Lesson Plan

Biosecurity for Florida Producers

SART Training Media

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SART Training Media may be downloaded from the Florida SART Web site <www.flsart.org>.

Contents

About Florida SART

SART is a multiagency coordination group consisting of governmental and private entities dedicated to all-hazard disaster preparedness, planning, response, and recovery for the animal and agriculture sectors in the state of Florida.

SART operates at the local level through county SART organizations.

SART utilizes the skills and resources of many agencies, organizations and individuals with its multiagency coordination group structure.

SART supports the county, regional, and state emergency management efforts and incident management teams.

SART Mission

Empower Floridians through training and resource coordination to enhance all-hazard disaster planning and response for animals and agriculture.

SART Goals

- Promote the active engagement of each county coordinator who is responsible for animal and agricultural issues
- Provide assistance in the development and writing of county ESF-17 plans
- Promote the establishment of a county SART to work as a multiagency coordination group to support emergency management and incident management teams
- Provide training for all SART and animal and agriculture personnel
- Identify county resources available for an emergency or disaster
- Work to comply with the National Incident Management System (NIMS) document

Subject: **Biosecurity for the Florida Producer is crucial for developing effective prevention measures to preserve agriculture through an increased understanding of industry vulnerability, premises and worker security, animal protection, prevention activities, and emergency procedures.**

Introduction

This lesson plan, together with a workbook and PowerPoint presentation, form a unit entitled Bioseciruty for Florida Producers in the SART training curriculum. This lesson plan guides the instructor in delivering the educational portion of the workshop. For information on planning, organizing and publicizing the entire training event, consult the *Creating a County SART* Toolkit. The toolkit and other SART training materials are available on the Florida SART Web site: <www.flsart.org>.

Throughout the lesson plan, symbols in the margin indicate that a slide in the PowerPoint presentation is available for that section.

Approximately 60-70 minutes should be allocated for this program.

Session Outline

Part 1—Beginning the Workshop	5 minutes
Part 2—Learning Objectives and Importance	5 minutes
Part 3—Florida Agricultural Vulnerability	20 minutes
Part 4—Biosecurity Measures to Preserve Agriculture	20 minutes
Part 5—Highlight Key Resources	10 minutes
Part 6—Summary and Wrap-Up	5 minutes
Total	65 minutes

Learning Objectives

At the end of this unit, participants will be able to:

1. Discuss the vulnerability of Florida agriculture
2. Discuss agroterrorism
3. Explain biosecurity
4. Identify methods to ensure premises' security
5. Identify worker security and awareness
6. Identify methods to protect animals from exposure to disease or contamination
7. Discuss recommendations for personal sanitation
8. Describe equipment cleaning and disinfection procedures
9. Identify procedures to reduce potential for premises' contamination by movement of animals and visitors
10. Explain emergency procedures

Learning Environment/Aids

To complete this lesson plan, you will need:

- The PowerPoint presentation Biosecurity for Florida Producers
- Optional: a companion publication, Biosecurity for Florida Producers: Participant Workbook, is available. It contains copies of the PowerPoint slides and resource information

To conduct this training unit, you will need:

- A means to show the PowerPoint presentation: a computer with a projector. (Note: Master black and white copies of the slides are included at the end of this manual for use as a flipbook or, if you prefer, to make transparencies for use with an overhead projector.)
- Sufficient seating for all participants

Each participant will need:

- A pen or pencil
- Participant workbook or paper for notes

Before the Workshop

On the day of the workshop, check that all equipment needed is in place. Double-check that electronic media works on the equipment you have. Also, make certain that any materials for participants, such as paper, workbooks and pens/pencils, are available in sufficient numbers.

Part 1: Beginning the Workshop

Time: 5 minutes

Focus: Introducing the participants to the concept of biosecurity for Florida producers

SLIDES
1-3

Once all participants have taken their seats and have settled down, welcome them to the Biosecurity for Florida Producers workshop. Thank them for attending and congratulate them on taking the time to learn about this important issue regarding biosecurity on farms and ranches. Remind them that the best way to respond to an agricultural emergency situation is to have a foundation of knowledge on which to build.

During this introduction, you may choose to distribute the pre-test included in the manual. Make sure to explain to the participants that the pre-test is only meant to guide them; they will not be graded. Use of pre- and post-tests can help to evaluate how much knowledge participants gain during the session.

You may, depending on the size of the group, also choose to have participants introduce themselves, state their background, and why they are interested in this topic.

Part 2: Learning Objectives and Importance

Time: 5 minutes

Focus: Identify the learning objectives relating to biosecurity for Florida producers

SLIDES 4-5

This lesson plan can be used with agricultural and non-agricultural audiences.

Review the learning objectives with the participants. At the end of this training session, participants will be able to: discuss the vulnerability of Florida agriculture; discuss agroterrorism; explain biosecurity; identify methods to ensure premises security; identify worker security and awareness; identify methods to protect animals from exposure to disease or contamination; discuss recommendations for personal sanitation; describe equipment cleaning and disinfection procedures; identify procedures to reduce potential for contamination by movement of animals and visitors; and explain emergency procedures.

It is important to learn about biosecurity as it relates specifically to agriculture in Florida. There are many types of biosecurity issues that the US could face, but this unit will specifically focus on issues related to agriculture. Biosecurity is a newer buzz-word that is especially important to the entire animal/plant production chain. Any major disruption in this production chain would have enormous impact on the state, country, and world.

Remind participants that the reason they are attending the workshop is because they realize the value of being prepared by learning about biosecurity issues and having a disaster plan in place. Part of disaster planning is learning about appropriate issues in order to be able to successfully address them during emergencies. The information that they gain in this workshop will enhance their professional performance.

Part 3: Florida Agriculture's Vulnerability

Time: 20 minutes

Focus: Examine the vulnerability of the Florida agricultural industry to biosecurity threats including economic, borders, tourism, agroterrorism, agent availability, and animal populations

The next 15 slides will cover various important aspects of Florida's vulnerability to biosecurity threats. These concepts will help the audience understand why biosecurity for agricultural producers is an important topic that has direct implications to all aspects of our economy and society.

SLIDE 6

Biosecurity is a relatively new term that is used to refer to any activity that protects plants, animals or fish. A similar term is **agrosecurity** which refers to efforts to protect all aspects of food supply and production. So when we talk about biosecurity in an agricultural context, it refers to efforts to prevent the food supply from being harmed by intentional or unintentional introductions of pests or diseases. Obviously, farmers and ranchers have always been concerned with "biosecurity" issues, but since the terrorist attacks of 2001 – the bombing of the World Trade Center and the use of anthrax on several targets – the question of how secure our food production and supply systems are has become an important one to farmer and non-farmer alike.

The term agroterrorism is sometimes used to refer to intentional harmful acts of many kinds against the food production, processing, and distribution network. These acts could include biological agents, such as pests, diseases or toxins, and it could also refer to more conventional activities such as explosive devices, sabotage or toxic materials.

The term **bioterrorism** is used when talking about the use of biological agents such as pests or diseases against any target.

As a rule of thumb, **agroterrorism** refers to the target of an attack, and bioterrorism refers to the weapon used in an attack.

SLIDE 7

The agricultural industry is vital to Florida's economy. The United States and countries around the world rely on fruits, vegetables, and other agricultural commodities that are grown in Florida. Consumers also expect the food supply

to be safe. As indicated on this slide, food-borne diseases are an increasing concern across the globe.

- Florida's Agriculture is a 13 billion dollar/year industry. Agriculture is one of Florida's largest industries, and contributes to the US economy. Any large biosecurity problem in Florida would cause a ripple effect throughout many industries.
- Recent unintentional human E. Coli outbreaks traced to crop farms in California illustrate the potential for intentional contamination to impact consumers as well as the agricultural economy.
- The safety of the food supply has to begin at its source. Food safety must be ensured throughout the entire chain from production all the way to consumption by the end user.

SLIDE 8

The geographic location of Florida increases the potential for an entry of disease or an agroterrorism event. Florida has been called an agricultural "Sentinel State" because it could be a likely target for a foreign animal or plant disease introduction or agroterrorism event. Many of the characteristics regarding Florida make it an ideal candidate for either intentional or unintentional introduction.

SLIDES 9-10

When you consider the uniqueness of Florida's geography, it becomes clear why it is vulnerable. The state is a peninsula into the Atlantic Ocean. The climate is moderate, and many people enjoy visiting the state. Florida also has multiple commercial sea and air points of entry.

- 14 major seaports
- 131 public airports
- 20 commercial airports, with 13 handling international flights
- Over 75,000,000 tourists visit Florida each year --- Florida's climate and tourist attractions make the state popular with both domestic and international visitors each year.
- 6,000,000 of them arrive from foreign countries

SLIDE 11

It is important to understand what agroterrorism is and how disease agents can be used to impact the food supply, the health of Florida's citizens (through diseases that affect man and animals), and the economy.

Agroterrorism is defined as "When any person knowingly or maliciously uses biological or chemical agents as weapons against the agriculture industry and food supply".

SLIDES
12-13

The global availability of both naturally occurring and man-made agents is very high. The United States has been fortunate not to be affected by many animal diseases that are found in other parts of the world. The prevalence of naturally occurring outbreaks makes it easier to obtain these disease agents. The diligence of federal and state regulatory agencies has been effective in keeping many diseases out. The following examples illustrate the challenge:

- Foot-and-mouth Disease (FMD) is in 25+ countries.
- Hog Cholera, Avian Influenza (Bird Flu), and Exotic Newcastle Disease (END) are widespread.
- Animal disease agents can be produced, multiplied, or delivered without sophisticated equipment.
- Agents that can be created, introduced, and/or transmitted by people pose a significant risk. These can include the following types of disease:
  1. Anthrax
  2. Foot-and-Mouth Disease (FMD)
  3. Food-borne bacteria, such as E. Coli, and Salmonella

There are many disease agents that are considered of interest to those who would intend to harm the United States. The Department of Homeland Security maintains a very informative Web site at: http://www.dhs.gov/index.shtm.

LEARNING ACTIVITY

REAL LIFE STORY – You may want to examine the recent case of Alexander Litvinenko in England. Litvinenko was a former KGB agent living in London who became ill suddenly and died within a few days of a mysterious ailment. It was found that he had been poisoned with an extremely rare radioactive substance called polonium-210. The radioactive poison was slipped into his tea and he consumed it. Although Litvinenko was the intended target of this poison, traces of polonium-210 were found scattered in several locations. Many people may have had minor exposures to this highly toxic material. This case demonstrates how easily a bioterrorist agent (or any biosecurity agent) can be delivered without knowing. It is believed that the polonium was brought from Russia and easily carried on a plane to London. This has very real parallels to agroterrorist activities and how easily an infectious agent can be introduced by those who may want to harm the agricultural industry.

Litvinenko autopsy will require extra precautions
By Dan Vergano
USA TODAY, December 1, 2006

"Just like everything else in the mysterious death of former Russian spy Alexander Litvinenko, even his autopsy will be unusual.

Polonium, the deadly radioactive element tied to Litvinenko's Nov. 23 [2006] death, complicates the process.

"Generally, it's not recommended that you autopsy radiation poisoning victims," says health physicist Andrew Karam of MJW Corp. in Buffalo, an author of National Council on Radiation Protection and Measurement guidelines on contaminated bodies. "You have to treat bodily fluids as potentially radioactive contaminants."

New Scientist magazine claims that pathologists will take special measures, including wearing full-body respirator suits, during the autopsy. "In a criminal investigation, (investigators) will be even more painstaking than usual, taking more samples and documentation," says health physicist Kelly Classic of the Mayo Clinic in Rochester, Minn.

Science writer John Emsley has calculated that, by weight, polonium is about a trillion times more toxic than cyanide. Eating or breathing less than one-thousandth of a gram typically causes death in 20 days, according to the Health Physics Society.

Polonium was discovered in 1898 by physicists Marie and Pierre Curie and named after Marie's native land of Poland. Her daughter, scientist Irène Joliot-Curie, died in 1956 of leukemia attributed to an explosion years earlier of a polonium capsule in her laboratory.

