

Animal welfare assurance – impacts on cattle production and export markets

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Animal welfare assurance – impacts on cattle production and export markets

Introduction to animal welfare assurance

- Definitions and conceptual framework
- Public concern for animal welfare
- How can we measure animal welfare

Animal welfare issues affecting global cattle production

- Alternatives to painful procedures
- Alternatives to restrictive housing
- Care of compromised cattle
- Low stress handling

Animal welfare and sustainability

1992 United Nations' Conference on Environment and Development (“*Earth Summit*”) three key goals of sustainable development

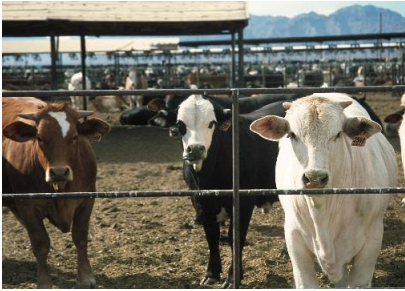
- Social justice
- Economic development
- Environmental protection

#4 = Animal welfare



¹Rawles, K.. 2008. Environmental ethics and animal welfare: re-forging a necessary alliance. In M. S. Dawkins and R. Bonney (eds.). *The Future of Animal Farming*. Blackwell Publishing, Oxford, UK. p 45-60.

Definition of Animal Welfare



Animal welfare means how an animal is coping with the conditions in which it lives. An animal is in a good state of welfare if (as indicated by scientific evidence) it is healthy, comfortable, well-nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear, and distress.

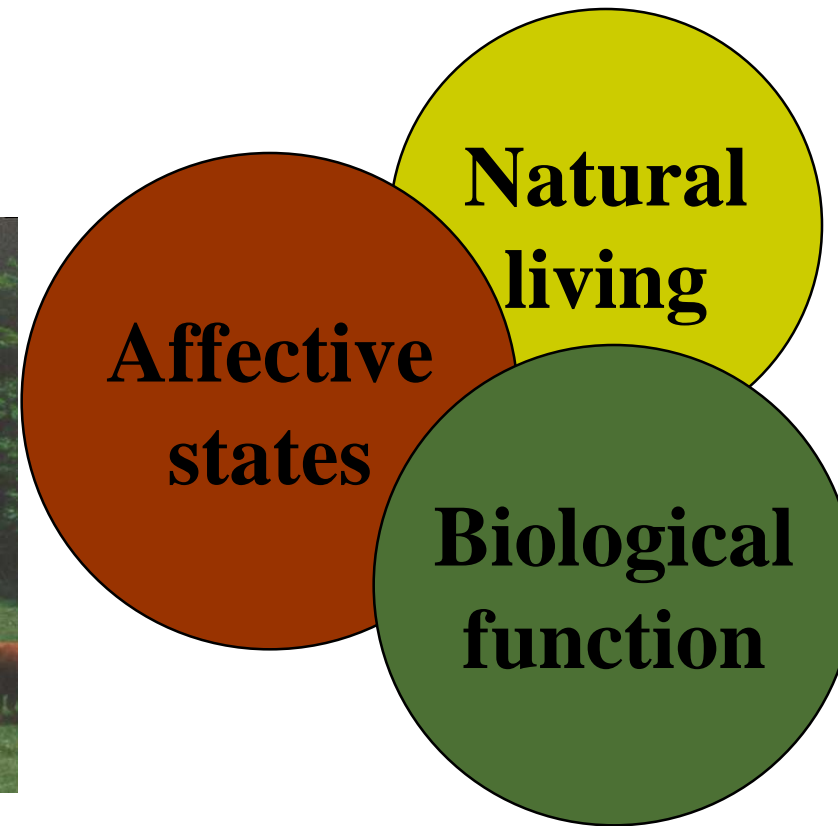


Good animal welfare requires disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing. Animal welfare refers to the state of the animal; the treatment that an animal receives is covered by other terms such as animal care, animal husbandry and humane treatment'

OIE [World Organization for Animal Health], 2013. Chapter 7.1 Accessed online:

http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_1.7.1.htm

A scientific concept of animal welfare that reflects ethical concerns¹

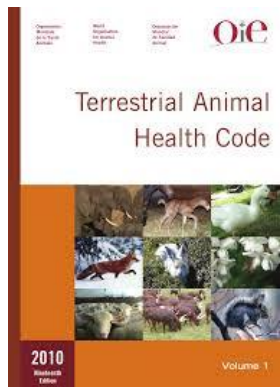


¹Fraser *et al.* 1997. *Animal Welfare* 6:187-205

Resources available: research articles and policy guidance documents



- Universities Federation for Animal Welfare (1928): www.ufaw.org.uk
 - “University Links” program, scholarships, grants
 - International Animal Welfare Science Society



- OIE (World Animal Health Organization) international standards on animal welfare (2005): <http://www.oie.int/animal-welfare/>



Frameworks to address issues:

Five Freedoms of Animal Welfare

1. Freedom from hunger, thirst and malnutrition – by ready access to fresh water and a diet to maintain full health and vigor
2. Freedom from thermal or physical distress - by providing an appropriate environment including shelter and a comfortable resting area
3. Freedom from pain, injury and disease – by preventing or by rapid diagnosis and treatment
4. Freedom to display most normal patterns of behavior – by providing sufficient space, proper facilities and company of the animals' own kind
5. Freedom from fear and distress – by ensuring conditions and treatment to avoid mental suffering

Brambell FWR, 1965. Report of the Technical committee to inquire into the welfare of animals kept under intensive livestock husbandry systems. Her Majesty's Stationary Office, London, UK.

