



Animal Handling The Future **MUST** be **NOW**

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Premium Standard Farms

Our History of Animal Handling

- “Pork Making by Machinery, Pork Making by Applied Mathematics”
 - Sinclair, 1906
- The “Disassembly line”
 - Basis for Fords Modern Automated Assembly Line Concept





Our History of Animal Handling Results

“It was like some horrible crime committed in a
dungeon, all unseen and unheeded, buried out
of sight and memory”

Sinclair, 1906





Humane Methods of Slaughter Act

- Humane Slaughter Act of 1958, 1978
 - Additionally Multiple Directives and Notices
 - Public Law 107-171 Included a Resolution Confirming the HMSLA Should be Fully Enforced
 - Up Until the Last Decade Utilized Primarily on the Most Egregious of Sins
 - Animal Welfare is Now a **PRIORITY**

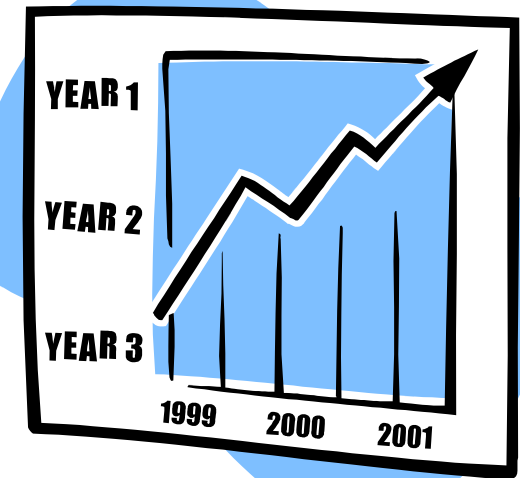
Recent Improvements

- GMPs for Animal Handling and Stunning
 - 1997
- AMIF Good Management Practices-Audit Basis
 - 1999
- AMI Animal Handling Guidelines and Audit Guide
 - 2004



AMI Animal Handling Program Goals

- “Manage What you Measure”
- Detection of Problems
 - Pass or Fail
- Continuous Improvement
 - Pre-MacDonald's vs Post MacDonalDs





AMI Animal Handling Audit Guide

Audit Criteria

- Core Criteria 1 Proper Stunning
- Core Criteria 2 Insensibility
- Core Criteria 3 Slips and Falls
- Core Criteria 4 Vocalization
- Core Criteria 5 Electric Prod Use
- Core Criteria 6 Willful Acts of Abuse

Specialty Programs

- Assurance of production, transport, slaughter that Adhere to Designated “Humane Production Practices”
 - Permission to feel good about their food
- AHA, Compassionate Care, HFAC
 - Key Differences: Bedding, Outdoors, Density, Prods





Where are We at Today

US Swine Industry Analysis

- DOA-239,200 Head Lost (.23%)
 - \$31,694,000
- DIP-179,400 Head Lost (.17%)
 - \$23,770,500
- Meat Quality Attributes
 - WHC-\$0.50 per Head
 - Color-\$0.43 per Head
 - Bruise-\$0.08 per Head
 - PSE-\$0.90 per Head
 - \$198,640,000
- **Total Lost Opportunity-\$254,104,500**
 - \$2.44 per Head



Other Cost

- Worker Safety
 - Finishing Production
 - 37% of Injuries Animal Handling Related
 - 61% were Due to Sorting/Loadout Procedures
 - Plant Injuries with Handling Non-Ambulatory
- Animal Movement Efficiency
 - Disruption of Animal Flow
- Labor of Handling Non-Ambulatory
- Equipment Cost



More Than Money

- Risk/Liability for Improper Handling
 - USDA-FSIS
 - Customer/Consumer
- Responsibility to Your Workers
- Ethical and Moral Standing
 - “Right Thing to Do”





The Next Step

Exposure to Stress During Handling

- As the Pig is Exposed to One Stress After Another
 - Body Cannot Return to Baseline
 - Stress Response Continues to Become More Intense
 - Animal Enters a State of Distress
 - Ultimately Death