Just like uranium, radon and radium, polonium emits radioactive "alpha particles." Alpha particles are the "offensive lineman" of radioactive particles, Classic says, big and slow. "You don't want one to hit you, but they are not going very far." One-thousandth of a gram of polonium emits the same number of alpha particles as 5 grams of radium.

But polonium emits "wimpy" alpha particles, Karam says, easily blocked by skin or even a few inches of air. (For this reason, a sealed container's walls would screen the stuff from radiation detectors.) And that means it must be swallowed or inhaled to kill someone, its alpha emissions destroying tissues as it travels through the bloodstream.

Litvinenko, 43, died in the classic pattern of polonium poisoning: food poisoning symptoms followed by hair loss and a steep decline in white blood cells. The isotope in this case is polonium-210, which has a number of industrial uses and is one of the most deadly forms.

Health physicists view eating polonium as the most deadly route, Karam says. Slowly traveling through the intestine, its radioactivity would kill sensitive cells, spurring food poisoning symptoms. Polonium would then accumulate in the kidney and spleen over the next few days, causing weakness.

Finally, its arrival in the bone marrow would kill white blood cells. "Fairly nasty stuff," Karam says.

Investigators retracing the steps of Litvinenko and those who had contact with him have found traces of a radioactive substance in at least two British Airways jets. If that substance is polonium, its weak alpha emitters mean travelers face little risk, Karam says, "unless passengers were licking seats." Pregnant passengers faced no extra risks, he adds.

In theory, the polonium recovered from Litvinenko could offer clues to its origin, Classic says, either from a nuclear reactor or widely used industrial devices. "I doubt it will pinpoint one person though," she says.

"I am chagrined by one thing about the case," Karam says. A few years ago, he was approached by producers of the CSI television series to comment on a polonium-poisoning scenario. He told them it was too far-fetched.

"Now, it is all health physicists can talk about," he says."

Other related information to this case that has implications for any similar agroterrorism event:

- Steve Fowler, radiation specialist: "How much would that cost to have enough polonium-210 to kill Litvinenko in the quantities that they did? It's probably on the order of $2 million to $3 million. The scientist says it's at least a million times more deadly than cyanide, so if inhaled or swallowed, the most minute quantities of polonium-210 can be lethal. Its radioactive particles attack and annihilate the body's cells. Something about the size of a grain of salt should be enough to kill a person."

- While Scotland Yard has not made any official comments on this case, police and intelligence sources paint a detailed picture of how investigators

believe the murder happened: They think Lugovoi and his partner brought the polonium from Moscow to London. Whether in a liquid or carried as a fine powder, no airport security device could detect the radioactive poison. The fatal dose was secretly administered and the men returned to Moscow.

- When someone dies from a state-controlled substance, a substance that is manufactured in state controlled facilities, where does it come from?

- There was some collateral damage in the poisoning of Alexander Litvinenko. British health officials say about 130 people probably had direct contact with polonium-210 and that 16 of them got a dose large enough to slightly increase their risk of developing cancer.

How easy would it have been to target a livestock herd instead of a single person? What if this was a contagious disease? Many countries have stockpiles of infectious disease agents that are not secured by today's standards. Could terrorists steal or buy such agents? Could they deliver them? The real implications of this story should confirm the importance for biosecurity measures on every farm and ranch.

SLIDE 14

There is the very real potential that prohibited material from other countries can enter Florida. Six million foreign tourists visit Florida every year. Many try to bring food, snacks, or other prohibited material with them on their trip. Prohibited material includes meat and plant material that is federally prohibited from entering our country in order to prevent harmful pests, organisms, or disease from also entering our country. USDA-APHIS is charged with this crucial activity that has been ongoing for years. APHIS serves to facilitate safe international trade, monitor the health of animals presented at the border, and regulate the import and export of animals, animal products, and biologicals. Specific detailed information on animal and plant import issues can be found at: http://www.aphis.usda.gov/import_export/index.shtml

The United States has been successful in eradicating animal and plant disease in the past, and successful in preventing new disease from entering. Customs agents at international airports and seaports check incoming luggage for prohibited materials that are not allowed due to the potential for containing disease agents. Discovery of such prohibited materials are not uncommon to the agencies performing these searches.

On the left side of the slide, note how the meat product still has the hoof attached – Could this allow foreign animal diseases to enter the US if it was not properly sterilized? On the right is a picture of many food items confiscated at terminal entry points.

SLIDES 15-21

The next 7 slides will highlight specific animal husbandry activities in Florida. These are all examples of how Florida agriculture could be vulnerable to biosecurity threats. Not only does the state have an active animal husbandry industry but there is a large and well distributed wildlife population. Many animal diseases can be transmitted between wild and domestic animals.

In order to understand why agriculture is considered an attractive target to terrorists, one must realize the size of animal operations in Florida.

- **Poultry** --- Slide 14 illustrates a poultry operation. Poultry products, both meat and eggs, are in demand by the consumer. Florida has 26 million birds that contribute towards the state economy.
- **Beef Cattle** --- There are 1.5 million beef cattle in Florida. Florida's cattle operations are an important source of beef products for consumers both in Florida and the nation. Feedlots nationwide depend on Florida's cow-calf operations for animals that supply the food needs of our nation and the world. Slide 15 illustrates both a pasture and feed lot setting. Pastures may be easily accessed by any passerby, while feedlots are generally more secure, but animals are more confined and in close contact.
- **Dairy Cattle** --- There are 140,000 dairy cattle in the state. Fluid milk and other processed dairy products are important not only to the state economy, but also to the large consumer base in the state. Large metropolitan markets are supplied by the dairy industry. It seems simple but people need milk. Slide 16 shows a feed bunker on the left and a pasture feed area on the right.
- **Goats and Sheep** --- Florida has approximately 30,000 goats and 10,000 sheep. These numbers are increasing. With the number of persons moving to Florida from other countries, the demand for food other than beef and poultry is increasing.
- **Swine** --- There are 100,000 commercial hogs in Florida. Not only does Florida have commercial swine production, there is also an increasing population of feral swine. Both are food sources. The feral population also provides recreational income from hunting. Due to the free-ranging nature of feral swine and the frequency of coming into contact with commercial livestock, they represent a potential reservoir of domestic diseases such as brucellosis and pseudo-rabies. In the event a foreign animal disease, such as Foot-and-mouth disease, was introduced into the feral population, the potential for exposure

of the domestic animal population would be significant. Slide 18 shows a commercial operation on the left, and a feral pig on the right.

- **Horses** --- 350,000 horses reside in the state. Florida is home to a variety of equine interests, thoroughbreds, polo ponies, show horses, and performance horses, as well as backyard and ranch horses. The number of horses is on the increase. The interaction between horse owners and horses is high, creating a natural setting where the zoonotic transmission of disease should be a biosecurity concern.
- **Game Farms and Hunting Preserves** --- Florida also has a large population of captive Cervidae (deer and elk), both on private farms and zoos & wildlife parks. There are approximately 280 game farms and hunting preserves that maintain captive animals. Slide 20 shows elk on the left. Elk have historically been susceptible to certain diseases such as brain worm, forms of Chronic Wasting Disease (CWD), and others. Captive deer populations have been found to harbor CWD in other states, and have then transmitted the disease to the wild deer populations. The transport, sale, and interstate trafficking of game farm animals has shown to be a vector for disease transmission. It is difficult to control these movements, even though the industry is regulated by the state.

LEARNING ACTIVITY

REAL LIFE STORY – You may want to share this story as a recent example of how disease transmission can occur between wildlife and farm/zoo kept animals. It also demonstrates the importance of understanding the route of infection and the human consequences of an outbreak.

Bubonic fever, often known as bubonic plague or plague, is caused by the bacterium Yersinia pestis. The bubonic plague is endemic in many parts of the world and has swept through human populations and killed millions of people at several points in history. The first pandemic on record is the Plague of Justinian which came in two waves between the years 540 and 580. As many as 25 million people died. In the years 1347 to 1350, the "Black Death" killed an estimated 75 million people from southwest Asia through Europe and into England. A third major outbreak occurred in China and India beginning in 1855. Yersinia pestis is common in high dry areas of the world, such as the western United States, northern China, southwest Asia, and southwest Africa.

"DENVER (AP 5/22/07) - A capuchin monkey at the Denver Zoo has died of plague and officials are trying to prevent an epidemic [among the zoo animals

– Ed.] by isolating the primates and treating them with antibiotics.

Zoo officials learned late Friday that the 8-year-old animal that died Wednesday tested positive for the flea-borne disease, according to a zoo statement.

More than a dozen squirrels and at least one rabbit have been found dead of plague in the City Park area just east of downtown, which includes a golf course, the zoo and the Denver Museum of Nature and Science.

The monkey, which was acting lethargic, was found dead by a zookeeper. Zoo veterinarian Dr. David Kenny suspects the primate ate the carcass of an infected dead squirrel.

Plague is common in Colorado during this time of year, but it usually occurs in rural parts of the state, where it's sometimes discovered when entire prairie dog colonies die off.

"We see it every year in wild rodents," said state health department epidemiologist John Pape. "But it's uncommon circulating in tree squirrels in urban neighborhoods, including metro Denver."

No other animals, including the other 17 capuchins, have shown any signs of illness, but as a precaution the monkeys have been taken from their usual display and placed in a separate caged display for observations. The capuchins have also been given antibiotics as a preventive measure.

Kenny said zoo officials are considering other measures on how to better shield other animals from possible contact with squirrels.

"It's a first time occurrence at the zoo, as far as we know," said Kenny.

The chances that a human could be infected is considered minimal. Health department officials suspect the disease was brought into the city by a fox or coyote.

One form of the plague, bubonic, is believed to have been the "Black Death" that killed 25 million people in Europe during the Middle Ages."

A follow-up discussion should be held which focuses on some of the key points with an outbreak of this type. Consider these issues:

1. Where did the disease originate?

2. How was it transmitted?
3. How did the monkey contract the disease?
4. Who should be notified during the outbreak and when?
5. What was the size of the outbreak?
6. How can it be controlled?
7. Is it a zoonotic disease – Can humans contract it from animals?
8. How do you prevent the spread into the human population?
9. Can you eradicate it?
10. Was the disease eradicated in Europe from the Middle Ages?

If time permits you may want to turn this activity into a table-top exercise for the group. You could break the event into a timeline of events and ask what is known at each point and what should be done. As part of a table-top exercise, you may want to include other agency personnel who would be involved in a real world event. Highlight what roles they could play in a similar event. The Extension Disaster Education Network (EDEN) Web site has many activities that can be used in educational settings and can be found at: http://www.eden.lsu.edu/default.aspx

Part 4: Biosecurity Measures to Preserve Agriculture

Time: 20 minutes

Focus: Examine biosecurity measures including biosecurity resource groups, exposure prevention, biosecurity plans, security, animal exposure protection, sanitation/disinfection, visitor policies, premises' biosecurity, and emergency procedures

SLIDE 22

This section will cover biosecurity measures that can help to preserve the Florida agricultural industry including biosecurity resource groups, exposure prevention, biosecurity plans, security, animal exposure protection, sanitation/disinfection, visitor policies, premises' biosecurity, and emergency procedures.

Biosecurity measures are vital to protecting animal agriculture. Veterinarians from the United States who assisted with the 2001 Foot-and-mouth Disease (FMD) outbreak in Great Britain saw first-hand the impact of a major disease on the animal population and the livestock producers. This outbreak was devastating to the farm owners who had to witness the destruction of their life's work. It also had a gigantic economic impact on the entire national economy estimated at 2.4 to 4 billion Great Britain pounds (ca. 4.8 to 8 billion US dollars), equal to about 0.5% of total gross domestic product. The outbreak had two primary impacts: agriculture (800 million to 2.4 billion pounds, and tourism (2 to 3 billion pounds) (Source: BBC). Any similar event here in Florida or the United States would have a similar impact not only on the agricultural industry but on the general economy as well.

SLIDE 23

Biosecurity is defined as the security from the transmission of infectious disease, parasites and pests among livestock, poultry, wildlife and zoo animals.

The next 20 slides will relate to biosecurity measures that are critical in obtaining this security.