Changing social contract with animals - Amsterdam Treaty (1997)

“Desiring to ensure improved protection and respect for the welfare of animals as sentient beings, have agreed upon the following provision, which shall be annexed to the Treaty establishing the European Community, in formulating and implementing the Community’s agricultural, transport, internal market and research policies, the Community and the Member States shall pay full regard to the welfare requirements of animals, while respecting the legislative or administrative provisions and customs of the Member States relating in particular to religious rites, cultural traditions and regional heritage.”

U.S. farm animal laws

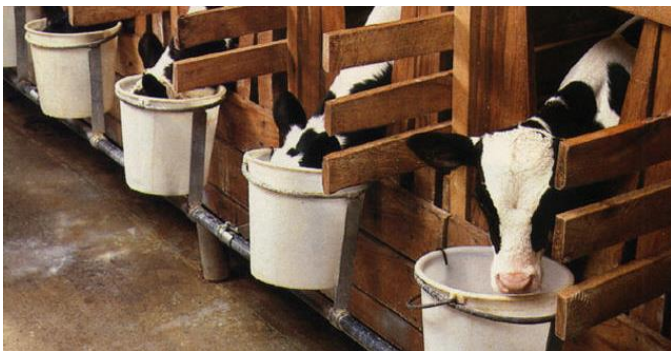


Federal (national) laws

- 28 Hour Law (livestock transportation)
- Humane Slaughter Act

In some States, certain farming practices are illegal, but these are acceptable in other States

- Sow gestation stalls (AR, CA, CO, FL, ME, MI, OH, OR, RI)
- Veal calf stalls (AR, CA, CO, KY, ME, MI, OH, RI)
- Tail docking cattle (CA)
- California: “Animals [laying hens, gestating pigs, veal calves] must have sufficient space to lie, turn around, groom, stretch limbs freely”

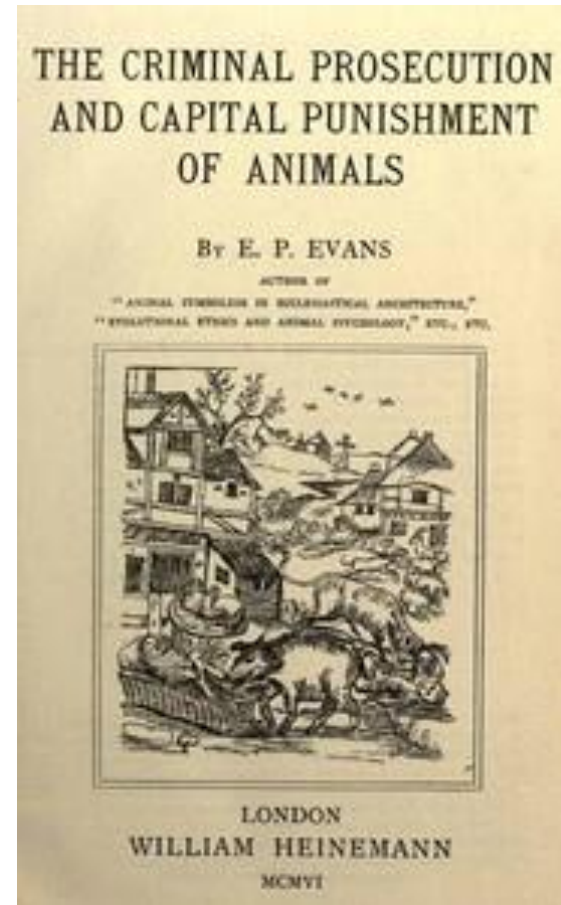


Social contract and the legal status of animals - “partial personhood”

Animal trials common during
13th-16th centuries

In 1567, a sow was imprisoned by the royal notary of the court in France for murder. She was subsequently convicted and sentenced to hang.

In the USA in 1916, elephant “Mary” was convicted of murdering her trainer and hung using a crane



Animal welfare & social responsibility emerge in niche & mainstream markets



* Meets the Humane Farm Animal Care Program standards, which include nutritious diet without antibiotics, or hormones, animals raised with shelter, resting areas, sufficient space and the ability to engage in natural behaviors.





Welfare assessments and audits

- Welfare assessments
 - Gather and analyze relevant data to determine compliance, areas for correction
 - 1st party, self- assessment
 - 2nd party (expert, consultant) to provide advice

- Welfare audits
 - Verify compliance to a standard or regulation, no advice for correction
 - 3rd party inspectors to avoid conflict of interest

Understand animal welfare assurance

programs emerging in food production¹



- Type 1: Provide for health and functioning
- Type 2: Provide for affective states
- Type 3: Provide for natural behavior
- Type 4: Provide for natural experiences

¹Fraser, D., 2006. Animal welfare assurance programs in food production: a framework for assessing the options. *Animal Welfare* 15:93-104.

