

# ***Economics Aspects of Animal Welfare***

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***Animal Welfare and Current Industry Issues for Livestock Producers  
Nebraska Locations: West Point, Lincoln, Kearney, and Gering  
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# Background & Motivation

- Consumer interest in production methods is growing
  - Think about discussions on food safety, farm size, GM-feed, hormone use, etc....
  - Includes animal welfare
    - well-being, care, and handling of livestock being raised for meat, milk, and egg production (Tonsor)

# Events Summary

- State-by-State: Ballot initiatives & Legislature
  - FL (02'), AZ (06'), CA (08') & OR (07'), CO (08'), ME (09'), MI (09')
  - OHIO:
    - *Ohio Livestock Care Standards Board* (09')
    - Agreement w/ HSUS (June 10')
      - Phase out gestation stalls by Dec. 2025; no new facilities after Dec. 2010
      - No new permits for new egg facilities with battery cages
      - Downer cattle & humane euthanasia language included...
- Live Trade
  - May 11': Australia banned live cattle exports to Indonesia because of inhumane treatment
- National Legislation & Labeling?
  - July 11': UEP & HSUS agreement

# 4 Surveys Conducted

Drs. Glynn Tonsor and Christopher Wolf (MSU)

- Nov. 2007; 1,000 surveys in MI
  - 205 completes available for analysis
- June 2008; 1,001 surveys across U.S.
  - Focused on pork; gestation crate/stall use
- Oct./Nov. 2008; 2,001 surveys across U.S.
  - Focused on gestation crates/stalls, laying hen cages, dairy pasture access
- May 2010; 800 surveys across U.S.
  - *There are multitudes more unanswered, economically relevant questions than one can begin to tackle...*

# *When was the last time you visited a farm with animals/livestock being raised for milk, meat, or egg production?*

• Never	24%	} 67% not in last 5 years
• Over 10 years ago	35%	
• 6-10 years ago	8%	
• 1-5 years ago	15%	
• Within last year	18%	

*Please rank the following species in order of concern you have regarding current animal welfare/handling practices (1 being most concerned):*

	Oct/Nov 2008	May 2010
• Beef cattle	2.47	2.51
• Dairy cattle	3.01	3.03
• Swine/hogs	3.28	3.26
• Broilers	2.99	3.00
• Laying hens	3.25	3.21

- Beef cattle have highest mean concern (Chino perceptions may underlie this...)
- Interesting difference from ballot initiatives...

*How much do you agree that the following practices seriously reduce the welfare of farm animals?*

- Castration, Tail Docking, Cages/Crates, Indoor Confinement
- Swine, Dairy Cattle, Beef Cattle, Laying Hens
  - Responses are grouped by production practice rather than species.
  - Suggests ‘no industry is immune’ and that concerns are global across species

## *CA's Proposition 2 Question:*

*Law would require farmers nationally to confine calves raised for veal, egg-laying hens, and pregnant pigs only in ways that allow these animals to lie down, stand up, fully extend their limbs, and turn around freely.*

- CA actual vote (Nov 2008):63% FOR
- Survey national question:
  - National support: 70% FOR (Oct/Nov 2008)
  - National support: 66% FOR (May 2010)



# Determinants of voting response in national Proposition 2 questions:

- State of residence not a factor
- Some observable socio-economic traits are influential
- Info. accuracy perceptions are most influential
  - Those perceiving livestock industry (consumer groups) to provide accurate AW information are much less (more) likely to vote FOR.

# Ballot Voting Implications

- Targeting residents is difficult (latent perceptions drive voting)
- Residents were insensitive to # years for producers to comply (6-8 is common).
  - 1<sup>st</sup> or most heard voice may set adjustment timetable
  - Substantial costs of not being active or sending mixed signals
  - Industry may have opportunity to pursue longer implementation timetable
- Majority show voting support but not matching purchasing behavior...

# Perceived price impacts of g.c. ban:

Entire Pop.