SLIDE 24

The formation of a **Biosecurity Resource Group** is a great first step in organizing and preparing for biosecurity measures. This group can include members from differing background because everyone involved in animal agriculture has a potential role in ensuring biosecurity. This group serves to identify issues that are possible threats to your operation, areas that you can address, items that can be instituted, and activities that will help the entire operation. Remember

SLIDE 24

that all members are responsible for the Biosecurity Plan (more on this later).

Members of this group could include the following:

- You and your family
- Manager
- Workers
- Veterinarian
- Nutritionist
- Extension specialist
- Suppliers
- Others

SLIDES 25-26

Reducing the risk is the key to biosecurity. Programs must reduce the risk of transferring disease agents, so ***exposure prevention is the key***.

Reducing risk involves pre-exposure prevention (vaccinations/immunizations) and preventing contacts with infectious agents or any agents that may cause food supply adulteration. If reducing the risk is the key, then many would want to know what a biosecurity plan should include. A biosecurity plan is based on the following 3 main concepts:

1. Increase animal's ability to resist disease.

   Vaccination – good, but not always the answer

2. Minimize contact that might result in disease.
3. Eliminate source of infectious agents.

   Could include other livestock, birds, insects, rodents, people, manure, soil, surface water (or water tanks), feed, and equipment.

SLIDE 27

Biosecurity plan development can begin by asking these questions:

- What are your concerns?
- What are the risk factors for these concerns?
- What management actions should be considered?
- How will this be monitored over time?

Meet with those on your Biosecurity Resource Group (see slide 23) to determine what diseases should concern your operation and develop a written plan to address these issues and effectively monitor them. This plan should be re-evaluated periodically – whenever a change needs to be made or at least annually.

SLIDES 28-29

Building and premises security should be considered when developing the Biosecurity Plan. The physical security of the building and grounds is a vital step in ensuring farm biosecurity. The following preventive steps can be very effective:

- It is best to have only one entry/exit road from the farm. That entrance should be clearly marked with signs and, for added security, should have a lockable gate with controlled gate access.
- Security lighting and perimeter fencing are important. An extra fence between a farm and the neighboring farm may help prevent nose-to-nose contact between animals and reduce disease transmission.
- The use of electronic security devices linked to an off-site security monitoring system should be considered.,These might include motion detectors around fertilizer and fuel tanks, door alarms on buildings, video cameras, and alarms.
- Critical storage areas such as the milk room and feed storage areas should be locked with a padlock when not in use and should have limited entry.
- The entry and discharge points of exterior liquid tanks (whether above or below ground) should be padlocked when not in use.
- All vehicles should be locked at night and whenever there is no one on the farm.
- All pesticide containers should be secured inside a locked building whether they are empty or full.
- All unused buildings should be locked.
- Local law enforcement should be asked to patrol the farm perimeter, if there are perceived threats.
- Establish a neighborhood watch program with your neighbors.
- Get to know your local emergency personnel. Inviting police and fire authorities to evaluate your property can save precious time in case of a real emergency.
- Computer files or data systems should have restricted access.
- Maintain good inventory records of equipment and chemicals such as fertil-

izers and pesticides, in case of theft, fire, flood, or agroterrorism.

- Restrict key use to locked buildings and equipment. Maintain records of who has keys.
- If new construction is contemplated, security should be considered in the design of the new facilities.

The reality is that, with the exception of a few commercial poultry operations, few farm operations have security satisfactory to prevent access to their premises by unauthorized persons.

SLIDE 30

Worker Security --- There are many measures the owner of a livestock operation can employ to empower workers to take an active role in increasing biosecurity on farm premises. It is not only the producer's livelihood at stake, but the worker's as well. The following worker security and awareness recommendations should be practiced by agricultural workers:

- Ask applicants for a resume of their qualifications and have them complete a job application.
- Perform background checks to establish a potential worker's qualifications and any criminal record.
- Train workers to recognize and report suspicious individuals or unusual activities, security breaches, suspicious materials or devices, and missing equipment.
- Train new workers to recognize disease signs in animals so they can report any signs of illness in the animals.
- Implement policies on appropriate personal protection equipment as dictated by management and required by law.
- Train workers properly in their jobs and procedures.
- Train workers in the emergency plan, their responsibilities under the plan, and review the plan periodically with them.

The workers are the lifeblood of any agricultural business and need to be included in the biosecurity activities. Not only will they feel like part of the team by being included, they will feel more valued, and will become better workers.

SLIDE 31

There are important actions you can take to help **protect animals from exposure to disease or contamination**. Animal infection or contamination can be either unintentional or deliberate. An animal can be incubating a transmittable disease but may not show any symptoms during the incubation period. The fol-

lowing guidelines should be followed to help maintain animal health:

- Learn the health history of purchased animals. Separate any new animals from the herd for 3 to 4 weeks after arrival on the farm to monitor their health before introducing them to the herd. Feed and handle these animals last. Test if necessary for diseases.
- Maintain a vaccination program and parasite control program for all animals.
- Maintain a closed herd if possible.
- Practice "all-in, all-out" farming. This means a group of animals is raised together and sent to slaughter at the same time; the premises cleaned and disinfected; and then the next group of animals is brought in. This prevents mixing of various age groups and prevents the spread of disease pathogens.
- If animals are returning from a show, auction, or live bird show, they should be placed in quarantine for at least two weeks to one month before returning to the herd or the flock. A disease, such as Foot-and-mouth disease, may not produce any signs in cattle for five days or in pigs for 10 days.
- Know the signs of reportable and foreign animal diseases and report any unusual symptoms immediately to your veterinarian.
- Provide disposable boots or disinfectant footbaths for any visitors and make sure they use them. If disposable boots are used, provide a means of disposal on the farm.
- Provide accessible and functioning hand washing stations.
- Make sure the perimeter fencing is secure to prevent contact with livestock from neighboring farms.
- Limit direct contact of your animals with wildlife, including deer, birds, raccoons, coyotes, and rodents. Try to prevent your animals from sharing a common feed or water source with wildlife. Keep wildlife out of animal facilities and living spaces of the herd.
- Separate any obviously ill animals from the rest of the herd and handle these animals last. Call your veterinarian for appropriate testing and treatment.
- Remember dogs and cats can also carry diseases to livestock.
- Prevent organic matter from entering the animal facilities from sources such as vehicles, equipment, and runoff from other farms.
- Know the source and quality of purchased feeds.

- Do not feed table scraps, human food products, or garbage to farm animals.

SLIDE 32

Most of the emphasis thus far in the unit has focused on preventing disease introduction from outside the premises. **Internal animal health measures** are just as important with respect to limiting disease transmission within the animal population on the premises. The following are broad examples of what a biosecurity plan should include:

- Maintain a vaccination/parasite control program. These herd health plans should be reviewed annually with your veterinarian.
- Separate any obviously sick animals from the rest of the herd and contact your veterinarian for the appropriate treatment.
- Know the signs of reportable/foreign animal diseases and report any unusual signs to your veterinarian.
- Limit direct contact between livestock, wildlife, pets & pests.
  - -- Prevent sharing feed bunks or water sources from wildlife and pets.
  - -- Rodents and other forms of vermin and wildlife are very mobile and can spread disease agents. Don't ignore dogs, cats and poultry.

Reportable animal diseases are those that the state of Florida requires to be reported if they are found. All veterinarians and farm owners are required to report these. The rule on reportable diseases has been officially revised by the Florida Department of Agriculture and Consumer Services, Division of Animal Industry, effective September 19, 2005. These diseases are listed in Chapter 5C-20, FAC, entitled "Dangerous Transmissible Disease" and can be found at http://www.doacs.state.fl.us/ai/main/ani_diseases_main.shtml Reportable diseases range from those that are subject to program control measures, such as tuberculosis and equine infectious anemia, to diseases or pests that have been eradicated from Florida, such as bovine brucellosis and screwworm infestation. This disease listing also includes diseases never reported before in Florida or the United States, such as Rinderpest and African swine fever. In addition, any animal disease with unusually high morbidity or mortality that may be a foreign or emerging disease that could seriously impact the health of our animals, economy, or public health should also be reported.

SLIDES 33-34

Consideration should also be given to **preventing unintentional introduction of disease**. Many of these measures are both practical and effective. The following will also help to protect animals from exposure to disease and contamination:

- Ensure that adequate hand washing and boot cleaning/disinfection supplies

are available and monitor workers to ensure compliance with established protocol.

- Do not feed table scraps, human food products or garbage to farm animals.
- Reduce potential for runoff of water and organic material from adjacent livestock premises.
- Do not feed meat scraps to livestock. There are many reasons not to feed meat scraps to animals and FMD and BSE are two examples. Many more examples exist!

SLIDE 35

Personal Sanitation recommendations --- It is important to educate workers and ensure that they regularly comply with measures designed to safeguard the health of livestock and the wholesomeness of food products. The following measures can help to ensure proper sanitation:

- If possible, provide on-farm laundry facilities or furnish coveralls for use by workers, especially those with personal livestock
- Provide footbath and require personnel to use when entering and leaving animal areas
- Provide adequate facilities for hand washing and require workers to use them
- Provide disposable gloves for use by workers and insist they use them when treating sick animals or assisting with births
- Insist workers wash hands before milking dairy animals

SLIDE 35

Equipment cleaning and disinfection procedures can help to round out a good biosecurity plan. Cleaning and disinfecting both equipment and facilities will go a long way towards keeping animals healthy. Equipment includes farm vehicles, animal transportation, handling and veterinarian equipment.

- All manure and organic material must be removed before disinfectants will work.
- Do not lend or borrow equipment. If equipment must be loaned it must be cleaned and disinfected before it is returned.
- Clean and disinfect any equipment used on ill animals before use on healthy herd mates.
- Clean and disinfect dehorners, hoof knives, and clippers between animals.
- Use your own halters and clippers rather than borrowing them.

- Clean and disinfect nursing bottles and buckets after each feeding.

SLIDE 37

Visitor Policy --- Biosecurity of premises also involves monitoring public access. The purpose is not to prohibit visitors but to ensure that a responsible worker has taken proper measures to protect both the health of livestock and the interests of the owner of the premises. Visitors, salespeople, tourists, service personnel, and veterinarians can all serve as carriers to transmit disease. Visitor policy recommendations include:

- Require all visitors to the farm to check in with a designated farm representative.
- Maintain a record of visitors' names and companies, arrival and departure times, and the purposes of the visit
- Post signs indicating where visitors are to report and rules to be followed while on the farm.
- Limit access to areas of the property by designating a specific area for visitor parking, preferably on a concrete area with no access to livestock.
- Do not allow visitors to bring pets of any kind onto your property as they may carry diseases.
- Do not allow visitors, delivery personnel, or service support into the livestock areas or barns unless absolutely necessary.
- Restrict access to important areas, such as the milk room, fuel, pesticide, and fertilizer storage.
- Do not allow anyone onto the farm that has visited a farm in a foreign country within the past 7 days.
- Do not allow visitors to bring food onto the farm.

SLIDE 38

Premises' Entry/Exit --- Consider these recommendations to ensure that the same biosecurity measures are followed by visitors as by workers. It is important that your workers see that you apply biosecurity procedures consistently if you expect them to comply.