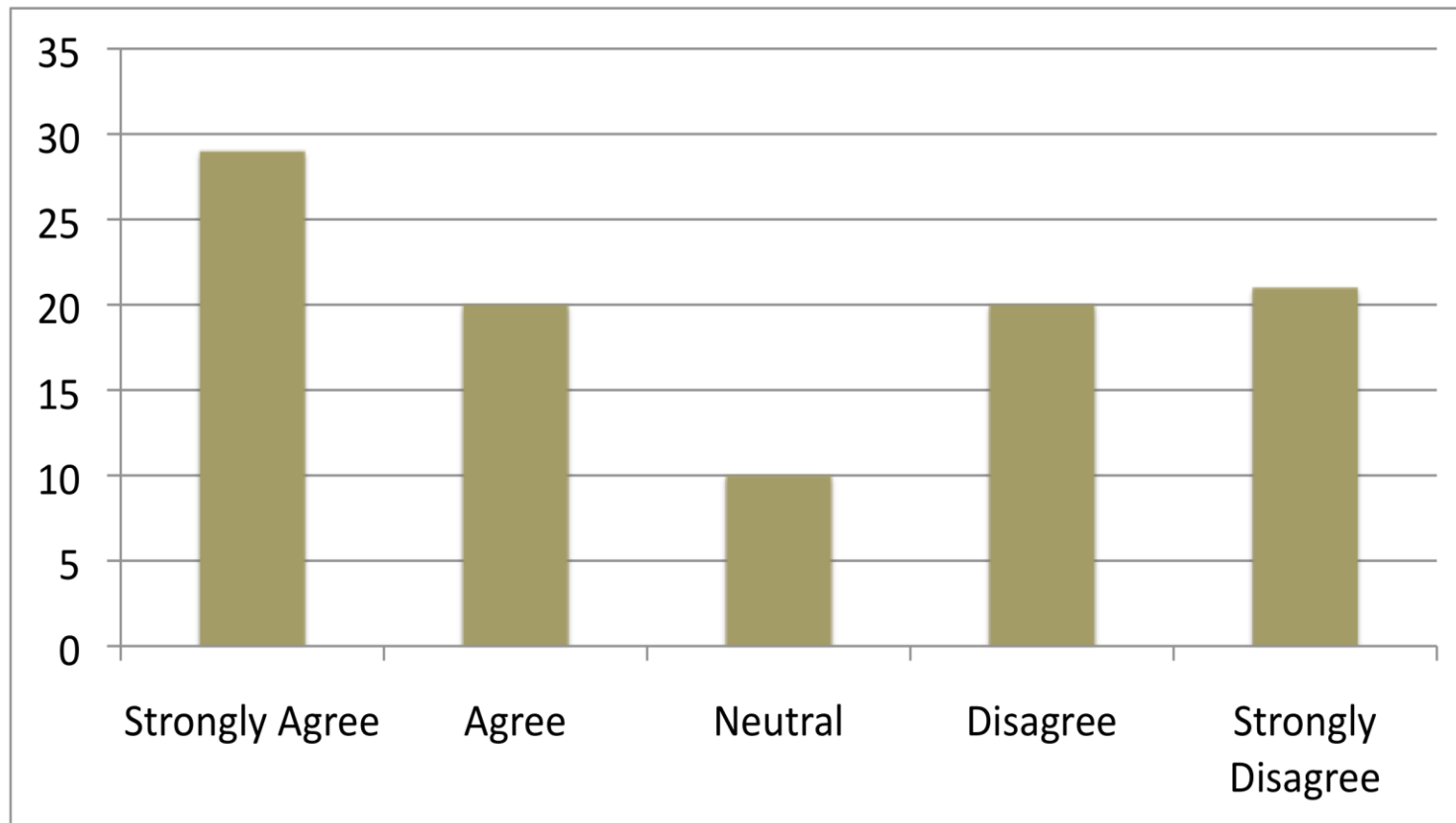
What do we know about current U.S. attitudes about farm animal welfare?¹

- American Farm Bureau survey of consumers, animal welfare ranks poorly relative to competing concerns¹
- Importance score for animal welfare: 4.15
 - 23.95 Poverty
 - 23.03 US health care system
 - 21.75 Food safety



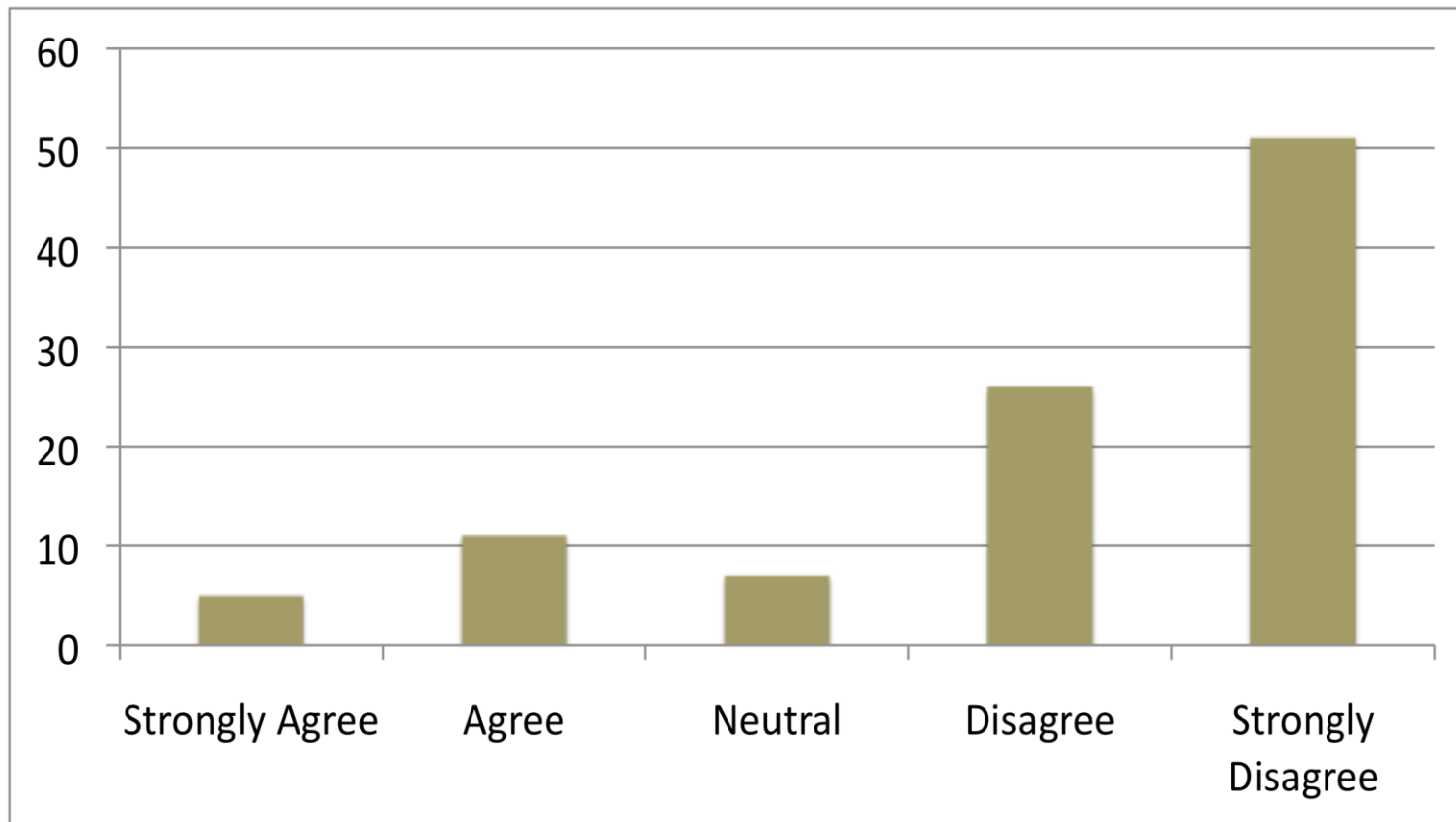
¹Lusk, J.L., B.F. Norwood, 2008. A survey to determine public opinion about the ethics and governance of farm animal welfare. *J Am Vet Med Assoc*, 233:1121-1126.

