

Euthanasia & Mortality Management

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Pig Transition from Sow to Nursery

MSUE Pork Team Roadshow 2013

Wednesday, January 16
Allegan County MSU Extension Office
Human Services Building
3255 122nd Ave., Allegan

Thursday, January 17
Isabella County MSU Extension Office
200 N. Main St., Mt. Pleasant

Wednesday, January 30
Dearth Community Center
Branch County Fairgrounds
262 Sprague Street, Coldwater

Thursday, January 31
Cass County MSU Extension Office
120 N. Broadway, Suite 209, Cassopolis



Previous Presentations on Euthanasia

- **Becoming a Better Decision Maker About Euthanasia**
 - 2011 Pork Team Winter Program
- **Guidelines for On-Farm Euthanasia of Swine**
 - 2012 MPPA-MSUE State-Wide Meetings

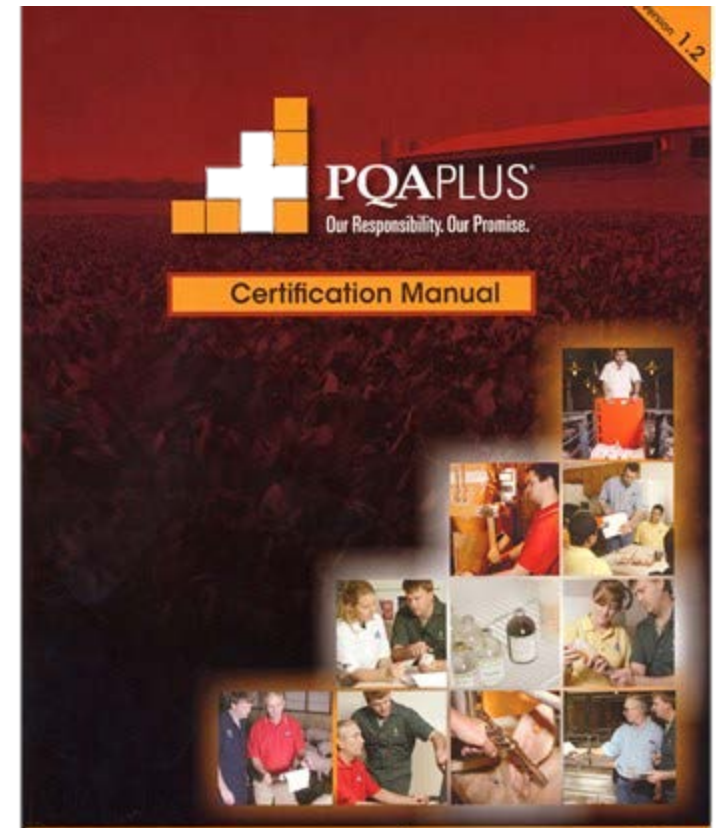


AVMA Approved Methods of Euthanasia

	Suckling Pig (to 12 lb)	Nursery Pig (to 70 lb)	Grow-Finish (to market wgt)	Adult (Sow or Boar)
Carbon Dioxide (CO2)	Yes	Yes	Yes, not practical	Yes, not practical
Gunshot	No	Yes	Yes	Yes
Penetrating Captive Bolt	No	Yes	Yes	Yes
Non-penetrating Captive Bolt	Yes	Yes with 2ndary step	No	No
Electrocution Head to heart	>10 lb	Yes with 2ndary step	Yes with 2ndary step	Yes with 2ndary step
Bluejuice Overdose (Vet)	Yes	Yes	Yes	Yes
Blunt Trauma	Yes	No	No	No

Quality Assurance Programs

- Pork Quality Assurance (PQA)
 - Created in 1989
- Pork Quality Assurance Plus (PQA Plus)
 - Revamped PQA Program in 2007
 - Added animal care & well-being guidelines
- Site Assessments
 - Accompanies the PQA Plus program
 - On farm assessment of animal care