	Raw %	"Know" %s
Fall by 11% or more	4%	7%
Fall by 6-10%	3%	5%
Fall by 1-5%	2%	3%
Change by less than 1%	5%	8%
Increase by 1-5%	7%	12%
Increase by 6-10%	12%	20%
Increase by 11% or more	26%	44%
Don't Know	42%	

	FOR a G.C. Ban		AGAINST a Ban	
	Raw %	"Know" %s	Raw %	"Know" %s
Fall by 11% or more	3%	5%	5%	8%
Fall by 6-10%	3%	5%	2%	3%
Fall by 1-5%	3%	5%	0%	0%
Change by less than 1%	6%	11%	2%	3%
Increase by 1-5%	9%	16%	2%	3%
Increase by 6-10%	14%	25%	7%	12%
Increase by 11% or more	19%	33%	42%	70%
Don't Know	44%		40%	

# Mean vs. Median Issues...

- **MI Pork Chop Choice Experiment:**
  - 20% have preferences ‘justifying a gestation crate ban’
  - 80% “could be appeased” by voluntary production of gestation crate-free pork
    - So consumers may be valuing producer autonomy
- **Egg Purchasing Analysis** (Chang, Lusk, & Norwood, 2010)
  - Cage-free premium is 57%
    - driven by minority: <4% of sales nationally are cage-free

# National Consumer Pork Preferences

- Consumers infer food safety and pork quality from gestation crate/stall use.
  - Common perception is that g.c use reduces food safety and pork quality.
- Supporting evidence:
  - Valuations of gestation crate/stall-free pork are lower when food safety & quality claims are present on pork chop labels.

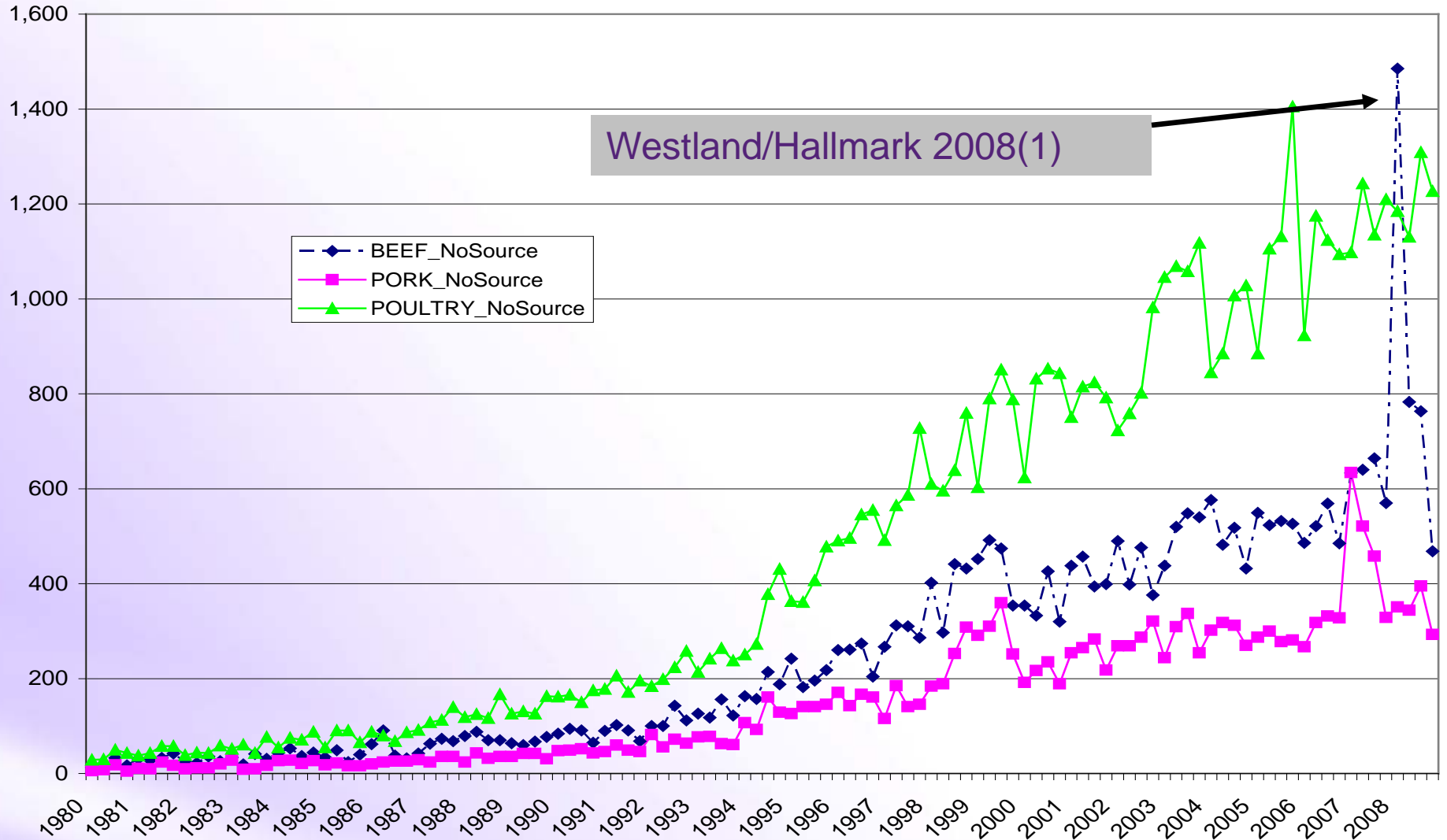
# *Impacts of Animal Welfare Media Coverage on Meat Demand*

