials of the KDAH or those designated by the exhibition staff, and shall be free of clinical signs of infectious or contagious disease.

CATTLE AND BISON

1. **All cattle and bison must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, or breed registration tattoo or tag. All identification numbers must be individually listed on the accompanying CVI. If

registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**

3. Kansas is brucellosis and tuberculosis free; no tests are required.

SWINE

1. **All swine must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. No testing for Pseudorabies or brucellosis is required for swine originating in Kansas, as Kansas is at stage V in the National Pseudorabies Program and swine brucellosis free.

SHEEP

1. **All sheep must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All sheep must be identified with an official USDA premises ID tag. Lambs under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
3. All sheep must be free of any signs of sore mouth.
4. All sheep must be free of signs of active fungal (ringworm) infection, including club lamb fungus. Sheep may be examined by KDAH officials.

GOATS

1. **All goats must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All goats must be identified with a registered tattoo or an official USDA premises ID tag. Goats identified with registration tattoos must have registration papers for these animals available for inspection. Kids under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
3. All goats must be free of signs of active fungal (ringworm) infection, including sore mouth.

HORSES

1. **All horses must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Identification must be individually listed on the CVI.**
2. Evidence of a negative equine infectious anemia (EIA/ Coggins) test conducted within 12 months before exhibition must accompany the CVI. Test results must be shown on a VS 10-11 form (copies will not be accepted unless verified *in writing* by testing veterinarian). Foals, six months of age and younger, accompanying their EIA-negative dams, are exempt from EIA test requirements.
3. A valid Equine Passport may be used in lieu of a CVI. If an equine passport is used, a negative EIA test within six months is required.

POULTRY

All poultry, except waterfowl, must show proof that they are pullorum-typhoid clean by one of the following methods:

1. Originate from a U.S. Pullorum -Typhoid clean flock as evidenced by an official VS Form 9-3, certifying all birds in the flock over 4 months of age have had a negative test for pullorum -typhoid within the past year.
2. Present evidence that the entries were purchased from a U.S. Pullorum-Typhoid clean source and have been the only poultry on the premises.
3. Present an official VS 9-2 Form, signed by an official testing agent, showing the entries have had a negative pullorum-typhoid test within the proceeding 90 days.
4. If an official tester is on site, entries may be tested at the time of entry. A VS 9-2 Form must be completed for each entry. If any birds in an entry test positive for pullorum-typhoid, the entire entry, as well as all other birds from the same premises, will be refused.

LIVESTOCK ORIGINATING FROM OTHER STATES

GENERAL REQUIREMENTS

1. All livestock entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.
2. **All animals must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
3. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch for swine. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**

4. Animals with lesions of ringworm, warts or infested with mange as determined by officials of the KDAH or exhibition staff will not be permitted to exhibit.
5. All required tests must be conducted by a state-approved laboratory.
6. All animals are subject to examination by officials of the KDAH or those designated by the exhibition staff, and shall be free of clinical signs of infectious or contagious disease.

CATTLE AND BISON

1. **All cattle and bison must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, or breed registration tattoo or tag. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. All cattle and bison entering Kansas should follow all KDAH import requirements. The import requirement list is available at [www. agriculture.ks.gov/divisions-programs/division-of-animal-health](http://www.agriculture.ks.gov/divisions-programs/division-of-animal-health) or by calling KDAH at (785) 296-2326.

SWINE

1. **All swine must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All animals must be individually identified by official USDA-approved ear tag, breed registration tattoo or tag, or breed association ear notch. All identification numbers must be individually listed on the accompanying CVI. If registration tattoos are used, the registration papers must be available for inspection, and **both the breed registration number and tattoo number must be written on the CVI.**
3. All swine entering Kansas should follow all KDAH import requirements. The import requirement list is available at [www. agriculture.ks.gov/divisions-programs/division-of-animal-health](http://www.agriculture.ks.gov/divisions-programs/division-of-animal-health) or by calling KDAH at (785) 296-2326.

NOTE: SWINE VACCINATED FOR PSEUDORABIES SHALL NOT BE ALLOWED INTO KANSAS FOR EXHIBITION OR ANY OTHER PURPOSES.