I consider well-being of farm animals when I make decisions about purchasing meat¹



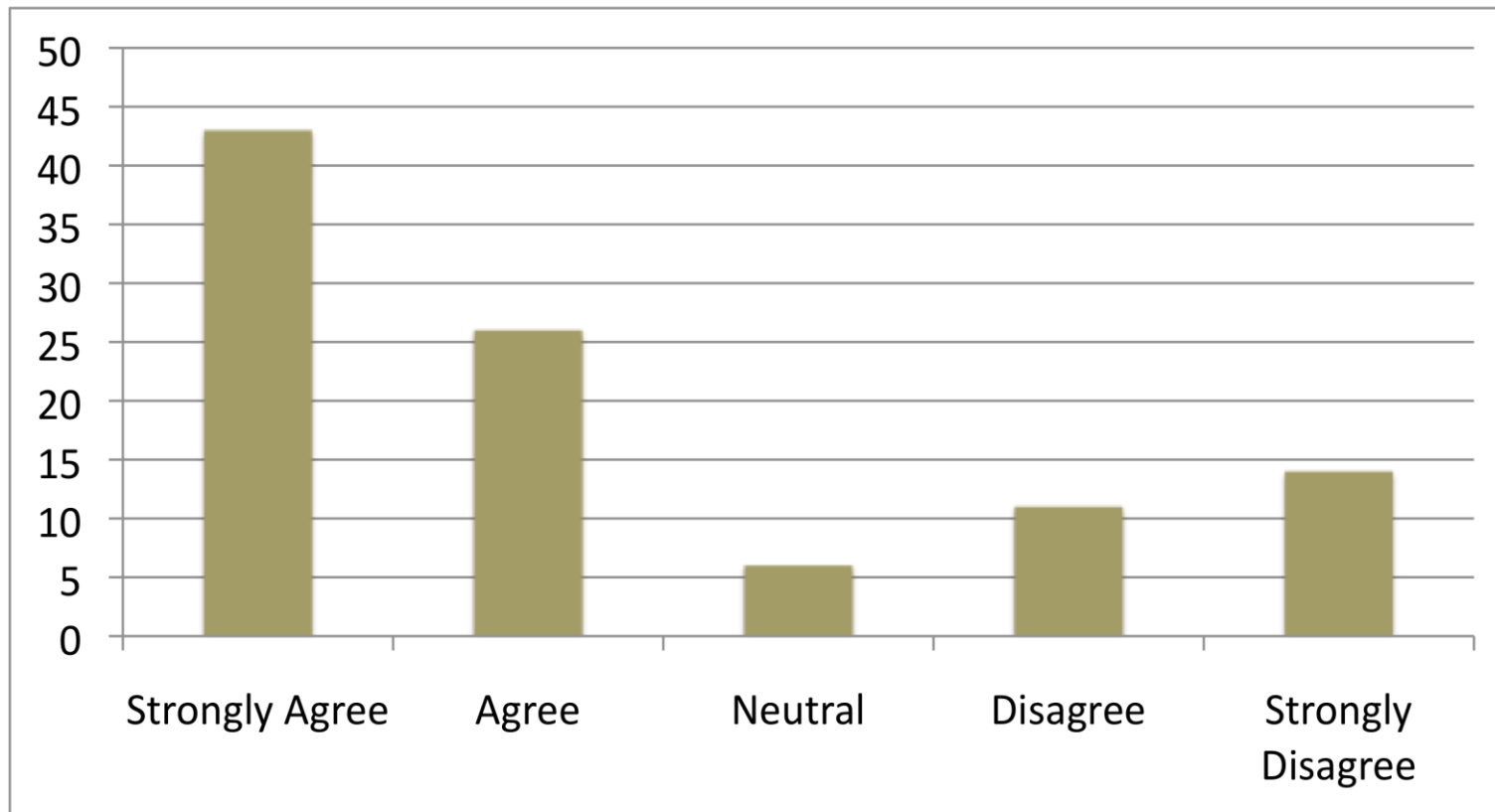
¹Prickett R.W., Norwood F.B., Lusk J.L., 2010. Consumer preferences for farm animal welfare: results from a telephone survey of U.S. households. *Anim Welf* 19:335-347.