- Require delivery vehicles and visitors to use a controlled entry/exit point
- Ensure personnel are present to ensure that a record is kept on all persons visiting the premises
- Ensure that all vehicles have tires and undersurfaces cleaned and disinfected prior to entering and exiting the premises

- Prevent visitor and service vehicles from driving across feed delivery and manure removal routes whenever possible
- Park all vehicles away from livestock areas, preferably on concrete
- Provide a foot bath or disposable footwear for use by visitors exiting vehicles
- Locate holding pens for animal pickup/delivery away from barns and other livestock areas
- Ensure that livestock hauling vehicles are clean and well-bedded to prevent disease introduction and injury to livestock

SLIDES 39-41

Premises' Biosecurity --- Make a key contribution to biosecurity by practicing what you preach. Get into the routine of practicing good hygiene throughout your premises, including some items that seem obvious but can spell the difference between success and catastrophe. Get in the habit of:

- Bagging all refuse, trash, and contaminated clothing when leaving any premises
- Not hauling trash or garbage home from other farms/ranches
- Clean boots before and after working with animals
- Remove dirt, debris, and disinfect
- Clean and disinfect tires at your gate

The Florida Department of Agriculture and Consumer Service advises you not to "pack a pest" when you travel. What are you carrying home from your travels here at home or after visiting from other premises? Visit the Florida Department of Agriculture and Consumer Services Web site at: http://www.doacs.state.fl.us

SLIDE 42

Emergency Procedures --- Every business must plan for emergencies. Common threats include fires, storms, and power outages that can suddenly change the day-to-day operations of an agricultural business. It is no different with biosecurity emergencies. While not common, they are so serious that we must take them into consideration. An important biosecurity measure is to create an emergency preparedness plan. Basic emergency protocols should be developed and included in this plan so that they can be practiced before the unexpected occurs. The plan must be written, provided to each worker upon initial employment, with responsibilities clearly identified, and reviewed periodically with each worker. The plan must include:

- Evacuation plans for all buildings

- Chemical inventory and where the chemicals are located
- MSDS sheets maintained in central location
- Utility locations and procedures for shutting them off safely
- Worker procedures during an emergency
- Emergency contact information

In the unlikely event of a wide-scale bioterrorist attack, stay calm and stay informed by listening to the radio or television. Do not panic. Follow the directions provided by local, state, and/or federal emergency personnel who are reacting and responding to the situation. Avoid traveling to prevent spreading or contracting any infectious agents unless otherwise instructed.

SLIDE 43

Emergency Contact Information --- It is recommended that this information be posted on the premises, updated as necessary, and that all workers know who to call in your absence. It is often someone other than the farm owner calling in an emergency, therefore it is important for all workers to know what to do.

Emergency contact information should include:

- Local veterinarian _____ ___
- Local police department _____
- Local public health officials _____
- Florida Department of Agriculture and Consumer Services
- Animal Industry, State Veterinarian's Office, (850) 410-0900 [M-F, 8AM-5PM]
- Agricultural Law Enforcement (800) 342-5869 [24-hour reporting]
- Consumer Services Hotline (800) 320-0519 [24-hour reporting]
- Plant Industry (352) 372-3505 [M-F, 8AM-5PM]
- Agricultural and Environmental Services (850) 488-3731 [M-F, 8AM-5PM]
- Food Safety (850) 488-0295 [M-F, 8AM-5PM]
- Dairy Industry (850) 487-1450 [M-F, 8AM-5PM]
- Aquaculture (850) 488-4033 [M-F, 8AM-5PM]
- Standards (850) 488-0645 [M-F, 8AM-5PM]
- State Emergency Operations Center (800) 320-0519 [24-hour reporting]

- Florida Fish and Wildlife Conservation Commission (888) 404-3922 [24-hour reporting]
- USDA-APHIS Veterinary Services area office (352) 333-3120 [M-F, 8AM-5PM]
- Department of Health, Emergency Operations (850) 245-4045 [M-F, 8AM-5PM]
- Arson Alert Hotline (800) 342-5869 [24-hour reporting]
- Florida Department of Law Enforcement (850) 410-7645 [24-hour reporting]
- Federal Bureau of Investigation (Information current as of June 2007.)
  - Jacksonville (904) 721-1211 [24-hour reporting]
  - Miami (305) 944-9101 [24-hour reporting]
  - Tampa (813) 273-4566 [24-hour reporting]

Part 5: Highlight Resources

Time: 5 minutes

Focus: Identify key resources that participants can easily access for additional information

SLIDES 44-48

The following are sources of information, including agencies mentioned in this unit that may be helpful.

- Florida Department of Community Affairs, Div. of Emergency Management
  Web site: http://www.floridadisaster.org
- United States Department of Agriculture (USDA)
  Web site: http://www.usda.gov
- Florida Department of Agriculture and Consumer Services (FDACS)
  Web site: http://www.doacs.state.fl.us
- FDACS Division of Animal Industry
  Web site: http://www.doacs.state.fl.us/ai/
- USDA Animal and Plant Health Inspection Service (USDA-APHIS)
  Web site: http://www.aphis.usda.gov
- World Organisation for Animal Health (OIE)

Web site: http://www.oie.int

- APHIS Center for Emerging Issues (CEI) has various worksheets available on animal health and diseases of concern as well
  Web site: http://www.aphis.usda.gov/vs/ceah/cei/worksheets.htm
- University of Florida Institute of Food and Agricultural Sciences Extension publication resource (EDIS) offers many fact sheets for various veterinary and animal health
  Web sites: http://edis.ifas.ufl.edu/DEPARTMENT_VETERINARY_MEDICINE
  http://edis.ifas.ufl.edu/TOPIC_Livestock_by_Animal
  http://edis.ifas.ufl.edu/TOPIC_Livestock_Health_by_Animal
- The University of Florida IFAS Extension Disaster Handbook
  Web site: http://disaster.ifas.ufl.edu
- United States Animal Health Association (USAHA) web address and animal disease information links
  Web sites: http://www.usaha.org/index.shtml
  http://www.usaha.org/links.shtml#disease
- USDA-APHIS Veterinary Services division publication, "Animal Health Hazards of Concern During Natural Disasters," published in February 2002 is available at the following link. The goal of the publication is to "describe some of the natural disasters that have occurred in the U.S. during recent years and to review some infectious and noninfectious hazards that, at the very least, are perceived to be related directly to natural disasters."
  Web site: http://www.aphis.usda.gov/vs/ceah/cei/EmergingAnimalHealthIssues_files/hazards.PDF
- USDA-APHIS fact sheets for various animal diseases are available at the following Web address
  Web site: http://www.aphis.usda.gov/lpa/pubs/fsheet_faq_notice/fsfaqnot_animalhealth.html
- The Animal and Plant Health Inspection Service has veterinarians serving as Area Veterinarian's in Charge (AVICs) who are part of the chain to whom foreign animal diseases are reported. The list of all states' AVICs are found on the following Web site: http://www.aphis.usda.gov/vs/area_offices.htm
- State Veterinarian Office contact information for each state
  Web site: http://www.aphis.usda.gov/vs/sregs/official.html
- Saunders Comprehensive Veterinary Dictionary 2nd edition, written by D. C. Blood and V. P. Studdert. Published in 1999 by W. B. Saunders.
- Iowa State University Center for Food Security and Public Health
  Web site: http://www.cfsph.iastate.edu

Part 6: Summary and Wrap-Up

Time: 10 minutes

Focus: Review the learning objectives that have been accomplished and encourage a commitment to SART

SLIDE 49-50

You and your audience have had a stimulating and practical hour, but it is almost over. Prior to answering any audience questions or comments, provide a summary to the participants of what they just learned:

- What a foreign animal disease is
- How foreign animal diseases are introduced and consequences of the introduction
- Names and details of nine specific animal diseases
- The difficulty in diagnosing foreign animal diseases and who confirms diagnosis
- How to prevent disease spread and introduction
- Valuable resources available for more information

SLIDE 51

Thank the audience for their attention and participation. Congratulate them for their commitment to the SART endeavor and on their desire to be part of the solution.

At this point, you may elect to have the participants take the Post-Test provided in the Resources section of this lesson plan. Remember to review the answers to the test questions after all participants complete the test.

A content-specific Evaluation is provided in the Resources section of this lesson plan. The generic Evaluation available in the Toolkit for Planning a Community-Based SART Training Event can be utilized as well. As the presenter, you should decide which evaluation best meets the needs of your situation. Please have participants complete an evaluation at the conclusion of this unit. Encourage participants to be as honest and forthright as possible as it helps you, the presenter, make adjustments to future presentations.

Participant's Evaluation of *Biosecurity for Florida Producers*

Please circle the number that best expresses your opinions about the following statements.

		FULLY DISAGREE	DISAGREE	NEUTRAL	AGREE	FULLY AGREE
1.	The training unit's format was appropriate.	1	2	3	4	5
2.	The information presented was useful to me.	1	2	3	4	5
3.	The time it took to complete this unit was acceptable.	1	2	3	4	5
4.	The PowerPoint slides accurately presented the information.	1	2	3	4	5
5.	I can discuss the vulnerability of Florida agriculture.	1	2	3	4	5
6.	I can explain biosecurity.	1	2	3	4	5
7.	I can identify methods to ensure a premises' security.	1	2	3	4	5
8.	I can identify methods to protect animals from exposure to disease or contamination.	1	2	3	4	5
9.	I can describe procedures for cleaning and disinfecting equipment.	1	2	3	4	5
10.	I can explain emergency procedures.	1	2	3	4	5

11. We welcome your comments about this program:

_____

_____

_____

_____

_____

Please use the back of this sheet for any further comments.

Thank you for your time!

Biosecurity for Florida Producers Participant Pre-Test

This pre-test is intended to gauge the level of knowledge that you have before participating in the *Biosecurity for Florida Producers* training. Please answer all the following questions to the best of your ability.

1. Florida's _____ industry contributes 13 billion dollars per year to the state economy. This is one of the state's largest industries, and also contributes to the U.S. economy.

2. _____ is defined as "When any person knowingly or maliciously uses biological or chemical agents as weapons against the agriculture industry and food supply."

3. Name three factors that make Florida a prime target for agroterrorism:

   _____ _____ _____

4. Circle two items of prohibited material that are federally prohibited from entering our country in order to prevent introduction of harmful pests, organisms, or diseases.

   Meat Frozen orange juice Illegal drugs Plant material

5. _____ is defined as "The security from the transmission of infectious disease, parasites and pests among livestock, poultry, wildlife and zoo animals."

6. Name at least three individuals you should include in a Biosecurity Resource Group.

   _____ _____ _____

7. What is the key to biosecurity? _____

8. When considering security as part of an overall Biosecurity Plan for farm or business, it is best to have (Circle One): Multiple entrances/exits Single entrance/exit

9. Name two actions that the owner of a livestock operation can take to empower workers to take an active role in increasing premises' biosecurity.

   _____ _____

10. Name four important actions you can take to help protect animals from exposure to disease or contamination.

    _____ _____

    _____ _____

11. What is the definition of a Reportable Disease?

12. As part of Emergency Contact Information on the farm, who should know how to report an emergency when needed?

13. When disinfecting a vehicle after visiting a farm, what should be removed prior to the use of disinfectants on the vehicle?

    _____

Biosecurity for Florida Producers Participant Post-Test

This post-test is intended to gauge the level of knowledge that you have after participating in the *Biosecurity for Florida Producers* training. Please answer all the following questions to the best of your ability.

1. Florida's _____ industry contributes 13 billion dollars per year to the state economy. This is one of the state's largest industries, and also contributes to the U.S. economy.

2. _____ is defined as "When any person knowingly or maliciously uses biological or chemical agents as weapons against the agriculture industry and food supply."

3. Name three factors that make Florida a prime target for agroterrorism:

   _____ _____ _____

4. Circle two items of prohibited material that are federally prohibited from entering our country in order to prevent introduction of harmful pests, organisms, or diseases.

   Meat Frozen orange juice Illegal drugs Plant material

5. _____ is defined as "The security from the transmission of infectious disease, parasites and pests among livestock, poultry, wildlife and zoo animals."

6. Name at least three individuals you should include in a Biosecurity Resource Group.

   _____ _____ _____

7. What is the key to biosecurity? _____

8. When considering security as part of an overall Biosecurity Plan for farm or business, it is best to have (Circle One): Multiple entrances/exits Single entrance/exit

9. Name two actions that the owner of a livestock operation can take to empower workers to take an active role in increasing premises' biosecurity.

   _____ _____

10. Name four important actions you can take to help protect animals from exposure to disease or contamination.

    _____ _____

    _____ _____

11. What is the definition of a Reportable Disease?

12. As part of Emergency Contact Information on the farm, who should know how to report an emergency when needed?

13. When disinfecting a vehicle after visiting a farm, what should be removed prior to the use of disinfectants on the vehicle?

    _____

Answer Key to *Biosecurity for Florida Producers* Pre- and Post-Tests

1. Florida's Agricultural industry is a 13 billion dollar/yr industry. This is one of the largest in the state, and also contributes to the US economy. Any large biosecurity problem in Florida would cause a ripple effect throughout many industries.

2. Agroterrorism is defined as "When any person knowingly or maliciously uses biological or chemical agents as weapons against the agriculture industry and food supply".