SHEEP

1. **All sheep must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
6. All sheep must be identified with an official USDA premises ID tag. Lambs under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.

7. All sheep must be free of any signs of sore mouth.
8. All sheep must be free of signs of active fungal (ringworm) infection, including club lamb fungus. Sheep may be examined by KDAH officials.
9. All sheep entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

GOATS

1. **All goats must be accompanied by a Certificate of Veterinary Inspection (CVI/ health paper) issued within 30 days before exhibit, and the CVI must be available, upon request, to the officials of the KDAH or exhibition staff. Official identification must be individually listed on the CVI.**
2. All goats must be identified with a registered tattoo or an official USDA premises ID tag. Goats identified with registration tattoos must have registration papers for these animals available for inspection. Kids under 8 weeks of age, accompanying their dams, are exempt from tagging requirements.
3. All goats must be free of signs of active fungal (ringworm) infection, including sore mouth.
4. All goats entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

HORSES

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2. Evidence of a negative equine infectious anemia (EIA/ Coggins) test conducted within 12 months before exhibition must accompany the CVI. Test results must be shown on a VS 10-11 form (copies will not be accepted unless verified *in writing* by testing veterinarian). Foals, six months of age and younger, accompanying their EIA-negative dams, are exempt from EIA test requirements.
3. A valid Equine Passport may be used in lieu of a CVI. If an equine passport is used, a negative EIA test within six months is required.
4. All horses entering Kansas should follow all KDAH import requirements. The import requirement list is available at www.agriculture.ks.gov/divisions-programs/division-of-animal-health or by calling KDAH at (785) 296-2326.

POULTRY

All poultry, except waterfowl, must show proof that they are pullorum - typhoid clean by one of the following methods:

1. Originate from a NPIP certified U.S. Pullorum-Typhoid clean flock as evidenced by an official VS Form 9-3, certifying all adult poultry in the flock have had a negative test for pullorum-typhoid within the past year. (Adult poultry are any turkeys over 12 weeks of age and any other poultry over 16 weeks of age).

2. Be accompanied by an official VS Form 9-3 signed by the official NPIP representative in the state of origin or by a CVI that has been issued within the previous 90 days.
 3. In addition to the VS9-3 or CVI, out-of-state poultry must have a "Permit to Ship Poultry or Hatching Eggs" issued by the KDAH within the previous year, or a permit number issued by the KDAH office within the previous 15 days.
 4. All poultry entering Kansas should follow all KDAH import requirements. The import requirement list is available at [www. agriculture.ks.gov/divisions-programs/division-of-animal-health](http://www.agriculture.ks.gov/divisions-programs/division-of-animal-health) or by calling KDAH at (785) 296-2326.
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Section B

Iowa 4-H Biosecurity for exhibitors' document

(reprint permission granted by Iowa State University Extension Service)

Bio- Security and Fairs

What You Need to Know

Fairs create an environment that results in the intermingling of people from different backgrounds as well as animals from various locations and different species. Many of these situations are counter to what 4-H producers have been taught in herd and flock health management.

While fairs provide an opportunity for youth to participate in animal oriented group activities, they also represent a potential threat to the health of any livestock herd or flock and the financial well-being of an industry.

To protect the health and wellbeing of all animals and the exhibitors, the following points should be followed:

- Meet or exceed all health requirements for all animals as established by the state veterinarian.
- Bio-security is one of the reasons for health inspections. Have your animals checked by a veterinarian regularly and follow a your veterinarians suggested health program for exhibited animals

- Booster vaccinations should be given as recommended by your veterinarians prior to exhibiting animals
- Request a health certificate
- Leave unhealthy or contagious animals at home. Public settings such as fairs are not the place for animals with ringworm, club lamb fungus, warts, eye infections, draining wounds, respiratory diseases and other contagious diseases.
- Provide adequate feed and water during exhibition.
- Keep housing facility clean of manure and waste bedding.
- Make sure animals have adequate space and proper ventilation.
- Use your own barn cleaning equipment such as pitch forks, shovels, etc. and keep them clean. This goes for show equipment such as clippers and combs as well. Avoid sharing equipment with other exhibitors.
- Practice good personal hygiene. Disinfect boots and equipment often, as well as wash your hands frequently.
- Change or wash clothes and shoes worn at the fair before returning home to work with other animals.
- Be cautious as to who has contact with your animals. Discourage fair visitors from petting or feeding your animals. If so, encourage them to wash their hands.
- Be on guard for visitors that might intend harm to exhibited animals and report suspicious people or activities to the show security.