# Methods: Media Indices

(collaborated w/ Nicole Olynk, Purdue Univ.)

- Lexis-Nexis searches (1980-2008) of major U.S. newspaper and magazine articles with key words:  
*“(animal welfare) or (animal friendly) or (animal care) or (animal handling) or (animal transportation) AND (food or diet or meat).”*

# Species-Specific Indices





# Methods: Model

- Estimated aggregate demand model
  - Beef, pork, poultry, non-meat food
  - Allow for “cross-meat” and “out of meat” substitution impacts
- Control for time trends, quarterly seasonality, prices, total meat expenditures, and AW media impacts

# Results Summary

- *Reject* null hypotheses of:
  - No AW media effects
  - AW media effects being contemporaneous only
  - AW media effects extending beyond 6 months
    - SO: AW media effects are significant in the quarter of article release & one subsequent quarter...
- *Fail to reject* null hypotheses of:
  - Cross-species spillover effects = 0
    - SO: AW impacts lead to expenditure reallocation to non-meat food rather than to increases in competing meats...

# Results Summary

- AW media elasticities are notably smaller than price & expenditure effects
- Increases in AW media have:
  - Not directly impacted beef demand
  - Reduced pork demand (both in short- and long-run)
  - Reduced poultry demand (in long-run)
- 1999(1)-2008(4) pork & poultry AW media indices increased by 181% & 253%
  - = 2.65% pork & 5.01% poultry demand reductions...

# Implications

- Aggregate meat demand impacts exist. Do they cover avg. adjustment costs?
  - Highlights the resident voting vs. consumption decision dilemma ...
  - Also consistent with limited “free market” disadoption observed to-date by livestock industry...
- Budget reallocation effects:
  - Supports notion of a broader meat industry response rather than species-specific responses
  - All species lose as expenditures leave meat complex...

# Future Work Opportunities

- Reassessment & replication needed
- Net Information vs. Separating out “positive,” “negative,” and “neutral” articles...
- No delineation by source considered...
- Broader global “comparative advantage” consideration needed (pork exports: 20-25%)

# *Nature of “Media” is Changing... How Influential are Today’s Videos?*

- Information flows constantly and instantly
  - Mobile devices complement computers, TVs, print material
  - Videos related to food production are posted regularly
    - Yet impacts and effectiveness are largely unknown
  - Previous work suggests media (non-video) influences meat demand...