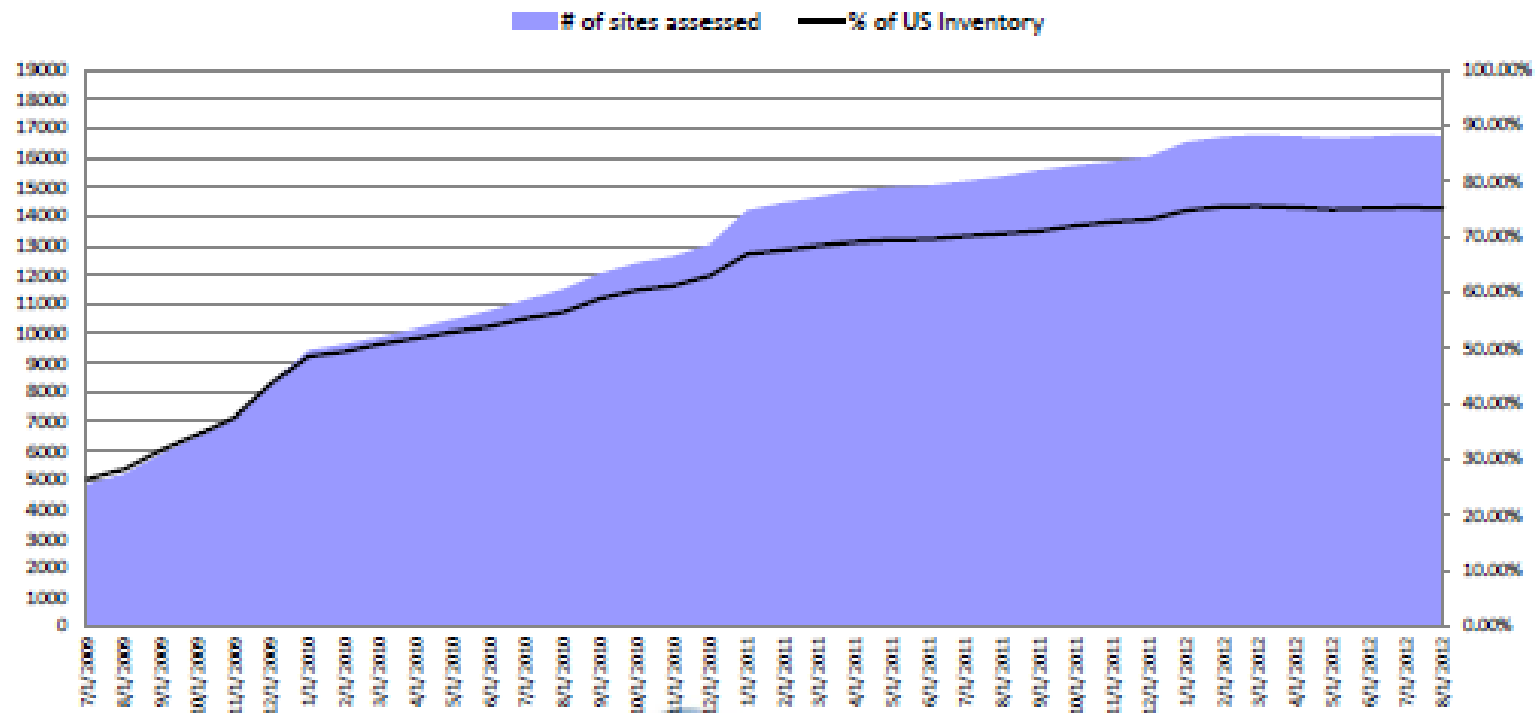
What is Pork Quality Assurance?