After the Fair

If you take your show animals off the farm and expose them to other animals, there is also the possibility of spreading germs or diseases.

After the fair, when you return your animals to your farm, strictly isolating exhibited animals from other animals for at least two weeks.

Thoroughly clean to remove all soil and manure from your equipment and trailer, rinse to remove soap, then disinfect. Exhibiting livestock is an enjoyable and educational experience for most young people. Following a few simple guidelines will help keep you and your livestock healthy during and following the show season.

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Section C

- i) All animal entering the Kansas State fairgrounds need to have a CVI (certificate of veterinary inspection). The CVI must:
 - ii) Be issued by an accredited licensed veterinarian
 - iii) Show the name and address of the owner/ exhibitor
 - iv) Show all tests required and vaccinations given
 - v) Each Swine CVI must contain the following statement: *“To the best of my knowledge, swine represented on this certificate have not been exposed to or been infected with Porcine Epidemic Diarrhea (PEDv) or originated from premises known to be infected by PEDv in the last thirty (30) days.”*
-

Section D

From Kansas State fair website—“Planning your day at the Fair”

<https://kansasstatefair.com/page.php?id=398>

(reprinted with permission of the Kansas State fair)

AnimalSafety

Animals can be great fun, but it's important to know how to be safe when you're with them. Animals and humans view their surroundings very differently. Humans see in color, while livestock in shades of grey and livestock generally have poor depth perception. Most animals can see wide angles around them, but have a blind spot (area they cannot see) near the hindquarters. Horses also have a blind spot directly in front of them. When approaching or around livestock, be aware of these blind spots – movement in these areas should be avoided as it makes animals uneasy and nervous. Animals also have extremely sensitive hearing – loud and high-frequency sounds can hurt their ears.

When around animals:

- Ask for permission to approach or touch an animal that is not a part of a petting zoo.
- Be calm and don't run around the animals
- Avoid making loud noises
- Approach large animals at their shoulder
- Be cautious about petting any newborn animals.

It is important to remember that animals sometimes carry germs that are harmful to us and can make us sick. Washing your hands is the best way to stop germs from spreading. Think about all of the things that you touched today - from the telephone, to a door handle to the animals in the petting zoo. Whatever you did today, you came into contact with germs. It is especially important to wash your hands after petting or being around animals because they not only carry germs that can be harmful to us but we can also come into contact with Zoonotic Diseases. Zoonotic Diseases are those that can be transferred from animals to humans. Some of these germs and diseases may not be harmful for the animals but can be harmful to humans. It's easy for a germ on your hand to end up in your mouth. Think about how many times your hands touch your face and how many different foods you eat with your hands. You can't wear rubber gloves all day long, but you can wash your hands so those germs don't get a chance to make you or someone else sick. When germs go down the drain, they can't make anyone sick.

- Always wash your hands after petting animals or touching the animal enclosure, especially before eating and drinking.
- Running water and soap are best. Use whatever soap you like. Some soaps come in cool shapes and colors or smell nice, but whatever kind that gets you scrubbing is the kind you should use. Antibacterial soaps are OK to use, but regular soap works fine. Work up some lather on both sides of your hands, your wrists, and between your fingers. Don't forget to wash around your nails. This is one place germs like to hide. Wash for about 10 to 15 seconds - about how long it

takes to sing "Happy Birthday." (Sing it quickly two times or just once if you go nice and slow.)

- Use hand gels if running water and soap are not available. You still need to rub your hands together when using the hand gel instead of water and soap.
- **Do not share your food with animals.**
- Never put your hands or objects (for example: pacifiers) in their mouth while interacting with animals.