Low meat prices are more important to me than well-being of farm animals¹



¹Prickett R.W., Norwood F.B., Lusk J.L., 2010. Consumer preferences for farm animal welfare: results from a telephone survey of U.S. households. *Anim Welf* 19:335-347.

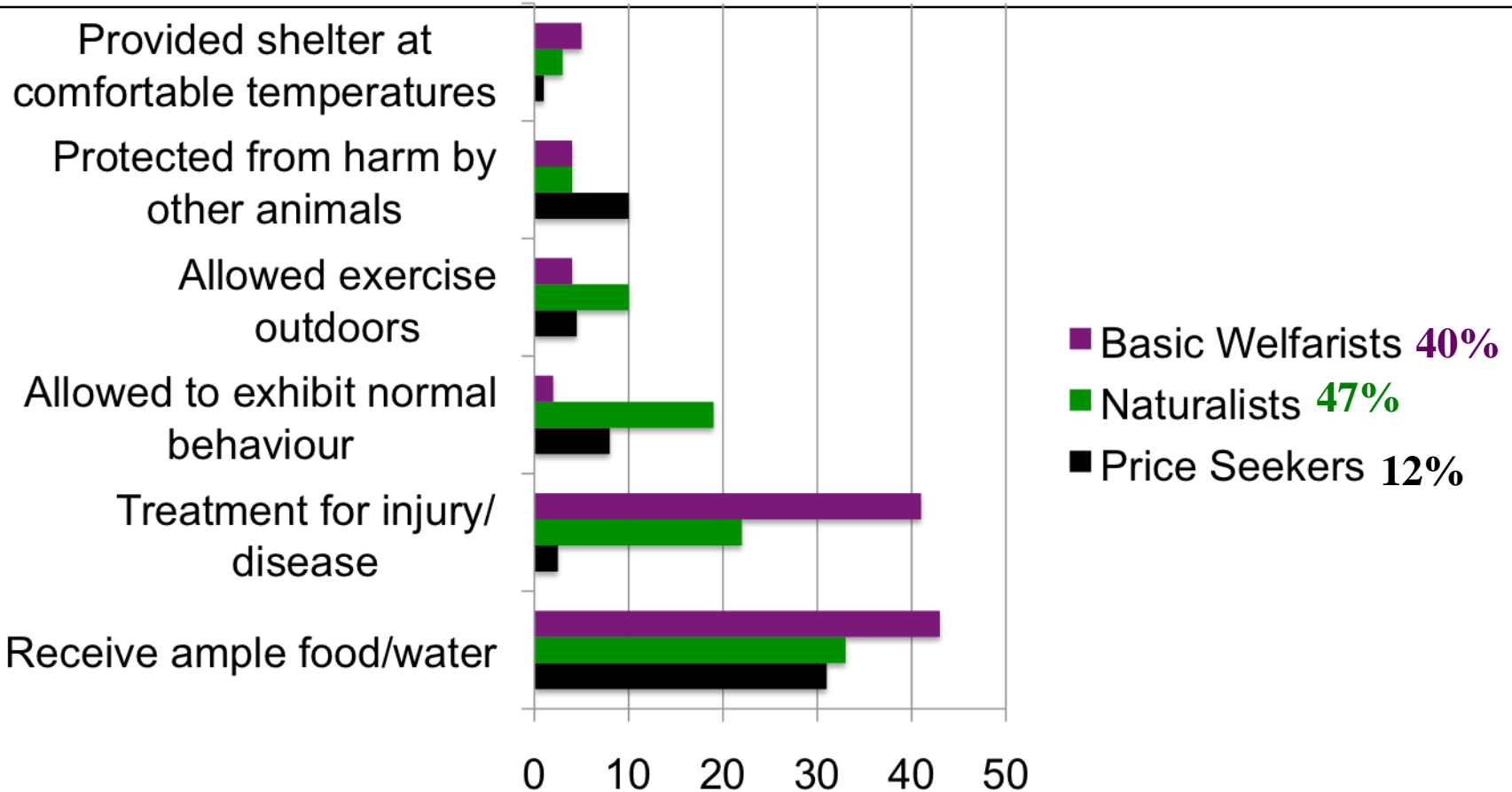
Government should take an active role in promoting farm animal welfare¹



¹Prickett R.W., Norwood F.B., Lusk J.L., 2010. Consumer preferences for farm animal welfare: results from a telephone survey of U.S. households. *Anim Welf* 19:335-347.

What expectations of animal care?

Importance score (out of 100%)¹



¹Prickett R.W., Norwood F.B., Lusk J.L., 2010. Consumer preferences for farm animal welfare: results from a telephone survey of U.S. households. *Anim Welf* 19:335-347.

2015 consumer survey of public opinion in U.S.¹

When asked to rank 12 life issues, animal welfare (47%) did not rank in top 5, but...

- *If farm animals are treated decently and humanely, I have no problem consuming meat, milk and eggs*
 - 60% strongly agree
- *U.S. meat is derived from humanely treated animals*
 - 25% strongly agree
- *I would support a law in my State to ensure the humane treatment of farm animals*
 - 53% strongly agree

¹Center for Food Integrity, 2015. A clear view of transparency and how it builds consumer trust. 2015 Consumer Trust Research. CFI, Gladstone, MO. <http://www.foodintegrity.org/research/>

2015 consumer survey of public opinion in U.S.¹

Who is responsible for transparency on issues of farm animal welfare?