# Methods: Video Treatments

- National online sample of 800; May 2010
- Three videos – randomly allocated
  1. “Happy Cow” video (CA dairy producers)
    - Check-off funded; very positive tone
  2. “Unhappy Cow” video (PETA)
    - Very negative tone – presumably seeks consumption reduction
  3. Farmers Feed Us video (Center for Food Integrity)
    - Farm family focused - \$5k grocery lottery rollout

# Video Study: Take Home Points

- Perceptions may be altered by videos
  - We assessed short-term, reaction impacts – what about persistence???
- Stated milk WTP is unaltered by videos
  - Altering perceptions (and hence votes) but not purchasing behavior = industry dilemma...



***Mandatory Labeling of Animal  
Welfare Attributes:  
Public Support and Considerations  
for Policy Makers***

# Comparative Ad(dis)vantages = National Legislation???

- Adjustments of production practices varies across states
- Timelines of implementation vary across states
  - Possible support for national legislation to “level the field”
  - Increasingly pockets of producers may lead the call..
- July 7, 2011 UEP & HSUS agreement
  - call for national standards regarding laying hen housing
  - call for mandatory labeling of eggs

# Objectives of this Study

(collaboration w/ Dr. Chris Wolf – Michigan State Univ.)

1. Examine U.S. resident support for mandatory labeling of AW information on pork and eggs
2. Outline considerations for assessment *prior* to implementing any mandatory labeling policies

# Methods

- Oct/Nov 2008 national survey of 2,001
  - Purposely around CA's Proposition 2 vote...
- Assess awareness and perceptions w/r/t AW
- Estimate demand for mandatory labeling of AW on pork and egg products

# Results

- 62% in favor of mandatory labeling of pork (gestation crate/stall use) and eggs (laying hen cage use)
  - 44% reversed support with price considered
- WTP about 20% higher prices
  - Likely an upper bound
- Perceived accuracy of AW info. from livestock industries *relative* to consumer groups is critical demand driver

# Pre-Mandatory Labeling

## Implementation Considerations

- Through benefit-cost assessment is needed
- Delineations needed:
  - Frequent consumer vs. advocates for change/bans
  - Producer impacts likely vary within industries
  - Mean vs. median economic welfare distinctions
- Alternative voluntary labeling consideration
- Consumer choice may not be enhanced
- Information overload possibility
- Composite AW index needed – AW isn't univariate

# *Summary Points & Alternative Pathways for Industry Response*

# Summary Points:

## Consumers & Residents

- Consumer/resident desires regularly initiate change
  - Perception drives decisions
  - “Accurate knowledge” and familiarity is NOT necessary to be influential
  - No one individual can be “educated” on everything...
- Consumers associate “good AW practices” with smaller farms, higher food safety
- Ballot voting behavior & regulation impacts all:
  - Product choice set for all is impacted
    - Even if only a minority  $WTP > MC$  (mean vs. median distinction)



# Summary Points: Consumers & Residents

- Voting and purchasing behavior mismatch = dilemma for industry...
- Meat demand impacts do exist and warrant industry consideration in strategy development
- National housing standards & mandatory labeling discussions picking up..

# Big Unknowns:

## Consumers & Residents

- Little is known about true desires
  - E.g. Is group indoor housing sufficient or is outdoor pasture ‘necessary’ to concerned segments?
- Would ‘site unseen’ meat from other countries be accepted if U.S. production costs accelerate?
- If adjustments (i.e. remove stalls) increase farm size, will that trigger additional pressure?
- What impact do AW changes have on export demand?
- Will individual/group ID have a growing role in AW discussion?

# Current Unknowns: Producers

- Limited research on adjustment costs
- Diverse producer impacts are largely driven by unknowns including:
  - farm size, facility age, region of production ...
  - recognize public data sources on these issues is decreasing ...
- Adjustments will likely involve environmental, food safety, and other impacts as well that require consideration
  - “nothing happens in a silo” ...