Now that you've covered safety on the way to the fair, you can enjoy this exciting animal adventure!

Section E

Disinfection of premises at the KS State Fair

State fair management should consider the use of Symbiont Agricultural Wash for disinfection of all premises at the fair. This product is a food grade antimicrobial product that claims effectiveness against E. coli, EHV 1 virus, Salmonella species and avian influenza (H1N1). Exhibitors can purchase this product as well so that 'top down biosecurity' (fair premises being disinfected) as well as a 'bottom up' (exhibitors disinfecting tack, trailers and grooming equipment) can be implemented. More information can be found at the Symbiont website. This is not a recommendation or endorsement of this product.

<http://www.symbiontagwash.com/how-to-use> (accessed Feb. 27, 2015)

Section F

Draft of "Check-Out Form" for animals leaving the fair grounds.

DRAFT OF "CHECK-OUT FORM" FOR LIVESTOCK LEAVING KANSAS STATE FAIR

Name of exhibitor or owner _____

Type of livestock:

Beef Cattle___ Dairy cattle___ Swine___ Poultry___ Goats___ Sheep___

Equine___ Other (identify or name) ___

Date and time of **entrance** of the animal(s) into the fair
ground _____

Building and pen number where animal(s) was housed while at the
fair _____

Date of time of **exit** and from the fair _____

Destination of the livestock after leaving the fair (i.e. returning to farm, to
slaughter, or further competition) _____

Exhibitor's contact phone number and address (must be street address and
not post office box address)

Signature of agent or exhibitor _____

For state fair gate attendant only

Time of departure _____ Gate of departure _____

Initials of gate worker _____

Keep this form for State Fair Administration for trace back program

Appendix 4

Research on risky zoonotic disease behavior of visitors to the Kansas State Fair—a proposed research project

Observational study

Date/ for duration of state fair—approximately 10 days (extra observers would be needed on weekends due to the larger attendance at the fair on weekends as well as the high school livestock shows that are often scheduled on the weekends of the fair)

Research questions to be considered:

Questions / metrics to be considered.

1. How many people attend the cattle barns per day?
 2. Average amount of time spent in barns by individuals (note that this may need to be by small groups as there may be a family consisting of a parent and children visiting the livestock barns / exhibits and they would move through the barns as a group and not as individuals. Adjustments would need to be considered in how to count these groups)
 - 3.-thru oral surveys—interview a sample of fair visitors (who visit the livestock exhibitions) about their knowledge of zoonotic diseases and risk factors at the fair (from healthy animals and prevention)
 4. Through oral surveys of individuals exhibiting animals at the fair (this would be both youth exhibitors and adult), interview them about their level of knowledge of zoonotic diseases and risk factors.
 5. Behavioral observations
 - how many people eat foods / drink drinks in livestock areas (barns)
 - how many people touch the animals / pet the animals versus only observing the animals
- How many children are under approx. 5 years of age (high risk group)?
- How many visitors are over about 65 years of age (high risk)? (Note that this may need to be estimated as people may not give their ages.)
- How many children exhibit behaviors such as these?

Fingers or hand in mouth while in the livestock barn?

-drink cups or use pacifiers in animal exhibition areas?

How many baby strollers in the barns?

GUIDE TO THE KANSAS STATE FAIRGROUNDS



LEGEND

- Entrance Gates
- Ticket Offices for U.S. Cellular Grandstand Events
- Information Center
- ATM Machines
- Parking for patrons with disabilities
- Mennonite Friendship Communities Tram Route
- Sky Ride Route
- TTY Phone for Hearing Impaired - Located in Administration Building
- Special Attractions
- First Aid
- Public Restrooms (All shown have reasonable accommodations for the disabled.) Family restrooms are in Cottonwood Court, Domestic Arts, Encampment, Expo Center, Meadowlark, Sunflower North, Pride of Kansas, Prairie Pavilion and Oz Gallery Brezeway.
- Nursing Mothers Room
- Kansas Largest Classroom Little Red School House

