


Wildlife Management and Vector Control

During Livestock or Poultry Disease Outbreaks




Example FADs Arthropod Vectors

Disease	Relevant Wildlife			Domestic Livestock				Transmission Route						
	Bird	Feral Swine	Deer	Cattle	Horses	Pig	Poultry	Sheep/Goat	Direct Contact	Indirect/Fomites	Ingestion	Inhaled/Aerol	Vector-borne	Zoonotic
African swine fever													ticks	No
Avian influenza														Yes
Classical swine fever														No
Foot-and-mouth disease														No
Rift Valley fever													mosquitoes	Yes
Swine vesicular disease														Yes
Vesicular stomatitis													biting midges	Yes


Wildlife

- Free-ranging
- Native or feral
- Wildlife can
 - Be infected
 - Serve as a reservoir
 - Further spread pathogen
- Indicator of disease



Arthropod Vectors

- Living organism that carries disease agent between animals
- Arthropods
 - Mosquitoes
 - Ticks
 - Biting midges
 - Flies
- Bite or body part




Agencies Involved

- Wildlife
 - State and local wildlife management agencies
 - USDA APHIS Wildlife Services
 - National Wildlife Disease Program
- Arthropod vectors
 - Public health if human impact




Assessment

- Determine if wildlife or arthropod vectors involved
 - Species present
 - Infected or carrier
 - Potential spread of disease agent
 - Level of interaction
- Determine risk to livestock or poultry



Disease Surveillance


- Determine absence, presence and potential spread
- Diagnostic sampling
 - Live capture
 - Observation
 - Carcass collection
- Animal movement into and out of Control Area can pose challenges



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Wildlife Management


- Measures to minimize spread to domestic livestock
- Species present or involved
- Population density and distribution
- Habitat
- Social organization



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Wildlife Management

- Removal and relocation
- Dispersal
- Habitat alteration
- Natural or artificial barriers
- Wildlife able to evade and disperse



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Short-term and Long-term Goals

- Short term
 - Contain, control outbreak in livestock
- Long term
 - Control or eliminate disease from wildlife species
 - May require extended management
- Consider consequences
 - Ecosystem and environment
 - Trade implications

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Vector Control

- Understand life cycle
 - Life stages vary in habitat and ability to transmit disease
- Minimize contact with vector
 - Keep animals away from vector habitat
 - Shelter during peak vector times



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Vector Control


- Source reduction
 - Habitat reduction/elimination
 - Parasitic or predatory insects
- Control adults
 - Chemical control
 - Fogging, knockdown
 - Baits, fly traps
 - Supplemental measure

Controlling the egg and larval stages is usually more efficient than controlling adults

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Other Response Activities


- Many disease control activities implemented during response
 - Quarantine and Movement Control
 - Cleaning and Disinfection
 - Personal Protective Equipment
- Other JIT presentations available
 - <http://www.cfsph.iastate.edu/Emergency-Response/just-in-time-training.php>



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Safety


- Safety is a priority
- Handling and restraint of wildlife
 - Trained, experienced personnel
- Vector control chemicals
- Zoonotic disease



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Additional Resource

- FAD PReP/NAHEMS Guidelines: Wildlife Management and Vector Control for an FAD Response in Domestic Livestock
 - <http://www.aphis.usda.gov/fadprep>



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