Additive Stress Model

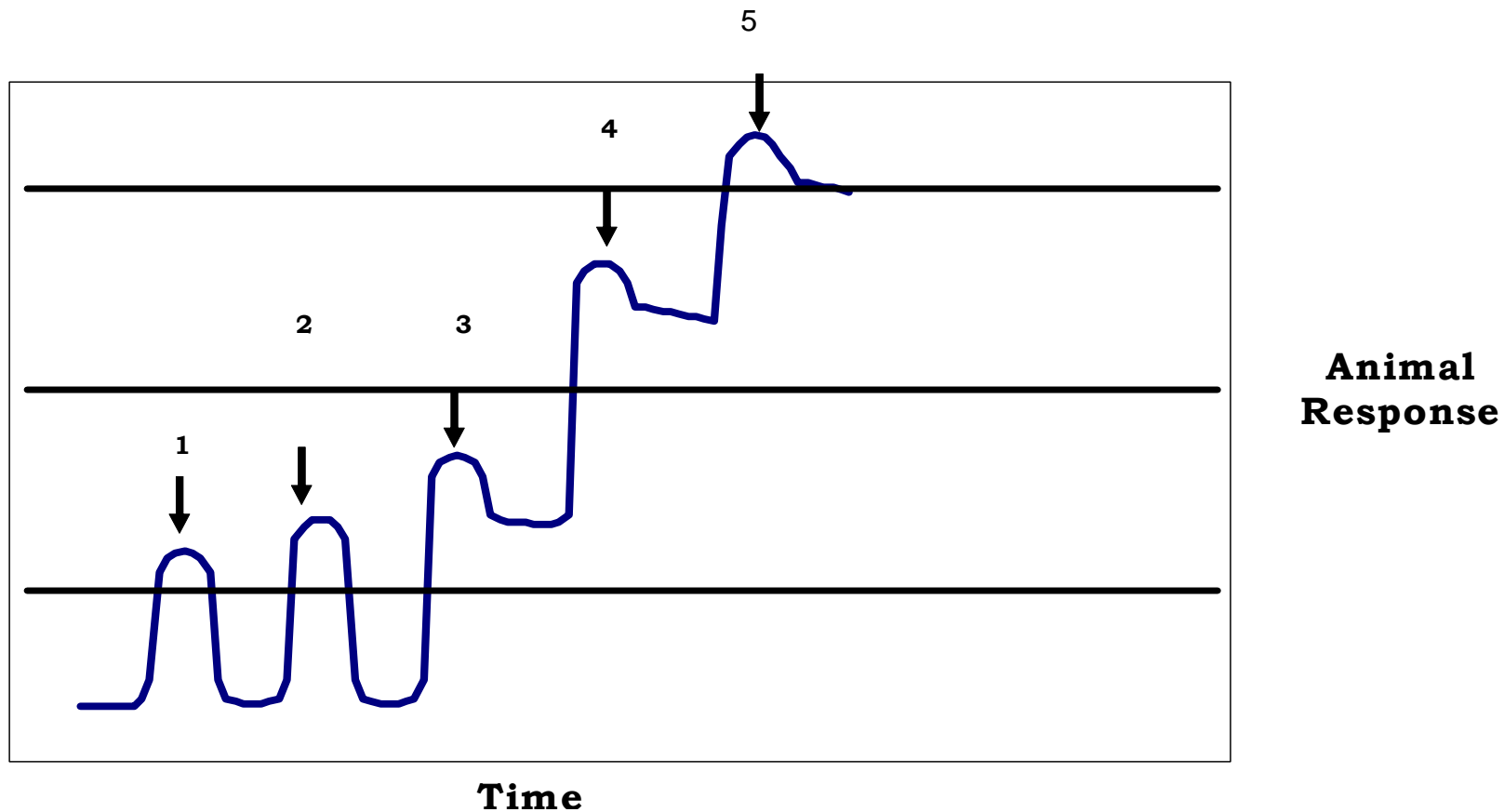


Figure 1. Responses to a series of stimuli which, individually have moderate effects, but can be lethal in combination. 1 = Movement from home pen along alley way, 2 = Electric prod use 3 = Loading 4 = Transport 5 = Unloading.

Changing the Mindset

- Move Beyond Identifying Obstacles and Avoiding Problems
 - Minimize the Exposure to Environmental Stressors
 - Additive Stressors
 - Intensity
 - Time
 - Mode
 - Novelty
 - Ensure the Animal Does Not Exceed its Coping Capacity
 - Distress

Animal Movement

“Movement is accomplished by making the target location, or route to it, more attractive than the starting location”

