Controlled Atmosphere Stunning

A Conversation
Criteria for CAS

- Tested with test chamber at Non USDA Inspected plant
- Established the atmosphere for stunning and time required
- Wanted to stun in groups
- Groups were sized by number of birds
- Mechanical cycle times
Results of Testing

Birds were evaluated by Plant Manager and R&D Manager after evisceration and picking.

- Birds were different color (near white)
- Birds were called “easy skin”, as the skin could be pulled off easily.
- Picking was better
- No blood in wing sockets
- No blood in breast meat
Design Considerations

New Transportation Method

• Load from one side
• Improved loading system
• Not touched by people while loading
• Down time not acceptable – no missed shackles
• Uniform stunning for birds in process
• Live birds not handled by people at plant
At The Plant

• Mechanical unloading at plant
• Keep people away from birds
• Mechanical processing of cages from unloading to reloading
• No handling of unstunned birds
• Hanging area well lit, with little or no dust and no struggling by birds
• Hanging is only lifting legs into shackles with turkeys
Induction Phase is Critical to Humane Handling of Poultry and Meat Quality

- Keep birds calm, as calm birds take stunning more predictably. Also helps prevent a calcium release, promoting better bleeding.
- A hypoxia condition in the first section of the stunner for the time required to induce an unconscious condition
- Homogeneous atmosphere in first section to treat all birds as equally as possible
- Monitor and control atmosphere in real time and make adjustments as required
- Not doing the induction phase correctly will result in reduced quality and could present birds of less quality than electrically stunned birds
Anoxic Stun Sections

• Control CO₂ Levels to promote deep breathing, which affects blood PH
• Control CO₂ levels to prevent adverse reactions
• Allow enough time at the right CO₂ levels to induce a deep state of unconsciousness and to prevent a conscious condition prior to bleeding
Economics

- Turkey loading and transportation system has shown improvements in shorter loading times, labor reduction, worker safety and labor requirements.
- Chickens do not have as much potential improvement in costs for loading as turkeys.
- CAS systems at the plan for turkeys will provide a return on investment that will be acceptable to most all who use this system.
- CAS systems at the plant for chickens will cover related operational costs and maintenance plus a small return on investment.
Benefits Not All Inclusive

- CAS done correctly will make the whole plant run better
- Humane handling requirements end within the stunner
- Lower blood PH
- Better Pickability
- Little or no blood in meat if done correctly
- Reduced trimming
- Yield improvement
- Labor reduction
- Increased efficiency throughout the plant
- Improved working conditions for hangers (lights on, little dust and less noise)
- Area is acceptable for bringing guests for viewing
Driving Forces of CAS

- Improved working conditions
- Improved Product Quality and Yield
- Animal Welfare
Obstacles to Implementation

• Integration into existing plant
• Interruption of production during installation
• Perception of added production cost
• Large capital cost
• Fear of unknown and change
THANK YOU!

Questions?

Email your questions to:

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