3. Florida's unique geographic characteristics contribute to its vulnerability. The state is a peninsula in the Atlantic ocean. The climate is moderate, and many people enjoy visiting the state. Florida has multiple commercial sea and air points of entry.

   - 14 major seaports
   - 131 public airports
   - 20 commercial airports, with 13 handling international flights
   - Over 75,000,000 tourists visit Florida each year
   - Florida's climate and tourist attractions make the state popular with both domestic and international visitors each year.
   - 6,000,000 of them arrive from foreign countries

   The instructor can exercise sound judgment in accepting other answers that may have been discussed in class. Participants should be able to touch on the above subjects even if they do not remember the exact number within each category.

4. Prohibited Material includes meat and plant material that is federally prohibited from entering our country in order to prevent harmful pests, organisms, or disease from also entering our country. USDA-APHIS is charged with this crucial activity that has been on-going for years. APHIS serves to facilitate safe international trade, monitor the health of animals presented at the border, and regulate the import and export of animals, animal products, and biologicals.

5. Biosecurity is defined as the security from the transmission of infectious disease, parasites and pests among livestock, poultry, wildlife and zoo animals.

6. The formation of a Biosecurity Resource Group is a great first step in organizing and preparing for biosecurity measures. This group can include members from differing background because everyone involved in animal agriculture has a potential role in ensuring biosecurity. This group serves to identify issues that are possible threats to your operation, areas that you can address, items that can be instituted, and activities that will help the entire operation. Remember that all members are responsible for the

Biosecurity Plan. Members of this group could include the following: You and your family, Manager, Workers, Veterinarian, Nutritionist, Extension Specialist, Suppliers, Others.

7. Reducing the risk is the key to biosecurity. Programs must reduce the risk of transferring disease agents, so exposure prevention is the key. Reducing risk involves pre-exposure prevention (vaccinations/immunizations) and preventing contacts with infectious agents or any agents that may cause food supply adulteration.

8. It is best to have only one entry/exit road from the farm. That entrance should be clearly marked with signs and for added security should have a lockable gate with controlled gate access.

9. Worker Security - There are many measures the owner of a livestock operation can employ to empower workers to take an active role in increasing premises biosecurity. It is not only the producer's livelihood at stake, but the worker's as well. The following worker security and awareness recommendations should be practiced by agricultural employers:

    - Ask applicants for a resume of their qualifications and to complete a job application.
    - Perform background checks to establish a potential employee's qualifications and any criminal record.
    - Train workers to recognize and report suspicious individuals or unusual activities, security breaches, suspicious materials or devices, and missing equipment.
    - Train new workers to recognize disease signs in animals so they can report any signs of illness in the animals.
    - Implement policies on appropriate personal protection equipment as dictated by management and required by law.
    - Train workers properly in their jobs and procedures.
    - Train workers about the emergency plan, their responsibilities under the plan, and review it periodically with them.

    Use common sense when evaluating the responses and novel or other proven ideas may be acceptable. You may want to have a group discussion regarding this question at the end of the program including asking the group what they have done that was successful.

10. There are important actions you can take to help protect animals from exposure to disease or contamination. Animal infection or contamination can be either unintentional or deliberate. An animal can be incubating a transmittable disease but may not show any symptoms during the incubation period. The following guidelines should be followed to help maintain animal health:

    - Learn the health history of purchased animals. Separate any new animals from the herd for 3 to 4 weeks after arrival on the farm to monitor their health.

- Maintain a vaccination program and parasite control program for all animals.
- Maintain a closed herd if possible.
- Practice “all-in, all-out” farming.
- If animals are returning from a show, auction, or live bird show, they should be placed in quarantine for at least two weeks to one month.
- Know the signs of reportable and foreign animal diseases and report immediately.
- Provide disposable boots or disinfectant footbaths for any visitors.
- Provide accessible and functioning hand washing stations.
- Make sure the perimeter fencing is secure to prevent contact with livestock from neighboring farms.
- Limit direct contact of your animals with wildlife.
- Separate any obviously ill animals from the rest of the herd and handle these animals last. Call your veterinarian for appropriate testing and treatment.
- Remember dogs and cats can also carry diseases to livestock.
- Prevent organic matter from entering the animal facilities from sources such as vehicles, equipment, and runoff from other farms.
- Know the source and quality of purchased feeds.
- Do not feed table scraps, human food products, or garbage to farm animals.

11. Reportable animal diseases are those that the state of Florida requires to be reported if they are found. All veterinarians are required to report these as well as farm owners who may discover them. Reportable diseases range from those that are subject to program control measures, such as tuberculosis and equine infectious anemia, to diseases or pests that have been eradicated from Florida, such as bovine brucellosis and screwworm infestation.

12. It is recommended that Emergency Contact Information be posted on the premises, updated as necessary, and that all workers know who to call in your absence. It is often someone other than the farm owner who reports an emergency, therefore it is important for all workers to know what to do.

13. All manure and organic material must be removed before disinfectants will work on vehicles. The build-up of organic materials can block the disinfectant and will still allow an organism to survive.

PowerPoint Slides

Slides 1-6

Biosecurity for Florida Producers

Prepared by

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John R. Irby, DVM

Florida Department of Agriculture and Consumer Services,
Division of Animal Industry

The authors wish to acknowledge contributions to this presentation by the following organizations:

- Florida Department of Agriculture and Consumer Services (FDACS)
- Florida Fish & Wildlife Conservation Commission
- Florida State Agricultural Response Team
- University of Florida, IFAS Extension Service

State Agricultural Response Team 03

Learning Objectives 1

- Discuss the vulnerability of Florida Agriculture
- Discuss agroterrorism
- Explain biosecurity
- Identify methods to ensure premises' security
- Identify worker security and awareness
- Identify methods to protect animals from exposure to disease or contamination

State Agricultural Response Team 04

Learning Objectives 2

- Identify recommendation for personal sanitation
- Identify equipment cleaning and disinfection preocedures
- Identify procedures to reduce potential for premise contamination by movement of animals and visitors
- Identify emergency procedures

State Agricultural Response Team 05

What is biosecurity?

Agrosecurity means protecting the following from harmful acts – both intentional and unintentional:

- agricultural operations,
- the food processing industry,
- the food distribution system
- the hospitality industry

When talking about agriculture, ***biosecurity*** focuses on acts involving the introduction of pests or diseases.

State Agricultural Response Team 06

PowerPoint Slides

Slides 7-12

Florida's Agricultural Vulnerability

- Florida Agriculture is a 13 billion dollar a year industry
- Recent unintentional human *E. coli* outbreaks traced to California farms illustrate the potential for contamination by a bioterrorist act to impact the consumer as well as the agricultural economy
- The safety of the food supply has to begin at its source

State Agricultural Response Team 07

Florida's Agricultural Vulnerability

Florida has been called an agricultural sentinel state because if a foreign animal or plant disease introduction or agroterrorism event occurs in the United States . . .

. . . there is a good chance it will occur FIRST IN FLORIDA!

State Agricultural Response Team 08

Florida's Agricultural Vulnerability

Florida's borders are truly porous:

- 14 major seaports
- 131 public seaports
- 20 commercial airports (13 handle international flights)

State Agricultural Response Team 09

Florida's Agricultural Vulnerability

Over 75 million tourists visit Florida annually

6 million of these arrive from foreign countries

State Agricultural Response Team 10

Agroterrorism

When any person knowingly or maliciously uses

- biological agents
- chemical agents
- plant pathogens
- animal pathogens

as weapons against the agriculture industry or food supply.

State Agricultural Response Team 11

Florida's Agricultural Vulnerability

Global Availability

- Foot-and-mouth Disease in 25+ countries
- Hog Cholera, Avian Influenza and Exotic Newcastle Disease are widespread
- Animal disease agents can be produced or delivered without sophisticated equipment

State Agricultural Response Team 12

PowerPoint Slides

Slides 13-18

Florida's Agricultural Vulnerability

Agents that can be introduced, transmitted, and/or created by people pose a significant risk

- Anthrax
- Foot-and-mouth Disease
- Food-borne bacteria – *E. coli*, salmonella

Not limited to these organisms!

State Agricultural Response Team 13

Prohibited Materials Carry Contagens

High potential for prohibited materials entering Florida – gifts, souvenirs, food and other products

State Agricultural Response Team 14

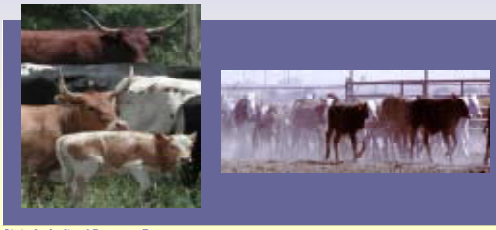
How Florida Is Vulnerable -- Animals

26 million poultry

State Agricultural Response Team 15

How Florida Is Vulnerable -- Animals

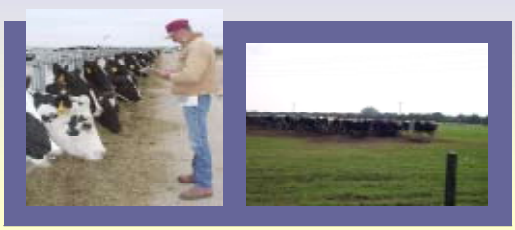
1.5 million beef cattle



State Agricultural Response Team 16

How Florida Is Vulnerable -- Animals

140,000 dairy cattle



State Agricultural Response Team 17

How Florida Is Vulnerable -- Animals

30,000 goats 10,000 sheep

State Agricultural Response Team 18

PowerPoint Slides

Slides 19-24

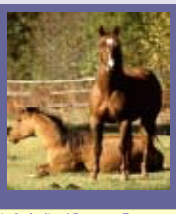
How Florida Is Vulnerable -- Animals

100,000 swine


State Agricultural Response Team 19

How Florida Is Vulnerable -- Animals

350,000 horses




State Agricultural Response Team 20

How Florida Is Vulnerable -- Animals

280 Game Farms and Hunting Preserves


State Agricultural Response Team 21

Biosecurity Measures. . .

. . . may seem drastic, but help preserve agriculture

State Agricultural Response Team 22

Definition of Biosecurity

Security from transmission of infectious disease, parasites, and pests among livestock, poultry, wildlife and zoo animals

State Agricultural Response Team 23

Your Biosecurity Resource Group?

- You (and your family)
- Foreman and workers
- Veterinarian
- Nutritionist
- Extension specialist
- Suppliers

All of you are responsible for your Biosecurity Plan

State Agricultural Response Team 24

PowerPoint Slides

Slides 25-30

The Biosecurity Key

Programs must reduce the risk of transferring disease agents, so. . .

Exposure Prevention Is the Key!

State Agricultural Response Team 25

If Reducing Risk Is the Key . . .

. . . What should a biosecurity plan include?

- Increase my animals' ability to resist disease
  - Vaccination
- Minimize contacts that might result in disease
- Eliminate sources of infectious agents
  - Other livestock, birds, insects, rodents, people, manure, soil, surface water (or water tanks), feed, and equipment

State Agricultural Response Team 26

In Developing Your Biosecurity Plan . . .

. . . Ask these questions:

- What are your disease concerns?
- What are the risk factors for these concerns?
- What management actions should be considered?
- How will this be monitored?

The plan must be written and practiced to be effective!

State Agricultural Response Team 27

Premise and Building Security

- Critical to ensuring farm biosecurity
- Perimeter fence (with appropriate signage)
- Only one entry/exit to property with lockable gate
- Critical storage areas should have limited access and be locked when not in use. (Lighted if appropriate)
- Establish neighborhood watch program
- Report any suspicious activity to law enforcement officials
- Maintain inventory of equipment and chemicals

State Agricultural Response Team 28

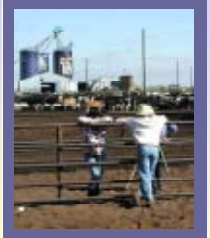
Premise and Building Security

Lock gates!

