BIOSECURITY FACTSHEETS

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- BIOSECURITY FACTS
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BIOSECURITY FACTS

- Disease is a welfare concern for pigs, it leads to ill health, poor growth and/or death; is costly to producers; and can impact export markets
- Pathogens are bacteria, viruses or other microorganisms that cause disease in pigs
- Biosecurity objectives are to keep pathogens from spreading from farm to farm, animal to animal, animal to human, human to animal or country to country
- Biosecurity methods are based on understanding how pathogens spread, and therefore, how to minimize or stop the spread of diseases
- Some bacteria and viruses can live in pigs for a long time without showing signs of disease. When these pigs are stressed they shed the disease agent (bacteria or virus) which can then infect susceptible pigs in the herd
- Clean personal protective equipment should be used routinely (boots must be washed, disinfected and dried or disposable, coveralls must be washed and dried or disposable)
- Limit where vehicles go and personnel walk on the farm
- Regularly clean vehicles (eg. truck) including the exterior and the cab
- Disinfectants cannot eliminate pathogens if organic material (manure, straw, feed) is not removed first
- Cleaning surfaces with detergents and then rinsing prior to disinfection is essential
- Disinfectants are necessary to reduce the likelihood of pathogen spread
- **Steps to remove pathogens:**
  1. Remove visible organic material (manure, straw, feed)
  2. Clean surfaces with detergent and then rinse with pressurized water (hot if available)
  3. Apply disinfectant and leave on for time indicated on label
  4. Allow surfaces to dry killing any remaining bacteria and viruses

Disinfectants

- Follow manufacturer's directions
- Use protective personal equipment suggested: gloves, masks, eye protection
- Efficacy of a disinfectant is its ability to kill the bacteria or virus
- Some disinfectants effectively kill only bacteria or only viruses
- All-in/all-out management – remove all animals from room/barn, carefully clean, disinfect and leave to dry before introducing new animals
- Disinfectants are not able to kill pathogens in the presence of organic material
- Remove all organic material including manure, straw and feed
- The biofilm that builds up on the walls of barns and livestock trucks must be removed with detergents
- Surfaces need to be washed with detergents and then rinsed prior to applying the disinfectant
- Soap and detergents can inactivate or reduce the efficacy of some disinfectants, so rinse well
- Time to kill is important: disinfectants need to remain in contact with a surface for a specific duration of time as directed on the label
- Colder temperatures and hard water require longer contact times
- Foaming of the disinfectant ensures better coverage and maximum contact time
- Drying is essential to kill the remaining bacteria and viruses not killed by the disinfectant

APP
(Actinobacillus pleuropneumoniae)

Pig:

- Typically affects grower/finisher pigs but may also be seen in nursery pigs
- In severe outbreaks pigs die suddenly
- Prior to death, pigs have a high fever, trouble breathing and may have purple ears and belly
- Dead pigs have purple colored skin and bloody, frothy discharge from nose and mouth

Spread:

- Nose-to-nose contact between pigs that are coughing and have nasal discharge
- Bacteria on fomites (objects) such as boots and coveralls can be spread to other pigs or farms
- Outbreaks can occur when there is poor air quality, overcrowding of pens, and moving and mixing pigs

Barn Control:

- To reduce outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Do not mix pigs from different farms
- Provide good air quality and reduce large daily changes in barn temperature
- Reduce overcrowding in pens and also moving and mixing of pigs

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Wear plastic/disposable over-boots in farm yard or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use
- Do not step into the truck with boots that have touched the ground
- Do not enter the barn during a disease outbreak
- If barn entry is necessary, stay out of rooms with pigs, wear boots and coveralls from the farm and wash hands before leaving

Flu
(Influenza A virus)

Pig:

- High fever, lack of energy and movement, cough, runny noses and red, swollen eyes - lasts less than a week, usually pigs don't die unless other diseases or conditions are a problem
- Was thought that mainly finishers were affected in the cold weather – fall and winter, but all ages can be affected year long

Spread:

- Pig to pig through cough and nasal discharge
- When a pig coughs, they send out large amounts of virus into the air that is then breathed in by other pigs
- Virus spread starts quickly after the first pig is infected

Barn Control:

- Pigs need to live in a warm, dry environment and have good access to water to recover from the viral infection
- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Keep birds out of the barn and do not raise turkeys, ducks or chickens on the same farm as pigs. Viruses can move between birds and pigs

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Avoid going into barns if you have the flu; wear a mask when entering a barn, especially if you have a cough
- If barn entry is necessary, wear farm boots and coveralls, a mask, clean gloves (disposable and wash and dried) or alternatively wash hands when entering and leaving the barn. If a mask is not available, sneeze/cough into your elbow
- People working around pigs or poultry should receive a seasonal influenza vaccine annually