Gonyou, 1993





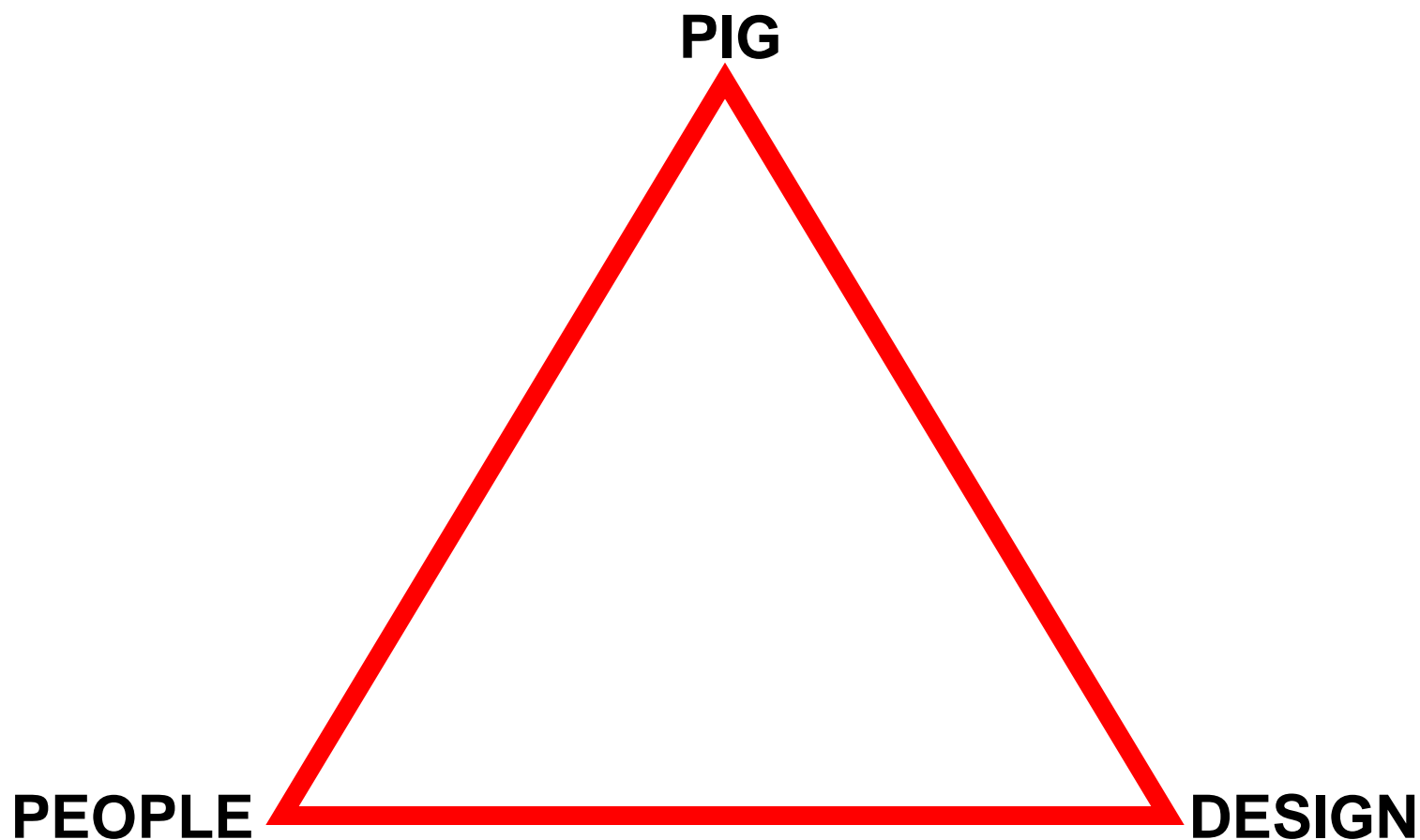
Pigs are Motivated by Many Factors

- Natural Curiosity
- Pig Odors
- Pigs Sounds
- Conspecifics
- Food
- Fear
- Pain

Problem

- The Industry has Historically Relied Heavily on Negative Motivators or Repulsive forces to Move the Animal
 - Primarily Fear and Pain
- Indication of a Failure in One or More Factors in the Holy Trinity of Animal Handling

Holy Trinity of Animal Handling



Pig

- Genetics
- Health and Condition
- Behavior
 - Is Dictated by the Cues from its Environment Utilizing its Basic Sensory Capabilities
 - Influenced by Past Experiences
 - Internal
 - External



People

Greatest Asset or Greatest Liability

- Primary Objective
 - Positively Encourage the Animal To Move to the Target Location
 - Minimize the Animal's Level of Fear
- Depends on
 - Attitude
 - Knowledge
 - Motivation



Design

- Design for the PIG
 - Behavior
 - Physiological Needs

- Must Integrate As a System
 - Production»Transport»Processing





Failure of the Holy Trinity

- All Three Attributes are Critical and Equal in Their Importance
- The Greatness of One Attribute Cannot Mask the Weakness of Another
- The Failure of Any One Attribute Will Cause the System to Falter

Examples

- Lame Pig
- Slippery Floors
- Untrained Employees

Where We Need to Be

- We MUST Utilize the Behavioral and Physiological Attributes of the Pig to NOT only Minimize Stress BUT to Improve the System
 - Instead of Identifying Obstacles and Avoiding Problems
- Make the Pig “WANT” To!