Protect feed and supplies from unintentional OR intentional contamination

State Agricultural Response Team 29

Worker Security and Awareness



- Pre-employment resume and background check
- Provide biosecurity awareness and personal protective equipment training and implementation policy
- Animal disease recognition training
- Job procedure training
- Train employees to recognize and report suspicious individuals or unusual acitivites
- Review emergency plan regularly

State Agricultural Response Team 30

PowerPoint Slides

Slides 31-36

Protect Animals from Exposure to Disease and Contamination

- Keep fences adjacent to livestock on neighboring premises in good repair
- Maintain closed herd if possible
- Purchase from sources with known herd health practices
- Isolate herd additions, including those returning from shows, for at least 2 weeks prior to allowing them to comingle with other animals to reduce potential for introducing a disease
- Know the source and quality of purchased feed and hay

Does Your Biosecurity Plan Include . . .

- Maintain a vaccination/parasite control program.
  - Review herd health plans annually with your DVM
- Separate any obviously sick animals from the rest of the herd and contact your veterinarian for the appropriate treatment.
- Know the signs of reportable/foreign animal diseases and report any unusual signs to your veterinarian.
- Limit direct contact between livestock, wildlife, pets, and pests.
  - Prevent wildlife and pets from sharing feed bunks or water sources.
  - Rodents, other vermin and wildlife are very mobile and can spread disease agents. Don't ignore dogs, cats, and poultry.

Other Considerations

- Ensure that adequate hand washing and boot cleaning/disinfection supplies are available and monitor workers to ensure compliance with established protocol
- Do not feed table scraps, human food products or garbage to farm animals
- Reduce potential for runoff of water and organize material from adjacent livestock premises

No meat scraps!

- Don't feed meat scraps to livestock!
- Don't risk introducing Foot-and-mouth Disease

Personal Sanitation

- If possible, provide on-farm laundry facilities or furnish coveralls for use by workers, especially those with personal livestock
- Provide foot bath and require personnel to use when entering and leaving animal areas
- Provide adequate facilities for hand washing and require workers to use them
- Provide disposable gloves for use by workers and insist they use them when treating sick animals or assisting with births
- Insist workers wash hands before milking dairy animals

Equipment Cleaning/Disinfection Procedures

- Equipment includes all farm vehicles, as well as animal transportation/handling and veterinary equipment
- Do not lend or borrow equipment. If it must be loaned or borrowed, clean and disinfect before and after each use
- All manure and organic material must be removed to make disinfection effective
- Clean/disinfect all equipment after each use, especially when used on sick animals

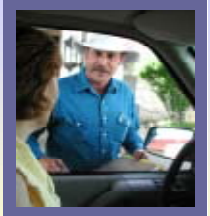
These tips will contribute greatly to keeping animals healthy!

PowerPoint Slides

Slides 37-42

Protect Your Animals from Disease and Contamination!

Visitor Policy



- Know your visitors!
- Have they been on other premises?
- Have they traveled internationally within the previous week?

State Agricultural Response Team 37

Protect Your Animals from Disease and Contamination!

Procedures for Premise Entry/Exit 1

- Require delivery vehicles and visitors to use a controlled entry/exit point
- Ensure premise personnel are present to ensure that a record is kept on all persons visiting the premise
- Ensure that all vehicles have tires and undersurfaces cleaned and disinfected prior to entering and exiting the premises
- Prevent visitor and service vehicles from driving across feed delivery and manure removal routes whenever possible

State Agricultural Response Team 38

Protect Your Animals from Disease and Contamination!

Procedures for Premise Entry/Exit 2

- Park all vehicles away from livestock areas, preferably concrete
- Provide a foot bath or disposable footwear for use by visitors exiting vehicles
- Locate holding pens for animal pickup/delivery away from barns and other livestock areas
- Ensure that livestock hauling vehicles are clean and well-bedded to prevent disease introduction and injury to livestock

State Agricultural Response Team 39

Protect Your Animals from Disease and Contamination!

Premise Biosecurity

- Don't haul trash or garbage from other ranches!
- Bag all refuse, trash and contaminated clothing when leaving any premises.

State Agricultural Response Team 40

Protect Your Animals from Disease and Contamination!

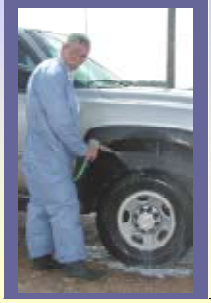
Premise Biosecurity

- Clean boots BEFORE and AFTER working animals!
- Remove dirt, debris.
- Disinfect!

State Agricultural Response Team 41

Protect Your Animals from Disease and Contamination!

Premise Biosecurity



- Don't carry disease home!
- Clean and disinfect tires at YOUR gate . . .
- Reduce the risk of disease!

State Agricultural Response Team 42

PowerPoint Slides

Slides 43-48

Protect Your Animals from Disease and Contamination!

Emergency Procedures

- Must be written, provided upon initial employment, responsibilities clearly identified, and reviewed periodically with each worker
- Evacuation plans for all buildings
- Utility locations and procedures for shutting down
- Worker procedures during an emergency
- Emergency contact information

State Agricultural Response Team 43

Some Florida Resources

In case of an outbreak, first contact the state or federal Department of Agriculture.

- FDACS, Division of Animal Industry [Link]
- Florida Dept. of Agriculture and Consumer Services (FDACS) [Link]
- Florida Animal Disease Control [Link]
- Florida Dept. of Community Affairs, Div. of Emergency Management [Link]
- Florida Reportable Animal Diseases [Link]

State Agricultural Response Team 44

Biosecurity Resources

- CDC/USDA - Overview of Biosecurity and Avian Overview of Biosecurity and Avian Influenza. PowerPoint PDF [Link]
- Homeland Security [Link]
- EDEN Homeland Security Plant Biosecurity course (Purdue) [Link]
- Preparing for an AgroTerrorism Event [Link]
- Protecting Farms – AgroSecurity Principles [Link]

State Agricultural Response Team 45

Specific Disease Issues

- CDC – Control of Avian Influenza in Poultry [Link]
- Foot and Mouth Disease [Link]
- Shared Human-Animal Diseases [Link]
- Transmittable Animal Diseases [Link]
- Zoonosis – Animals Can Make You Sick [Link]

State Agricultural Response Team 46

Disaster Resources

- Caring for Livestock After Disaster. Scott Cotton and R. Ackerman, Colorado State University. 2006. [Link]
- Extension Disaster Education Network (EDEN) is a collaborative multi-state effort by Extension Services across the country to improve the delivery of services to citizens affected by disasters. [Link]
- Guidelines for the Development of a Local Animal Care Plan in Emergencies, Disasters, and Evacuations. Sebastian Heath, Ph.D., D.V.M., Purdue University, School of Veterinary Medicine

State Agricultural Response Team 47

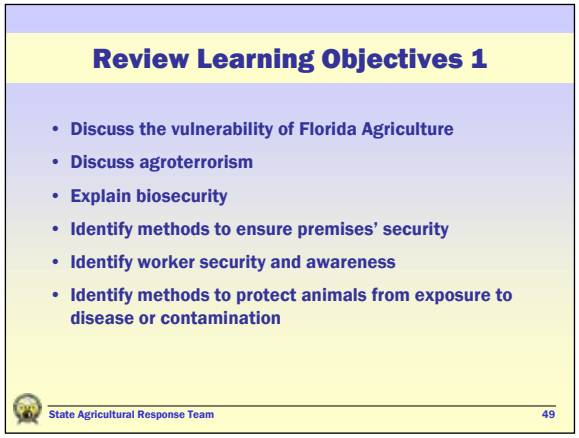
General Resources

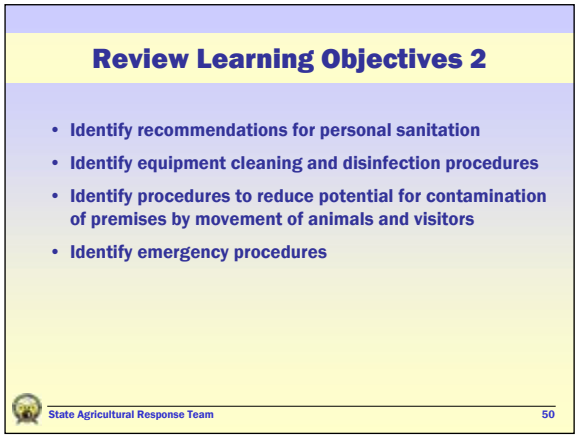
- U.S. State Veterinarian Offices [Link]
- Sunshine State Horse Council [Link]
- United States Dept. of Agriculture (USDA) [Link]
- University of Florida Institute for Food and Agricultural Sciences Extension publication resource (EDIS)
  - Veterinary Medicine [Link]
  - Specific Livestock Animals [Link]
- University of Florida IFAS Extension Disaster Handbook [Link]
- Animal Health Hazards of Concern During Natural Disasters (USDA-APHIS, Feb. 2002) [Link]
- World Organization for Animal Health (OIE) [Link]

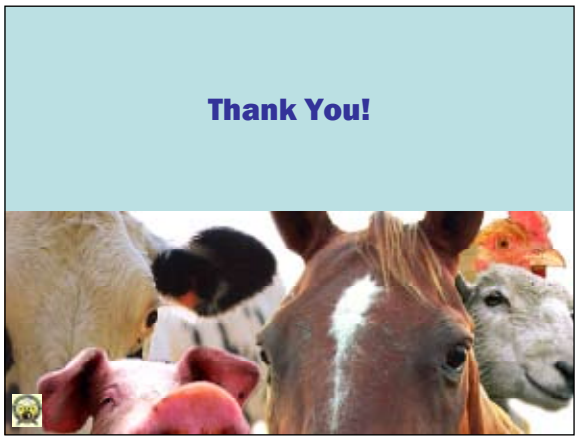
State Agricultural Response Team 48

PowerPoint Slides

Slides 49-51







PowerPoint Slides — Handout Pages

The *Biosecurity for Florida Producers* PowerPoint slides are reproduced on the following pages at reduced size with space for participant notes.

(Also included in the participant workbook for *Biosecurity for Florida Producers*, available on the SART Web site:

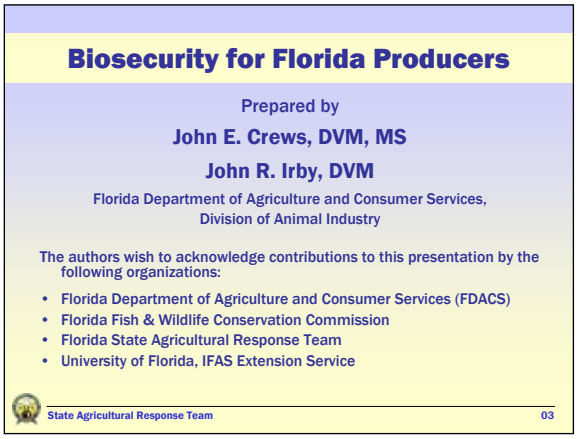
<www.flsart.org>

Notes

Slides 1-3


STATE AGRICULTURAL RESPONSE TEAM
S. A. R. T.
FLORIDA


Biosecurity for Florida Producers


Biosecurity for Florida Producers
Prepared by
John E. Crews, DVM, MS
John R. Irby, DVM
Florida Department of Agriculture and Consumer Services,
Division of Animal Industry
The authors wish to acknowledge contributions to this presentation by the following organizations:
• Florida Department of Agriculture and Consumer Services (FDACS)
• Florida Fish & Wildlife Conservation Commission
• Florida State Agricultural Response Team
• University of Florida, IFAS Extension Service
State Agricultural Response Team
03

Slides 4-6

Learning Objectives 1

- Discuss the vulnerability of Florida Agriculture
- Discuss agroterrorism
- Explain biosecurity
- Identify methods to ensure premises' security
- Identify worker security and awareness
- Identify methods to protect animals from exposure to disease or contamination

State Agricultural Response Team 04

Learning Objectives 2

- Identify recommendation for personal sanitation
- Identify equipment cleaning and disinfection preocedures
- Identify procedures to reduce potential for premise contamination by movement of animals and visitors
- Identify emergency procedures

State Agricultural Response Team 05

What is biosecurity?

Agrosecurity means protecting the following from harmful acts – both intentional and unintentional:

- agricultural operations,
- the food processing industry,
- the food distribution system
- the hospitality industry

When talking about agriculture, ***biosecurity*** focuses on acts involving the introduction of pests or diseases.