WARNING: ZOONOTIC – can pass from people to pigs and from pigs to people

Ileitis
(Lawsonia intracellularis)

Pig:

- Affects mostly grower/finisher pigs but can affect nursery pigs and incoming breeding stock
- Sudden onset bleeding from the intestine followed by death; the first sign may be whitish pigs due to blood loss (anemia)
- Mortality (death losses) is high in breeding stock and older finisher pigs
- Pigs will have normal colored manure that varies from normal consistency to diarrhea that may be 'shiny' with mucus
- Pigs with chronic (long lasting) disease have lower weight gain ("poor doers") leading to variation in the size of pigs in a pen
- Pigs with chronic disease are usually 6 to 20 weeks of age

Spread:

- Spread is by fecal-oral route (manure to mouth).
- Bacteria may be shed in the manure of an infected pig for up to 10 weeks and can live in the manure for 2 – 3 weeks
- Bacteria can be spread by pigs with no signs of sickness and can be found in rodents and insects

Barn Control:

- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Rodent and insect control
- Reduce moving and mixing of pigs and large daily changes in barn temperature

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Bacteria is present on most farms; herds without disease likely become infected by bringing a pig with ileitis onto the farm
- Bacteria is unlikely to be spread to a negative herd by a visitor, however, visitor biosecurity is always important

Myco
(Mycoplasma hyopneumoniae)

Pig:

- In herds newly infected, most pigs have a severe cough and difficulty breathing, and many die
- In herds that have been affected for a long time, pigs have a cough, fever, decreased appetite, lower weight gain leading to a lot of variation in the size of the pigs in a pen
- Occurs all year but outbreaks often occur in the spring and fall with warm days and cold nights
- Grower/finisher pigs are most often affected but nursery and breeding-stock pigs can also be sick

Spread:

- Nose-to-nose contact between sick pigs and spreads through the air from coughing
- Mycoplasma lives in lungs for long periods of time and survives if kept moist
- Spread through the air up to 9 km in humid weather

Barn Control:

- Do not mix pigs from different farms
- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals Reduce overcrowding of pens and moving and mixing pigs
- Provide good air quality and reduce large daily changes in barn temperature

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Wear plastic/disposable over-boots in farm yard or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use
- If you enter the barn, wear farm boots and coveralls, and wash hands before leaving the barn

PED
(Porcine Epidemic Diarrhea)

Pig:

- Virus causes diarrhea and vomiting in all ages of pigs, high mortality (death losses) > 80 % in piglets < 3 weeks of age
- Spreads quickly among pigs; signs of sickness appear in 2 – 4 days
- All age groups are affected with high morbidity (sickness) for all pigs

Spread:

- Spread by fecal-oral route (manure to mouth); manure and anything touched by manure is a source of virus
- Year-round disease but most common in winter
- Virus is shed by infected pigs beginning at 2 days for up to 30 days

Barn Control:

- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals

Visitor Control: (Follow barn's protocol – below are suggested best practices)

If you are aware of a farm that has a clinical outbreak of PED

- Vehicles should go to this farm last in the day and last in the week
- Wear plastic/disposable over-boots in farm yard or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use. Do not step into the truck with boots that have touched the ground.
- Do not drive to another farm until the outside and cab of truck have been cleaned and disinfected
- Disinfection of truck: remove all visible organic material (manure, straw, feed), wash with water (hot if available) and a detergent, rinse, apply disinfectant, allow disinfectant contact time and then allow the truck to dry

WARNING: Do NOT enter the barn during a PED outbreak

– leave all deliveries/paperwork to this farm in an alternative location

PRRS (Porcine reproductive and respiratory syndrome)

Pig:

- Virus causes reproductive losses and respiratory disease resulting in slow growth
- All age groups affected: off feed, fever, depressed, breathing problems and death losses are higher than expected
- Lower weight gain leading to a lot of variation in the size of the pigs (particularly older ones) in a pen

Spread:

- Virus is shed from nose and mouth (sneezing and coughing), blood, urine, sow's milk, manure, and semen
- Virus can be spread on fomites (objects) such as bags, boxes, boots and coveralls
- Birds, rodents, mosquitoes and flies can also spread virus
- Virus can live in stored manure and it survives for a long time when cold or frozen such as in frozen carcasses

Barn Control:

- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Do not mix pigs from different farms

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Wear plastic/disposable over-boots in farm yard or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use. Do not step into the truck with boots that have touched the ground.
- Clean, disinfect and dry vehicles that have been on a farm with active PRRS virus
- If you are aware of a herd with a new PRRS virus outbreak, vehicles should go to this farm last in the day and last in the week

WARNING: Do NOT enter the barn during a PRRS disease outbreak

– leave all deliveries/paperwork to this farm in an alternative location

Salmonella

Pig:

- Two types of Salmonella – one causes diarrhea and the other causes an infection throughout the body
- Sickness most common in grower/finisher pigs
- Pigs shed salmonella in manure when sick but also sometimes shed it when they are healthy

Spread:

- Spread by fecal-oral route (manure to mouth)
- Salmonella will be shed when pigs are trucked, overcrowded, or exposed to seasonal weather changes
- Bacteria survives in manure for long time periods and in swine barns for weeks
- Bacteria also spread on fomites (objects) such as boots and coveralls, contaminated water, and contaminated feed
- Other livestock, poultry, rodents and wild birds can spread salmonella to pig barns and can contaminate pig feed both at the feed plant and at the pig farm

Barn Control:

- Control rodents and bird access on farms and at feed mills to reduce this source contamination of feed and farms
- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Reduce overcrowding of pens and also moving and mixing pigs
- Reduce large daily changes in barn temperature

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Wear plastic/disposable over-boots on-farm or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use to prevent spreading between farms
- Disinfection of truck: remove all visible organic material (manure, straw, feed), wash with water (hot if available) and a detergent, rinse, apply disinfectant, allow disinfectant contact time and then allow the truck to dry

Strep
(Streptococcus suis)

Pig:

- Typically affects nursery-age pigs but can be in both nursing and grower/finisher pigs
- Pigs experience a high fever, central nervous symptoms (unable to stand progressing to seizures); arthritis (lameness) and die suddenly with no signs of sickness
- Untreated pigs will die

Spread:

- Pigs pick up the bacteria from the birth canal of the sow
- Bacteria can also be spread by flies and on fomites (objects) such as boots and coveralls
- Outbreaks occur with large daily temperature changes, high barn humidity, mixing of pigs and overcrowding of pens

Barn Control:

- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Reduce overcrowding of pens
- Reduce large daily changes in barn temperature and reduce humidity

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Wear plastic/disposable over-boots in farm yard or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use
- If barn entry necessary, wear farm boots, coveralls and wash hands when leaving the barn
- Liquid soap deactivates the bacteria
- Disinfectants are very effective after thorough washing

Swine Dysentery

Pig:

- Bacteria causes diarrhea with blood and mucus, pigs go off feed, lose weight and may have high mortality (death losses)
- Most common in grower/finisher pigs, but can also affect nursery pigs and sows as well
- Typically in late summer and early fall but can be year round

Spread:

- Spread by fecal-oral route (manure to mouth)
- Pigs can be carriers for long periods (more than 90 days)
- Rodents, dogs and birds can become infected and spread the bacteria
- Bacteria lives in manure pits for several months and survives in moist manure in the barn for >60 days
- Carried from farm to farm with pigs, in manure, and on fomites (objects) such as boots, coveralls, and truck tires

Barn Control:

- Control rodents; keep dogs and birds out of barn
- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Drying and high temperatures (>37^{o}C) kills the bacteria within 24 hours

Visitor Control: (Follow barn's protocol – below are suggested best practices)

- Wear plastic/ disposable over-boots in farm yard or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use
- Disinfection of truck: remove all organic material (manure, straw, feed) wash with water (hot if available) and a detergent, rinse, apply disinfection, and then allow the truck to dry

WARNING: Do NOT enter the barn during a Swine Dysentery disease outbreak – leave all deliveries/paperwork to this farm in an alternative location

TGE (Transmissible Gastroenteritis Virus)

Pig:

- Virus causes diarrhea and vomiting in all ages of pigs
- High mortality (death losses) in piglets < 2 weeks old

Spread:

- Most common in winter
- Spreads rapidly pig-to-pig through bodily fluids
- Virus in manure, vomit and mucus
- Virus spreads quickly from farm-to-farm on fomites (objects) such as boots and coveralls

Barn Control:

- To control outbreaks: remove all animals from room/barn, carefully clean, disinfect and dry before bringing in new animals
- Control rodents and insects and do not allow birds or other animals in the barn

Visitor Control: (Follow barn's protocol – below are suggested best practices)

If you are aware of a farm that has an outbreak of TGE

- Vehicles going to farm should go last in the day and last in the week
- Wear plastic/disposable over-boots in farm yard or wear clean boots that can be enclosed in a bag to be cleaned, disinfected and dried prior to the next use
- Do not drive to another farm until outside and cab of truck has been cleaned and disinfected
- Disinfection of truck: remove all organic material (manure, straw, feed) with water, (hot if available) and a detergent, rinse, apply disinfection, allow disinfectant contact time, and then allow the truck to dry

WARNING: Do NOT enter the barn during a TGE disease outbreak
– leave all deliveries/paperwork to this farm in an alternative location

References

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