- ❑ Food companies – 49%
- ❑ Farmers – 30%
- ❑ Grocery stores – 11%
- ❑ Restaurants – 10%

¹Center for Food Integrity, 2015. A clear view of transparency and how it builds consumer trust. 2015 Consumer Trust Research. CFI, Gladstone, MO. <http://www.foodintegrity.org/research/>

Customer demand for cage-free eggs¹

- In March 2016, cage-free eggs sold at \$2.49/dozen; conventional eggs sold at \$1.07/dozen
- In 2016, 4.7% of U.S. non-organic table egg layer flock is managed in non-cage systems
 - 48% of current non-organic flock of 276 million birds will need to be cage-free by 2025 to meet demand of 20 grocery chains, 38 restaurant chains & 5 food service distributors

Can it be done? At what cost?

¹United Egg Producers (UEP), 2016. United Voices. Accessed online, April 15, 2016
. <http://www.unitedegg.com/newsletter/includes/NewsletterPDF.cfm?date=04-15-2016>.

What animal welfare issues are affecting global animal production?



Alternatives to painful husbandry procedures



Pain is a negative subjective experience

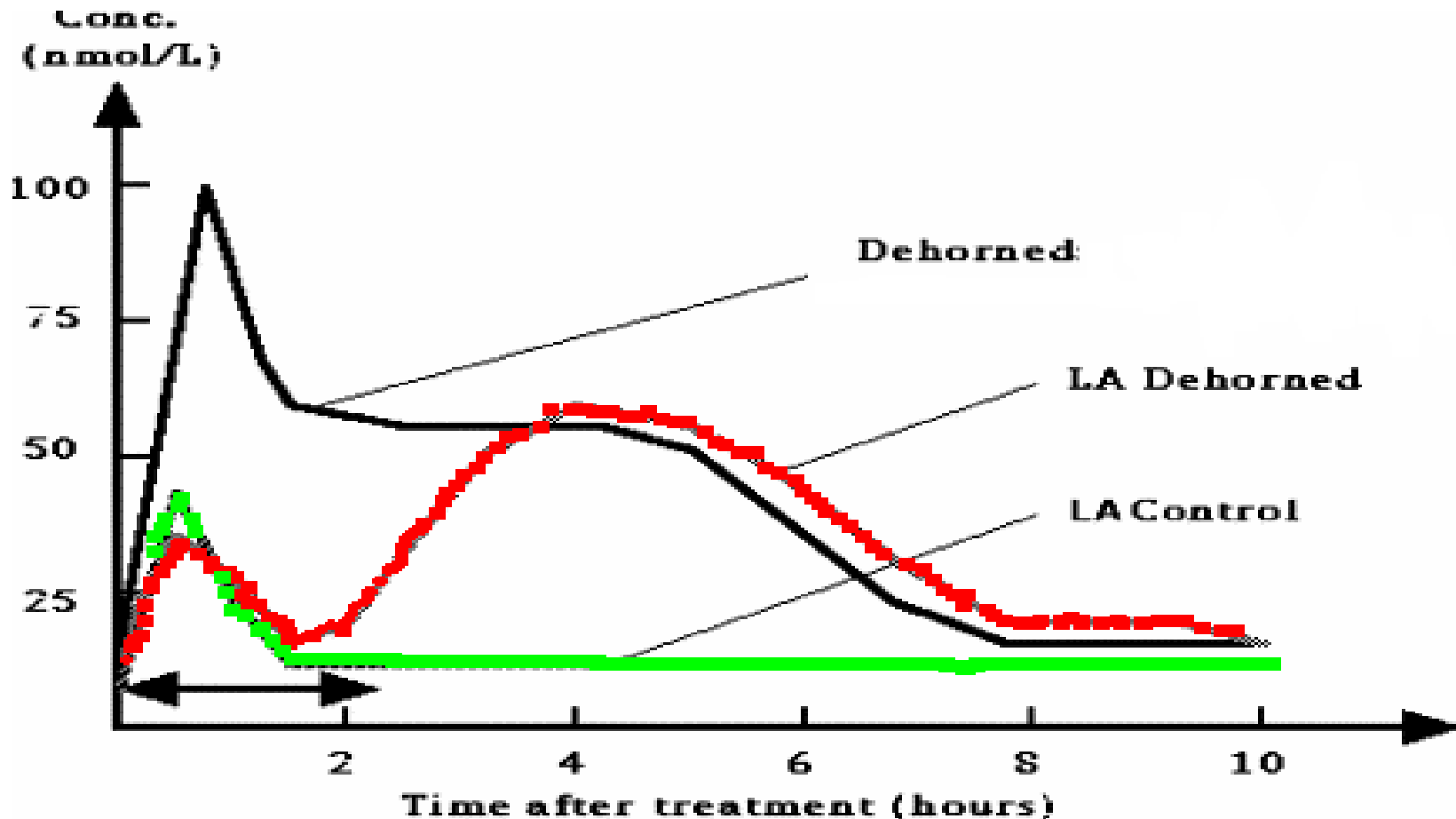
Regardless of species, we can only gain an understanding of how an animal(**or person**) “feels” by indirect measures