- Continuous improvement program that focuses on good production practices for pork production
- Focus areas of the program include:
 - Food safety – minimizing physical, biological and chemical hazards
 - Animal well-being – proper handling, treatment and care of animals
- Program gives producers tools to help them track, measure and improve animal care
- Training tool for swine farm employees



Site Assessments Completed

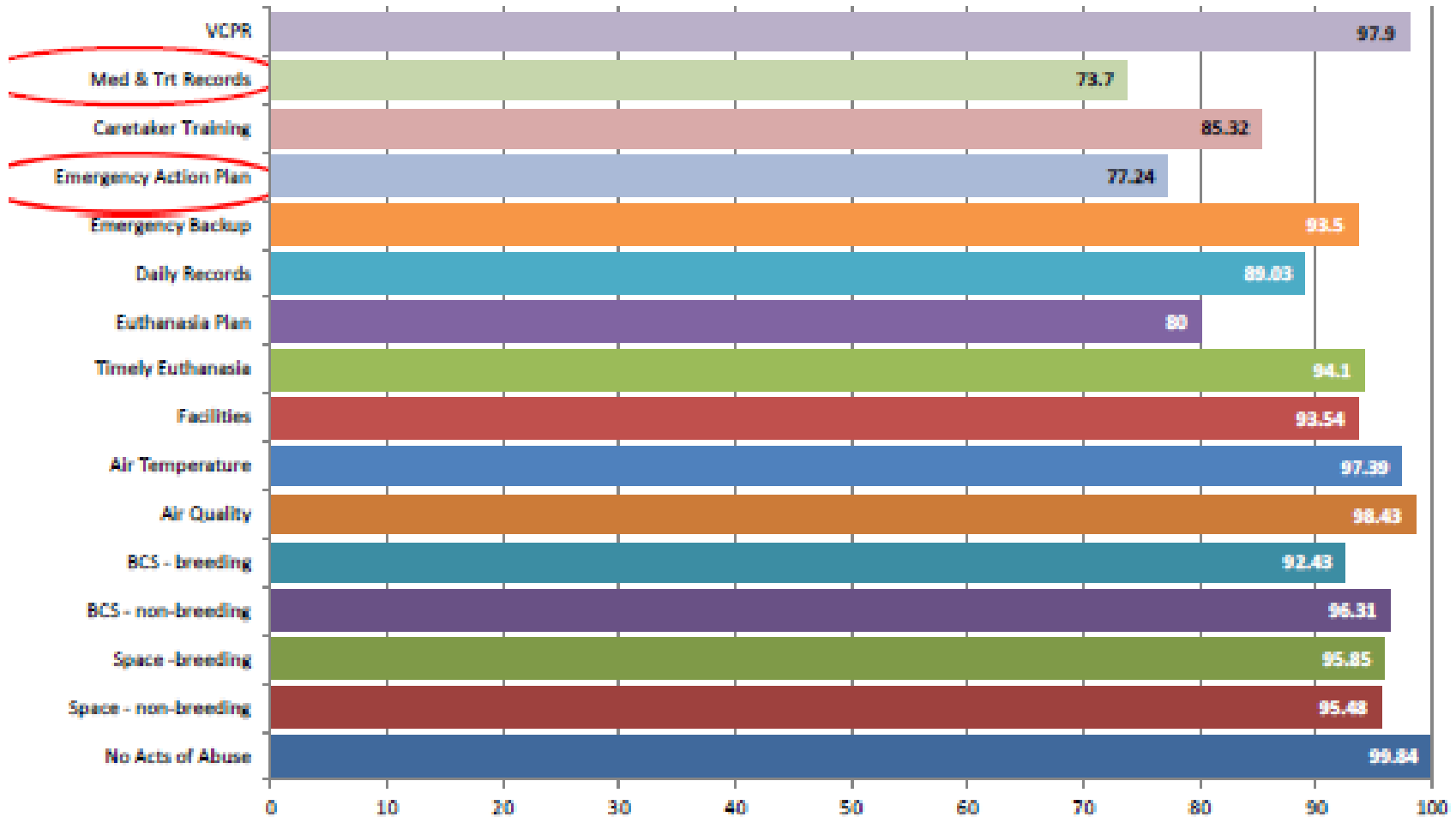
- 16,727 sites with valid site status
- 75.19% of US swine inventory represented



DOING WHAT'S RIGHT.