Additive Stress Model

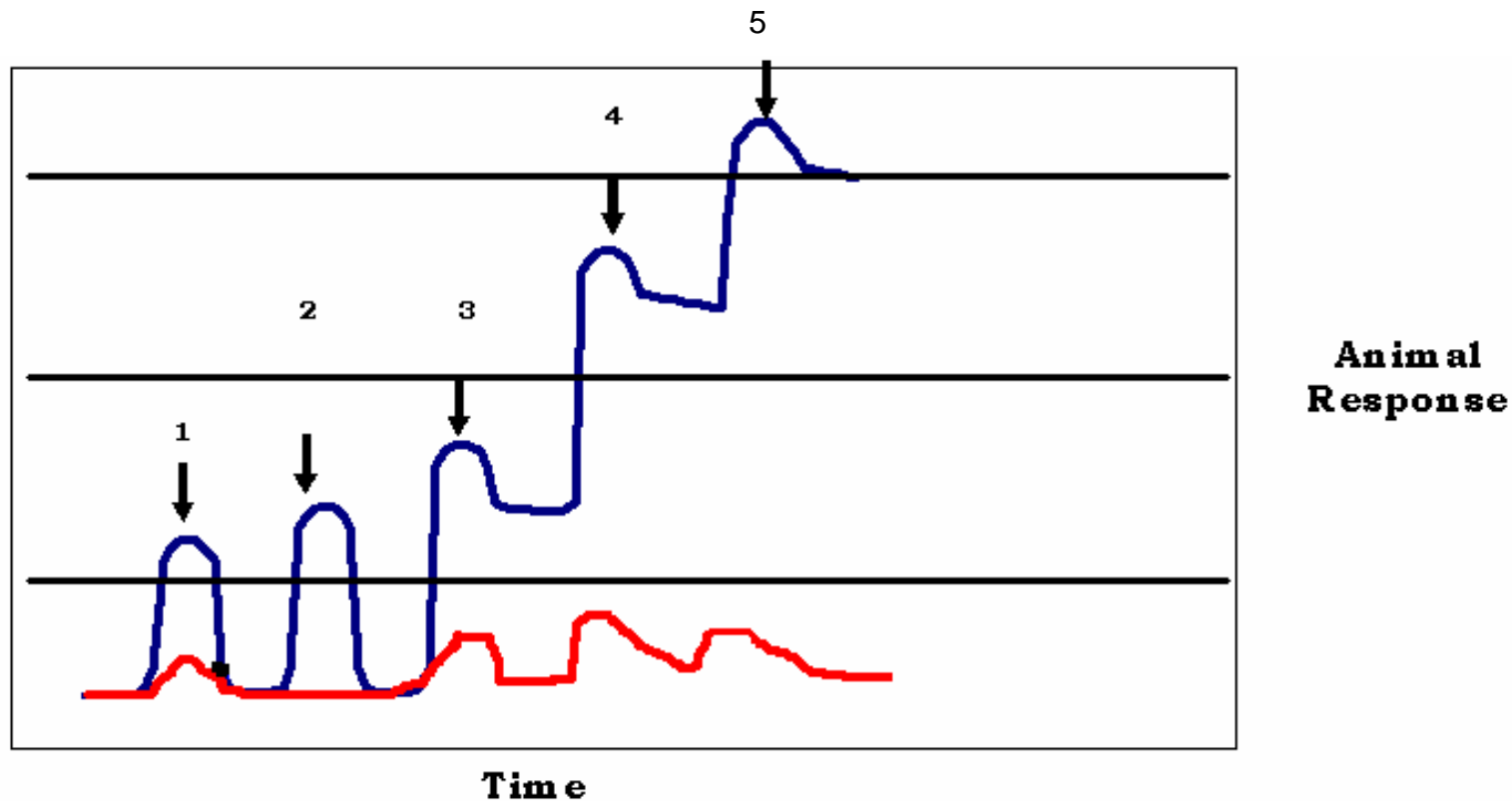


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Improvements

- Plant Efficiency
- Pork Quality
- Animal Welfare
- Labor Utilization
- Reduce Risk and Liability
- Improved Customer Satisfaction





Examples of Moving in the Right Direction

- Group Handling Backloader System
 - Social Behavior, Communication, Vision

- Dual Level Flat Dock Group Loadout
 - Social Behavior, Sense of Vision, Touch, Rearing Experience

- Light Sequencing
 - Sense of Vision, Rearing Experience

Only Part Way

- Have Yet to Integrate All (even majority) of the Behavioral and Physiological Attributes of the Pig Necessary to Significantly Improve the System
 - Not Considering Lighting Design within A Backloader System
 - Failure to Account for Airflow in a Flat Dock Unload
- Even the Best Examples Have Failed to Fully Optimize the System
 - Results in Disappointment and Retrofits

Needed Research

- Better Understanding of the Pig In Commercial Systems
- Integration of Each Piece of the Puzzle
 - Flooring, Lighting, etc.
- How Best to Utilize New Technologies



Questions?