Animal welfare in practice

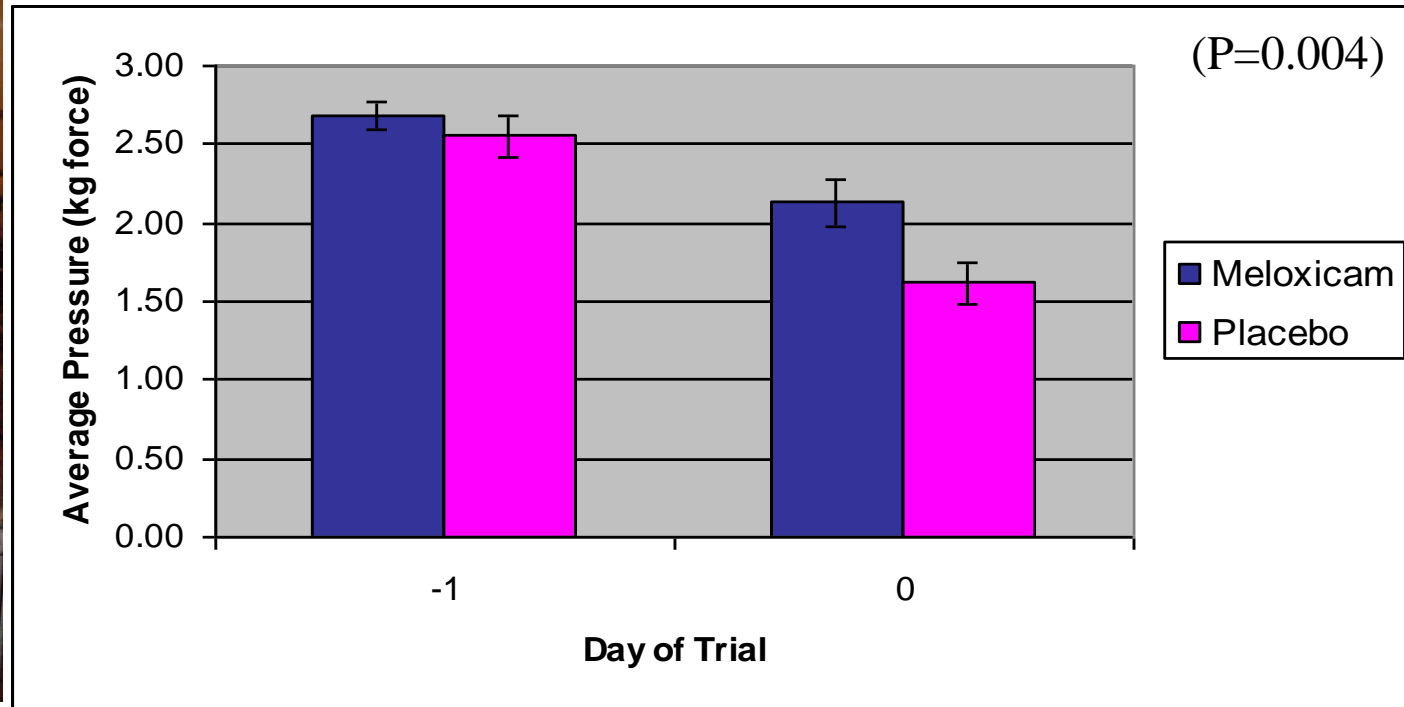
- which is better?



Cortisol Response to Dehorning



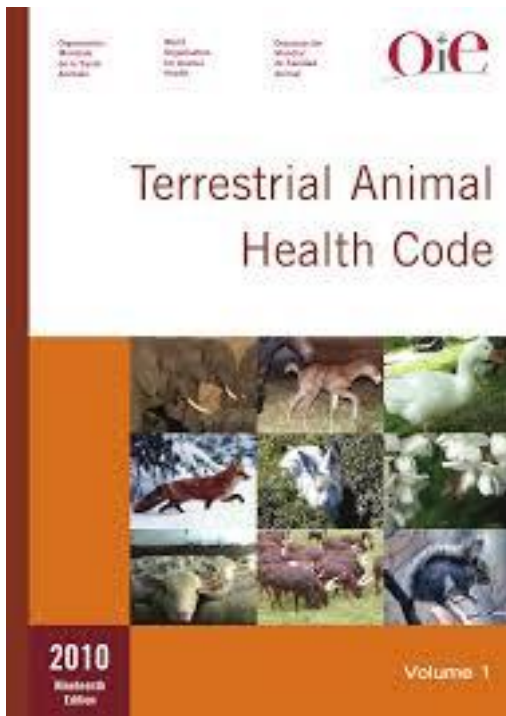
Pressure algometry: “ask” the calf about pain when given analgesic drug



OIE standard – Ch. 7.9 Animal welfare in beef cattle production

Painful husbandry procedures:

- Performed in such a way as to minimise any pain and stress to the animal.
- Performed at as early an age as possible or using anaesthesia or analgesia under the recommendation or supervision of a *veterinarian*.
- Future options:
 - Ceasing the procedure and addressing the current need for the operation through management strategies;
 - Breeding cattle that do not require the procedure;
 - Replacing the current procedure with a non-surgical alternative that has been shown to enhance *animal welfare*.



Alternatives to restrictive housing



Benchmarking: 317 tie-stall dairy farms in Ontario, Canada/17,893 individual cows

- 90% of farms had stalls with dimensions less than the Recommended Code of Practice
- 23% of cows had severe hind claw rotation, suggesting lameness. Negative association with milk yield (P=0.015)
- 3.8% of cows had neck lesions
- 3% of cows had broken tails; 5% of farms had >15% of cows with broken tails. Positive association with SCC (P=0.016)

Score Your Farm, Ontario Tie Stalls

(Zurbrigg et al, 2005. Can. Vet. J. 46:902) 317 dairy farms in Ontario, Canada/17,893 cows

Problem	Best 20% of farms	2 nd best	Middle 20% of farms	2 nd worst	Worst 20% of farms
Swollen hocks	0-3.8% cows	3.9-8.8%	8.9-15.4%	15.5-25.7%	25.8-60.8%
Hock wounds	0.1% cows	1.1-3.4%	3.5-6.9%	7.0-12.2%	12.3-100%
Neck lesions	0% cows	0%	0-1%	1.1-4.1%	4.2-47.8%
Broken tails	0% cows	0%	0-1%	1.1-5.0%	5-50%
Dirty hind limbs	0-2.9%	3-8.7%	8.8-18.2%	18.3-36.1%	36.2-94.4%
Hind claw rotation	0-6.7%	6.8-14.6%	14.7-22%	22.1-34.2%	34.3-73.7%

Animal welfare assessment & auditing: Is it worth it?