% of Sites Marked as Acceptable (16,727)



Euthanasia Action Plans

- Should be developed by all swine production units
- Need to reflect the phase of production, size/age of pig
- Alternative methods should be discussed and developed if any issues or malfunctions arise
- Action plan should include the training of all caretakers and clarification of their role in the euthanasia process



Euthanasia Action Plan

Farm Name: XYZ Farm

Date: January 7, 2009

Drafted by: Joe Smith, producer

Dr. John Doe, veterinarian

Employees responsible for euthanasia: Sally Smith, Dave Jones, & John Doe

Phase of production / Size of pig	Euthanasia method of choice	Alternative method of euthanasia
Suckling pigs, up to 12 pounds	Carbon dioxide CO ₂	Non-Penetrating Captive Bolt
Nursery pigs, up to 70 pounds	Penetrating captive bolt	Gunshot
Grower - Finisher pigs, up to market weight	Penetrating captive bolt	Gunshot
Mature pigs, sows and boars	Penetrating captive bolt	Gunshot

Employees responsible for euthanasia who have been trained in methods of euthanasia, confirming insensibility and confirmation of death.

Employee name	Date of method training	Date of confirming insensibility training	Date of death confirmation training
Sally Smith	June 5, 2008	Jun 10, 2008	June 10, 2008
Dave Jones	September 9, 2008	September 9, 2008	September 9, 2008
John Doe	October 14, 2008	October 14, 2008	October 14, 2008

Euthanasia Action Plan

Farm Name: _____

Date: _____

Drafted by: _____

Employees responsible for euthanasia: _____

- Emergency Contact
- Connect with Mortality Management Plan

Phase of production / Size of pig	Euthanasia method of choice	Alternative method of euthanasia
Suckling pigs, up to 12 pounds		
Nursery pigs, up to 70 pounds		
Grower - Finisher pigs, up to market weight		
Mature pigs, sows and boars		

Employees responsible for euthanasia who have been trained in methods of euthanasia, confirming insensibility and confirmation of death.

Employee name	Date of method training	Date of confirming insensibility training	Date of death confirmation training

How do you confirm a successful euthanasia event?

- Insensibility
 - Checked within 30 seconds after euthanasia method was completed
 - Rhythmic breathing
 - Constricted pupils
 - Attempts to rise
 - Reflex action when running finger across eyelash
 - Response to pain
- Death
 - Checked after 3 minutes following euthanasia process
 - No breathing
 - No heart beat
 - No movement
 - No response pain
 - Eye does not blink when touched



Failure of Proper Euthanasia Process

- Typically is a result of the following
 - Hesitation by employee performing the procedure
 - Poor placement of euthanasia tool
 - Specifically in regards to firearm/gunshot and captive bolt methods
 - Maintenance of equipment
 - Failure to recognize animals that need to be euthanized
- Protocols for back up methods of euthanasia should be present at each swine facility and written in the euthanasia action plan



The Importance of Mortality Management



Goals

- Routine Mortality Management
 - Be able to evaluate suitability of method to production system
 - Economics, flow, impact on environment
- MDARD Mass Carcass Management
 - Options
 - Documentation forthcoming



Mortality – planning to manage

- Right-to-Farm
- MAEAP
- NPDES
- NI_190_304, CNMP Technical Criteria
 - Section 2 – Manure and Wastewater Handling and Storage
 - (v) 2.5 Normal Mortality Management
 - Section 3 – Farmstead Safety and Security
 - (iii) 3.3 Catastrophic Mortality Management



Normal & natural mortality

- Intrinsic to an operation under common ownership or management
 - **CAFO Permit Status**
- Report increases in mortality to veterinarian and state department of agriculture



All Routine Mortality

- Must be disposed of within 24 - 72 hours of death (varies by state)
 - Except:
 - Secured storage
 - At $\leq 40^{\circ}$ F for maximum 7 days
 - At $\leq 0^{\circ}$ F for maximum 30 days
 - Road kill
 - Restaurant grease
 - Specimens from educational institutions
 - Mortality from Animal Control