# An Additional Critical Point

- A state passing a ballot initiative isn't likely necessary to cause change:
  - Packers or retailers may drive a switch:
    - Cost of segregation; switch at some critical volume
  - External pressures will likely continue to mount (e.g. Jan. 2012 HSUS video w/r/t OK pork; Wal-Mart PR pressure)
- Relevant “non AW” example: switch from cash-to lean-pricing of market hogs
  - Wasn't mandated, but market encouraged transition
    - **Implication**: “Fighting ballot initiatives at all costs” may not be optimal

# Alternative Industry Paths

- “Do Nothing”

PROS:

- Minimize current investment
- Wait for more information & avoid “building the wrong barn”

CONS:

- Limits nearly all ability to have influence if “not at the table”
- Misses opportunity as public views farmer/rancher to have most influence...
  - Risk sending signal of indifference to AW...

# Alternative Industry Paths

- “Proactive” Options {not necessarily mutually exclusive}:
  - Negotiate with concerned groups
    - Adjustment time and requirements may (or may not) be improved
  - Seek additional legislation
    - Ag. may have more influence than reacting to ballot initiatives
  - Support additional labeling of practices
    - Different from demand enhancing motives; (think in terms of “minimize maximum loss” rather than “maximize expected profit”)
    - However multiple trade impacts with severe consequences (E.g. WTO-MCOOL) so voluntary labeling warrants alternative consideration...
  - Support ‘phase-out’ as old buildings come out of production
    - May align w/ timetables in prior ballot initiatives & reduce adjustment costs
  - Invest in public image (e.g. Center for Food Integrity approach)
    - Reconnect (not necessarily defend) with public; may not be sufficient for short-run response but may be necessary for long-run survival

# Wrap-Up Points

- AW discussion is here to stay
- No species nor state/region is immune
- Industry will increasingly face social pressures regarding food production practices
- Much more work is needed
  - Industry changes and policy consideration discussions are WAY ahead of current research based knowledge...
- Be aware, think carefully, and be proactive: “this isn’t your father’s world”...

More information @ AgManager (<http://www.agmanager.info/>)

<http://www.agmanager.info/livestock/marketing/AnimalWelfare/default.asp>



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**Livestock & Meat Marketing: Animal Well-Being and Welfare**

Title	Author	Date	Factsheet, Paper, Presentation, or Journal article	Video
Mandatory Labeling of Animal Welfare Attributes: Public Support and Considerations for Policymakers	<a href="#">Tonsor</a> and <a href="#">Wolf</a>	July, 2011	<a href="#">Journal Article</a> <a href="#">Fact Sheet (AM-GT-2011.1)</a>	<a href="#">WMV</a> <a href="#">MP4</a>
U.S. Meat Demand: The Influence of Animal Welfare Media Coverage	<a href="#">Tonsor</a>	September, 2010	<a href="#">Journal Article</a> <a href="#">Fact Sheet (MF2951)</a>	<a href="#">WMV</a> <a href="#">MP4</a>
Consumer Preferences for Animal Welfare Attributes: The Case of Gestation Crates	<a href="#">Tonsor</a> , <a href="#">Olynk</a> , and <a href="#">Wolf</a>	December, 2009	<a href="#">Journal Article</a>	<a href="#">WMV</a> <a href="#">MP4</a>
Consumer Voting and Demand Behavior Regarding Swine Gestation Crates	<a href="#">Tonsor</a> , <a href="#">Wolf</a> , and <a href="#">Olynk</a>	July, 2009	<a href="#">Journal Article</a>	<a href="#">WMV</a> <a href="#">MP4</a>
Consumer Use, Perceptions, and Demand Impacts of Alternative Animal Information Sources	<a href="#">Tonsor</a>	July, 2009	<a href="#">Presentation</a>	
Alternative Animal Welfare Responses: Options and Implications for Producers and Industry-at-Large	<a href="#">Tonsor</a>	March, 2009	<a href="#">Presentation</a>	

**Animal Welfare Videos by [Dr. Glynn Tonsor](#)**

**Mandatory Labeling of Animal Welfare Attributes (New!)**

**Consumer Preferences for Animal Welfare Attributes: The Case of Gestation Crates**

**Consumer Voting and Demand Behavior Regarding Swine Gestation Crates**





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