- Self-auditing as a management tool
 - Some welfare-relevant data is already collected in production software systems (ie: pedometers, feed consumption, milk yields and SCC)
 - Helpful to know where the “dirty laundry” is and plan ahead.
 - Benchmarking progress. Choose what welfare criteria you are interested in addressing (ease, profitable, interest)

- Documentation
 - Proof of following best management practices in response to complaints

Caring for the compromised animal



Jean Francois Millet, 1864

Animal welfare policy for care of compromised cattle

- ❑ Legal regulations for transport of ill or injured animals
- ❑ Requirements by slaughter and meat processing facilities
- ❑ Voluntary guidelines and educational materials by cattle industry

CARING FOR COMPROMISED CATTLE



TRANSPORT CANDIDATE

- Walks easily- not lame
- Healthy
- All withdrawal times met
- Body condition score of 2.5 or higher



DOWNER CANDIDATE

- Sick- fever greater than 104°
- Withdrawal times not met
- Thin- body condition score less than 2.5
- Cancer eye, blind in both eyes
- Animal can not be humanely loaded and transported
- Broken leg, lameness



If cattle become non-ambulatory, which means they cannot rise from a recumbent position or cannot

DECISION MAKING STEPS TO PREVENT DOWNER COWS

The following steps taken by producers will assist in the early detection of problems and allow producers to properly address them in a timely manner.

- PREVENTION- Facility designs, choice of equipment, low stress handling, herd health programs and biosecurity will help to prevent many cattle health problems.
- OBSERVATION- Cattle should be observed several times a day, especially at feeding. Early detection of sickness and timely treatment are key in minimizing discomfort to the animal.
- TREATMENT- Treatment should be administered as soon as possible to prevent the animal's condition from deteriorating. Consult with your veterinarian to develop a sound treatment program and herd health protocol.
- SEPARATION- Segregate sick or compromised cattle into designated "hospital" pens to allow close observation and treatment of the animal.
- TRANSPORT- Once it's determined animals are fit for transport, decide where and when to ship them, ensuring all withdrawal times have been met.
- EUTHANIZE- All animals unfit for transport or unfit for human con-

Farmer awareness of transport regulations

- In a survey of 49 dairy farms in Netherlands
 - 80% of farmers recognized that a cow with a broken limb should not be transported

However,

- 68% believed transport was suitable for lame cows
- 61% believed transport was suitable for feverish cows (>31.9C)
- 79% believed transport was suitable for severely malnourished cows

Caring for the compromised cattle at the farm – before decision to ship

- In a survey of Iowa dairy farmers, 80% of farmers had an area to move sick or injured cows away from the herd
 - Those that did not have hospital pens kept sick cows in barn vs pasture, or separated the sick cow within the free stall area
 - 100% of large farms (>1000 cows) had designated hospital pen vs 39% small farms (<100 cows)
 - 27% of organic farms had designated hospital pen
- Key reasons for moving a cow to the hospital pen were well-being (62%), cow comfort (51%), ease of observation (45%)

What are the behavioural needs of convalescent animals?



- ↓ food consumption
- ↓ water consumption
- ↓ activity
- ↓ exploration
- ↓ social behavior
- ↓ grooming

- ↑ slow-wave sleep
- ↑ thermoregulation
- ↑ nociception

“Special Needs Pen” – is this an effective hospital environment?



- Hospital pens also included
 - fresh cows (46% of farms)
 - calving (35% of farms)
 - close-up cows (35% of farms)

Alternatives to stressful handling



Assessing welfare in “real world”: Slaughter plant audits



- Temple Grandin began doing slaughter audits in the 1990s for the USDA & retailers

- Benchmarking
 - Vocalizations
 - Slips, falls, balks
 - Stunning

- Improving facility design & training programs
 - Behavior indicators
 - Meat quality
 - (Line efficiency)
 - (Worker safety)



Low stress handling

- Does not necessarily require more time
- Can be accomplished by working with the animal's innate and learned responses
 - Sensory perception
 - Social facilitation
 - Learned associations with equipment and people
 - Fear response, flight zone
- Requires attention to cattle behavior and to handler's own behavior re: what is communicated to animal
 - Postural signals, eye contact, predictable movement, speed, voice

Handling facilities that account for animal behavior & perception



- ❑ Visual or physical contact with other cattle ahead
- ❑ Solid sides to avoid distractions & contrasts
- ❑ Gradual slopes, non-slip flooring
- ❑ Curves to facilitate movement

Understanding how to guide cattle where you want them to go



Sorting calves with Dr. Joe Stookey, Western College of Veterinary Medicine:
<https://www.youtube.com/watch?v=P4FUE-OrXRw>

Animal welfare assurance – impacts on cattle production and export markets

- There is broad sustained public interest in animal welfare globally, international standards of care
 - Possible niche marketing opportunities
- Multidisciplinary approach
 - Behavior, health, physiology, performance (production)
 - Experienced at individual animal level
- Practical interventions exist to improve animal welfare
 - Evaluate interventions using animal outcome criteria
 - Animal welfare assessment tools provide opportunity to benchmark animal care and identify specific risk factors



Photographer: Yann Arthus Bertrand, *Beasts and Their Keepers*