State Agricultural Response Team 06

Slides 7-9

Florida's Agricultural Vulnerability

- Florida Agriculture is a 13 billion dollar a year industry
- Recent unintentional human *E. coli* outbreaks traced to California farms illustrate the potential for contamination by a bioterrorist act to impact the consumer as well as the agricultural economy
- The safety of the food supply has to begin at its source

State Agricultural Response Team 07

Florida's Agricultural Vulnerability

Florida has been called an agricultural sentinel state because if a foreign animal or plant disease introduction or agroterrorism event occurs in the United States . . .

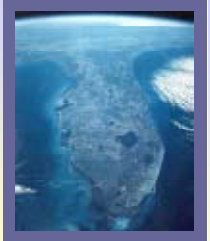
. . . there is a good chance it will occur FIRST IN FLORIDA!

State Agricultural Response Team 08

Florida's Agricultural Vulnerability

Florida's borders are truly porous:

- 14 major seaports
- 131 public seaports
- 20 commercial airports (13 handle international flights)



State Agricultural Response Team 09

Slides 10-12

Florida's Agricultural Vulnerability

Over 75 million tourists visit Florida annually

6 million of these arrive from foreign countries

State Agricultural Response Team 10

Agroterrorism

When any person knowingly or maliciously uses

- biological agents
- chemical agents
- plant pathogens
- animal pathogens

as weapons against the agriculture industry or food supply.

State Agricultural Response Team 11

Florida's Agricultural Vulnerability

Global Availability

- Foot-and-mouth Disease in 25+ countries
- Hog Cholera, Avian Influenza and Exotic Newcastle Disease are widespread
- Animal disease agents can be produced or delivered without sophisticated equipment

State Agricultural Response Team 12

Slides 13-15

Florida's Agricultural Vulnerability

Agents that can be introduced, transmitted, and/or created by people pose a significant risk

- Anthrax
- Foot-and-mouth Disease
- Food-borne bacteria – *E. coli*, salmonella

Not limited to these organisms!

State Agricultural Response Team 13

Prohibited Materials Carry Contagens

High potential for prohibited materials entering Florida – gifts, souvenirs, food and other products

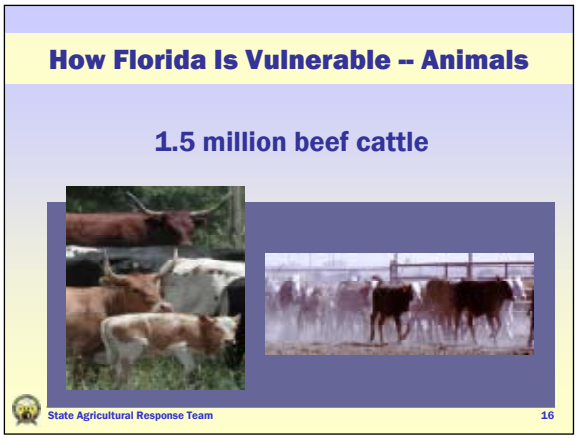
State Agricultural Response Team 14

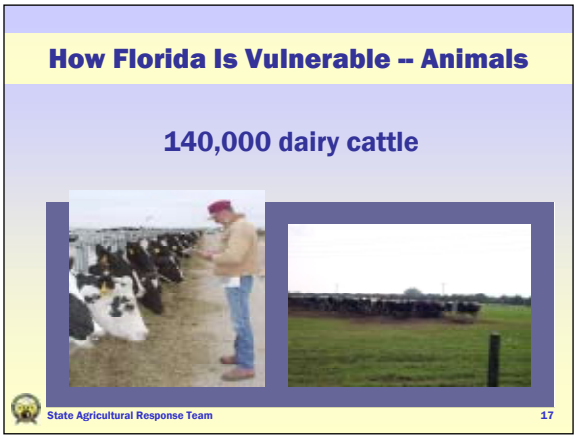
How Florida Is Vulnerable -- Animals

26 million poultry


State Agricultural Response Team 15

Slides 16-18


How Florida Is Vulnerable -- Animals
1.5 million beef cattle
State Agricultural Response Team
16


How Florida Is Vulnerable -- Animals
140,000 dairy cattle
State Agricultural Response Team
17


How Florida Is Vulnerable -- Animals
30,000 goats
10,000 sheep
State Agricultural Response Team
18

Slides 19-21

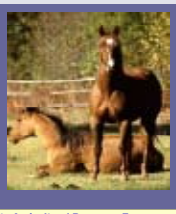
How Florida Is Vulnerable -- Animals

100,000 swine


State Agricultural Response Team 19

How Florida Is Vulnerable -- Animals

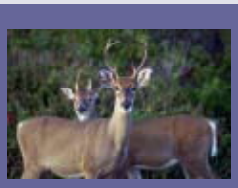
350,000 horses




State Agricultural Response Team 20

How Florida Is Vulnerable -- Animals

280 Game Farms and Hunting Preserves

State Agricultural Response Team 21

Slides 22-24

Biosecurity Measures. . .

. . . may seem drastic, but help preserve agriculture

State Agricultural Response Team 22

Definition of Biosecurity

Security from transmission of infectious disease, parasites, and pests among livestock, poultry, wildlife and zoo animals

State Agricultural Response Team 23

Your Biosecurity Resource Group?

- You (and your family)
- Foreman and workers
- Veterinarian
- Nutritionist
- Extension specialist
- Suppliers

All of you are responsible for your Biosecurity Plan

State Agricultural Response Team 24

Slides 25-27

The Biosecurity Key

Programs must reduce the risk of transferring disease agents, so. . .

Exposure Prevention Is the Key!

If Reducing Risk Is the Key . . .

. . . What should a biosecurity plan include?

- Increase my animals' ability to resist disease
  - Vaccination
- Minimize contacts that might result in disease
- Eliminate sources of infectious agents
  - Other livestock, birds, insects, rodents, people, manure, soil, surface water (or water tanks), feed, and equipment

In Developing Your Biosecurity Plan . . .

. . . Ask these questions:

- What are your disease concerns?
- What are the risk factors for these concerns?
- What management actions should be considered?
- How will this be monitored?

The plan must be written and practiced to be effective!

Slides 28-30

Premise and Building Security

- Critical to ensuring farm biosecurity
- Perimeter fence (with appropriate signage)
- Only one entry/exit to property with lockable gate
- Critical storage areas should have limited access and be locked when not in use. (Lighted if appropriate)
- Establish neighborhood watch program
- Report any suspicious activity to law enforcement officials
- Maintain inventory of equipment and chemicals

State Agricultural Response Team 28

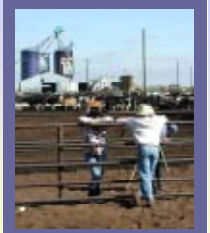
Premise and Building Security

Lock gates!

Protect feed and supplies from unintentional OR intentional contamination

State Agricultural Response Team 29

Worker Security and Awareness



- Pre-employment resume and background check
- Provide biosecurity awareness and personal protective equipment training and implementation policy
- Animal disease recognition training
- Job procedure training
- Train employees to recognize and report suspicious individuals or unusual acitivites
- Review emergency plan regularly

State Agricultural Response Team 30

Slides 31-33

Protect Animals from Exposure to Disease and Contamination

- Keep fences adjacent to livestock on neighboring premises in good repair
- Maintain closed herd if possible
- Purchase from sources with known herd health practices
- Isolate herd additions, including those returning from shows, for at least 2 weeks prior to allowing them to comingle with other animals to reduce potential for introducing a disease
- Know the source and quality of purchased feed and hay

State Agricultural Response Team 31

Protect Your Animals from Disease and Contamination!

Does Your Biosecurity Plan Include . . .

- Maintain a vaccination/parasite control program.
  - Review herd health plans annually with your DVM
- Separate any obviously sick animals from the rest of the herd and contact your veterinarian for the appropriate treatment.
- Know the signs of reportable/foreign animal diseases and report any unusual signs to your veterinarian.
- Limit direct contact between livestock, wildlife, pets, and pests.
  - Prevent wildlife and pets from sharing feed bunks or water sources.
  - Rodents, other vermin and wildlife are very mobile and can spread disease agents. Don't ignore dogs, cats, and poultry.

State Agricultural Response Team 32

Protect Your Animals from Disease and Contamination!

Other Considerations

- Ensure that adequate hand washing and boot cleaning/disinfection supplies are available and monitor workers to ensure compliance with established protocol
- Do not feed table scraps, human food products or garbage to farm animals
- Reduce potential for runoff of water and organize material from adjacent livestock premises

State Agricultural Response Team 33

Slides 34-36

Protect Your Animals from Disease and Contamination!

No meat scraps!

- Don't feed meat scraps to livestock!
- Don't risk introducing Foot-and-mouth Disease

State Agricultural Response Team 34

Protect Your Animals from Disease and Contamination!

Personal Sanitation

- If possible, provide on-farm laundry facilities or furnish coveralls for use by workers, especially those with personal livestock
- Provide foot bath and require personnel to use when entering and leaving animal areas
- Provide adequate facilities for hand washing and require workers to use them
- Provide disposable gloves for use by workers and insist they use them when treating sick animals or assisting with births
- Insist workers wash hands before milking dairy animals

State Agricultural Response Team 35

Protect Your Animals from Disease and Contamination!

Equipment Cleaning/Disinfection Procedures

- Equipment includes all farm vehicles, as well as animal transportation/handling and veterinary equipment
- Do not lend or borrow equipment. If it must be loaned or borrowed, clean and disinfect before and after each use
- All manure and organic material must be removed to make disinfection effective
- Clean/disinfect all equipment after each use, especially when used on sick animals

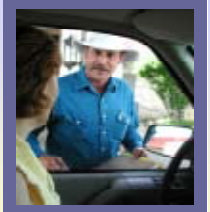
These tips will contribute greatly to keeping animals healthy!

State Agricultural Response Team 36

Slides 37-39

Protect Your Animals from Disease and Contamination!

Visitor Policy



- Know your visitors!
- Have they been on other premises?
- Have they traveled internationally within the previous week?

State Agricultural Response Team 37

Protect Your Animals from Disease and Contamination!

Procedures for Premise Entry/Exit 1

- Require delivery vehicles and visitors to use a controlled entry/exit point
- Ensure premise personnel are present to ensure that a record is kept on all persons visiting the premise
- Ensure that all vehicles have tires and undersurfaces cleaned and disinfected prior to entering and exiting the premises
- Prevent visitor and service vehicles from driving across feed delivery and manure removal routes whenever possible

State Agricultural Response Team 38

Protect Your Animals from Disease and Contamination!

Procedures for Premise Entry/Exit 2

- Park all vehicles away from livestock areas, preferably concrete
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- Locate holding pens for animal pickup/delivery away from barns and other livestock areas
- Ensure that livestock hauling vehicles are clean and well-bedded to prevent disease introduction and injury to livestock

State Agricultural Response Team 39

Slides 40-42

Protect Your Animals from Disease and Contamination!

Premise Biosecurity

- Don't haul trash or garbage from other ranches!
- Bag all refuse, trash and contaminated clothing when leaving any premises.

State Agricultural Response Team 40

Protect Your Animals from Disease and Contamination!

Premise Biosecurity

- Clean boots BEFORE and AFTER working animals!
- Remove dirt, debris.
- Disinfect!

State Agricultural Response Team 41

Protect Your Animals from Disease and Contamination!

Premise Biosecurity

- Don't carry disease home!
- Clean and disinfect tires at YOUR gate . . .
- Reduce the risk of disease!

State Agricultural Response Team 42

Slides 43-45

Protect Your Animals from Disease and Contamination!

Emergency Procedures

- Must be written, provided upon initial employment, responsibilities clearly identified, and reviewed periodically with each worker
- Evacuation plans for all buildings
- Utility locations and procedures for shutting down
- Worker procedures during an emergency
- Emergency contact information

State Agricultural Response Team 43

Some Florida Resources

In case of an outbreak, first contact the state or federal Department of Agriculture.