Most popular management methods

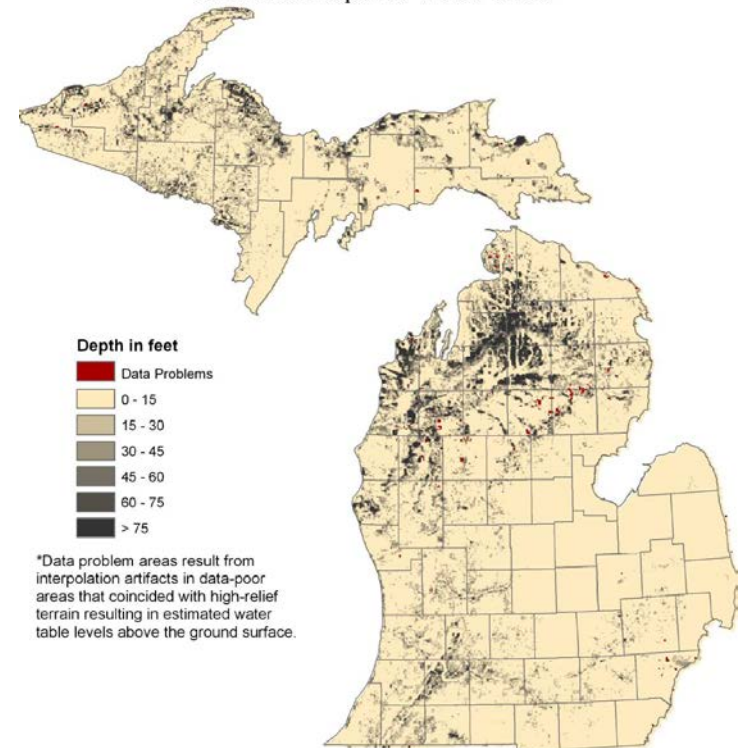
- Burial
- Incineration
- Rendering
- Land-fill
- Composting



Protect MI Groundwater

- Michigan touches four of the five Great Lakes
- 40 of Michigan's 83 counties touch at least one of the Great Lakes.
- Michigan has more than 11,000 inland lakes and more than 36,000 miles of streams.
- You are never more than six miles from an inland lake or stream

Figure 7
Estimated Depth to Water Table



Burial – Web soil survey

The screenshot displays the Web Soil Survey application interface. At the top, there are browser tabs and a menu bar. Below the menu bar, there are tabs for 'Area of Interest (AOI)', 'Soil Map', 'Soil Data Explorer', and 'Shopping Cart (Free)'. The main content area is divided into a search section, a map unit legend, and a map view.

Search

Map Unit Legend

Clinton County, Michigan (MI037)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BnB	Boyer sandy loam, 0 to 6 percent slopes	10.2	12.3%
CaA	Capac loam, 0 to 4 percent slopes	17.9	21.6%
Gf	Gilford sandy loam	19.3	23.4%
Mda	Matherton loam, 0 to 3 percent slopes	12.8	15.5%
Pr	Parkhill loam	4.3	5.2%
Sb	Sebewa loam	4.1	5.0%
ThA	Thetford loamy sand, 0 to 3 percent slopes	0.3	0.4%
WbA	Wasepi sandy loam, 0 to 3 percent slopes	13.7	16.6%
Totals for Area of Interest		82.6	100.0%

The map view shows an aerial photograph of a rural area with various soil units overlaid in yellow. The units are labeled with their symbols: TRA, Gf, Mda, Pr, Sb, WbA, CaA, and BnB. A blue line representing a water body is also visible on the map.

At the bottom of the screenshot, the Windows taskbar is visible, showing the system clock as 11:06 AM on 7/14/2011.

Composting



Challenge - Batching

- Initial additions, or loading of new carcasses and bulking agent
 - Limited to a planned time period
 - Rate of mortality
 - An appropriately sized composting facility.
- Batches provide for appropriately timed temperature monitoring, aerating, and utilization





Challenge – Monitoring Temperature

- Recorded once per week for each batch
- Minimum of 3 heat cycles before considered finished



Challenge - Records

- Start date of each new batch
- Quantity of tissue
- Temperature once per week each batch
- Turning dates
 - Aerating speeds process, increases heat, controls flies and vermin
 - Three heat cycles required
- Final disposition (method, location, date, estimated volume/wt., sale)
- Nutrient analysis one batch per year



Thank You!