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State Agricultural Response Team 44

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Slides 46-48

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State Agricultural Response Team 46

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- Guidelines for the Development of a Local Animal Care Plan in Emergencies, Disasters, and Evacuations. Sebastian Heath, Ph.D., D.V.M., Purdue University, School of Veterinary Medicine


State Agricultural Response Team 47

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- U.S. State Veterinarian Offices [Link]
- Sunshine State Horse Council [Link]
- United States Dept. of Agriculture (USDA) [Link]
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- Animal Health Hazards of Concern During Natural Disasters (USDA-APHIS, Feb. 2002) [Link]
- World Organization for Animal Health (OIE) [Link]


State Agricultural Response Team 48

Slides 49-51

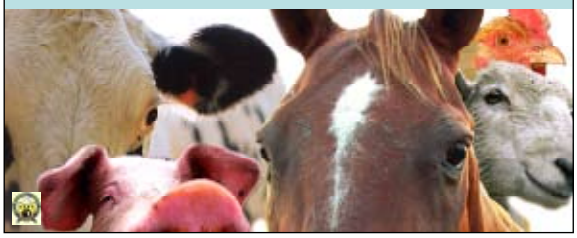
Review Learning Objectives 1

- Discuss the vulnerability of Florida Agriculture
- Discuss agroterrorism
- Explain biosecurity
- Identify methods to ensure premises' security
- Identify worker security and awareness
- Identify methods to protect animals from exposure to disease or contamination

Review Learning Objectives 2

- Identify recommendations for personal sanitation
- Identify equipment cleaning and disinfection procedures
- Identify procedures to reduce potential for contamination of premises by movement of animals and visitors
- Identify emergency procedures

Thank You!



Notes

PowerPoint Slides

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STATE AGRICULTURAL RESPONSE TEAM
S. A. R. T.
FLORIDA

Biosecurity for Florida Producers

Biosecurity for Florida Producers

Prepared by

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Learning Objectives 1

- Discuss the vulnerability of Florida Agriculture
- Discuss agroterrorism
- Explain biosecurity
- Identify methods to ensure premises' security
- Identify worker security and awareness
- Identify methods to protect animals from exposure to disease or contamination

Learning Objectives 2

- Identify recommendation for personal sanitation
- Identify equipment cleaning and disinfection preocedures
- Identify procedures to reduce potential for premise contamination by movement of animals and visitors
- Identify emergency procedures

What is biosecurity?

Agrosecurity means protecting the following from harmful acts – both intentional and unintentional:

- agricultural operations,
- the food processing industry,
- the food distribution system
- the hospitality industry

When talking about agriculture, ***biosecurity*** focuses on acts involving the introduction of pests or diseases.

Florida's Agricultural Vulnerability

- Florida Agriculture is a 13 billion dollar a year industry
- Recent unintentional human *E. coli* outbreaks traced to California farms illustrate the potential for contamination by a bioterrorist act to impact the consumer as well as the agricultural economy
- The safety of the food supply has to begin at its source

Florida's Agricultural Vulnerability

Florida has been called an agricultural sentinel state because if a foreign animal or plant disease introduction or agroterrorism event occurs in the United States . . .

. . . there is a good chance it will occur

FIRST IN FLORIDA!

Florida's Agricultural Vulnerability

Florida's borders are truly porous:

- 14 major seaports
- 131 public seaports
- 20 commercial airports (13 handle international flights)

Florida's Agricultural Vulnerability

Over 75 million tourists visit Florida annually

6 million of these arrive from foreign countries

Agroterrorism

When any person knowingly or maliciously uses

- biological agents
- chemical agents
- plant pathogens
- animal pathogens

as weapons against the agriculture industry or food supply.

Florida's Agricultural Vulnerability

Global Availability

- Foot-and-mouth Disease in 25+ countries
- Hog Cholera, Avian Influenza and Exotic Newcastle Disease are widespread
- Animal disease agents can be produced or delivered without sophisticated equipment

Florida's Agricultural Vulnerability

Agents that can be introduced, transmitted, and/or created by people pose a significant risk

- **Anthrax**
- **Foot-and-mouth Disease**
- **Food-borne bacteria – *E. coli*, salmonella**

Not limited to these organisms!

Prohibited Materials Carry Contagens

High potential for prohibited materials entering Florida – gifts, souvenirs, food and other products

How Florida Is Vulnerable -- Animals

26 million poultry

How Florida Is Vulnerable -- Animals

1.5 million beef cattle

How Florida Is Vulnerable -- Animals

140,000 dairy cattle

How Florida Is Vulnerable -- Animals

30,000 goats

10,000 sheep

How Florida Is Vulnerable -- Animals

100,000 swine

How Florida Is Vulnerable -- Animals

350,000 horses

How Florida Is Vulnerable -- Animals

280 Game Farms and Hunting Preserves

Biosecurity Measures. . .

. . . may seem drastic, but help preserve agriculture

Definition of Biosecurity

Security from transmission of infectious disease, parasites, and pests among livestock, poultry, wildlife and zoo animals

Your Biosecurity Resource Group?

- You (and your family)
- Foreman and workers
- Veterinarian
- Nutritionist
- Extension specialist
- Suppliers

All of you are responsible for your Biosecurity Plan

The Biosecurity Key

Programs must reduce the risk of transferring disease agents, so. . .

Exposure Prevention Is the Key!

If Reducing Risk Is the Key . . .

. . . What should a biosecurity plan include?

- Increase my animals' ability to resist disease
  - Vaccination
- Minimize contacts that might result in disease
- Eliminate sources of infectious agents
  - Other livestock, birds, insects, rodents, people, manure, soil, surface water (or water tanks), feed, and equipment

In Developing Your Biosecurity Plan . . .

. . . Ask these questions:

- What are your disease concerns?
- What are the risk factors for these concerns?
- What management actions should be considered?
- How will this be monitored?

The plan must be written and practiced to be effective!

Premise and Building Security

- Critical to ensuring farm biosecurity
- Perimeter fence (with appropriate signage)
- Only one entry/exit to property with lockable gate
- Critical storage areas should have limited access and be locked when not in use. (Lighted if appropriate)
- Establish neighborhood watch program
- Report any suspicious activity to law enforcement officials
- Maintain inventory of equipment and chemicals

Premise and Building Security

Lock gates!

Protect feed and supplies from unintentional OR intentional contamination

Worker Security and Awareness

- Pre-employment resume and background check
- Provide biosecurity awareness and personal protective equipment training and implementation policy
- Animal disease recognition training
- Job procedure training
- Train employees to recognize and report suspicious individuals or unusual acitivites
- Review emergency plan regularly

Protect Animals from Exposure to Disease and Contamination

- Keep fences adjacent to livestock on neighboring premises in good repair
- Maintain closed herd if possible
- Purchase from sources with known herd health practices
- Isolate herd additions, including those returning from shows, for at least 2 weeks prior to allowing them to comingle with other animals to reduce potential for introducing a disease
- Know the source and quality of purchased feed and hay

Does Your Biosecurity Plan Include . . .

- Maintain a vaccination/parasite control program.
  - Review herd health plans annually with your DVM
- Separate any obviously sick animals from the rest of the herd and contact your veterinarian for the appropriate treatment.
- Know the signs of reportable/foreign animal diseases and report any unusual signs to your veterinarian.
- Limit direct contact between livestock, wildlife, pets, and pests.
  - Prevent wildlife and pets from sharing feed bunks or water sources.
  - Rodents, other vermin and wildlife are very mobile and can spread disease agents. Don't ignore dogs, cats, and poultry.

Other Considerations

- Ensure that adequate hand washing and boot cleaning/disinfection supplies are available and monitor workers to ensure compliance with established protocol
- Do not feed table scraps, human food products or garbage to farm animals
- Reduce potential for runoff of water and organize material from adjacent livestock premises

No meat scraps!

- Don't feed meat scraps to livestock!
- Don't risk introducing Foot-and-mouth Disease

Personal Sanitation

- If possible, provide on-farm laundry facilities or furnish coveralls for use by workers, especially those with personal livestock
- Provide foot bath and require personnel to use when entering and leaving animal areas
- Provide adequate facilities for hand washing and require workers to use them
- Provide disposable gloves for use by workers and insist they use them when treating sick animals or assisting with births
- Insist workers wash hands before milking dairy animals

Equipment Cleaning/Disinfection Procedures

- Equipment includes all farm vehicles, as well as animal transportation/handling and veterinary equipment
- Do not lend or borrow equipment. If it must be loaned or borrowed, clean and disinfect before and after each use
- All manure and organic material must be removed to make disinfection effective
- Clean/disinfect all equipment after each use, especially when used on sick animals

These tips will contribute greatly to keeping animals healthy!

Visitor Policy

- Know your visitors!
- Have they been on other premises?
- Have they traveled internationally within the previous week?

Procedures for Premise Entry/Exit 1

- Require delivery vehicles and visitors to use a controlled entry/exit point
- Ensure premise personnel are present to ensure that a record is kept on all persons visiting the premise
- Ensure that all vehicles have tires and undersurfaces cleaned and disinfected prior to entering and exiting the premises
- Prevent visitor and service vehicles from driving across feed delivery and manure removal routes whenever possible

Procedures for Premise Entry/Exit 2

- Park all vehicles away from livestock areas, preferably concrete
- Provide a foot bath or disposable footwear for use by visitors exiting vehicles
- Locate holding pens for animal pickup/delivery away from barns and other livestock areas
- Ensure that livestock hauling vehicles are clean and well-bedded to prevent disease introduction and injury to livestock

Premise Biosecurity

- Don’t haul trash or garbage from other ranches!
- Bag all refuse, trash and contaminated clothing when leaving any premises.

Premise Biosecurity

- Clean boots BEFORE and AFTER working animals!
- Remove dirt, debris.
- Disinfect!

Premise Biosecurity

- Don’t carry disease home!
- Clean and disinfect tires at YOUR gate . . .
- Reduce the risk of disease!

Emergency Procedures

- Must be written, provided upon initial employment, responsibilities clearly identified, and reviewed periodically with each worker
- Evacuation plans for all buildings
- Utility locations and procedures for shutting down
- Worker procedures during an emergency
- Emergency contact information

Some Florida Resources

In case of an outbreak, first contact the state or federal Department of Agriculture.

- FDACS, Division of Animal Industry [Link]
- Florida Dept. of Agriculture and Consumer Services (FDACS) [Link]
- Florida Animal Disease Control [Link]
- Florida Dept. of Community Affairs, Div. of Emergency Management [Link]
- Florida Reportable Animal Diseases [Link]

Biosecurity Resources

- CDC/USDA - Overview of Biosecurity and Avian Overview of Biosecurity and Avian Influenza. PowerPoint PDF [Link]
- Homeland Security [Link]
- EDEN Homeland Security Plant Biosecurity course (Purdue) [Link]
- Preparing for an AgroTerrorism Event [Link]
- Protecting Farms – AgroSecurity Principles [Link]

Specific Disease Issues

- CDC -- Control of Avian Influenza in Poultry [Link]
- Foot and Mouth Disease [Link]
- Shared Human-Animal Diseases [Link]
- Transmittable Animal Diseases [Link]
- Zoonosis – Animals Can Make You Sick [Link]

Disaster Resources

- Caring for Livestock After Disaster. Scott Cotton and R. Ackerman, Colorado State University. 2006. [Link]
- Extension Disaster Education Network (EDEN) is a collaborative multi-state effort by Extension Services across the country to improve the delivery of services to citizens affected by disasters. [Link]
- Guidelines for the Development of a Local Animal Care Plan in Emergencies, Disasters, and Evacuations. Sebastian Heath, Ph.D., D.V.M., Purdue University, School of Veterinary Medicine

General Resources

- U.S. State Veterinarian Offices [Link]
- Sunshine State Horse Council [Link]
- United States Dept. of Agriculture (USDA) [Link]
- University of Florida Institute for Food and Agricultural Sciences Extension publication resource (EDIS)
  - Veterinary Medicine [Link]
  - Specific Livestock Animals [Link]
- University of Florida IFAS Extension Disaster Handbook [Link]
- Animal Health Hazards of Concern During Natural Disasters (USDA-APHIS, Feb. 2002) [Link]
- World Organization for Animal Health (OIE) [Link]

Review Learning Objectives 1

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Thank You!