Safeguarding farm animal welfare

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My background

- Wageningen University and Research Centre
  The Netherlands, since 1979
- Swedish University of Agricultural Sciences
  Uppsala, Sweden, since 2007

Animal Behaviour:
- Welfare assessment
- Housing & management
- Alternative housing systems

My background

- FP4: Coordinator of 2 collaborative projects (1997 – 2001)
- FP6: Coordinator of:
  - Specific Support Action (SSA) (2004)
- FP7: Coordinator of:
  - EAWP (2008-2011)
    Partner in:
    - AWARE
    - EU-PLF
- SANCO: Coordinator of EUWelNET
- Horizon2020: Partner in Hennovation

Collaboration in EU projects

Veterinary and animal science

- 450 employees and around 200 doctoral students
- Facilities for 1000 students
- Animal hospital (small animals and horse clinic)
Veterinary and animal science
- 450 employees and around 200 doctoral students
- Facilities for 1000 students
- Animal hospital (small animal and horse clinic)
- Experimental facilities for cattle, pigs and poultry

Collaborations in Horizon2020

Safeguarding farm animal welfare
- Animal welfare, what are we talking about?
- Safeguarding AW; for whom? Why?
- The Welfare Quality approach
- Precision Livestock Farming
- European (EU) developments

Animal welfare
Views on animal welfare

Physical
Good growth, no physiological stress, healthy

Mental
No fear, anxiety, frustration

Naturalness
Natural behaviour

The OIE welfare definition
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.

Naturalness
Mental
Physical
The OIE welfare definition

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

- Output
- Input

Safeguarding farm animal welfare

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'Actors' in the food chain

Consumers
Food companies
Farmers
General public

Safeguarding animal welfare

Importance of animal welfare

General public

How important is it to protect the welfare of farm animals?
Many public concerns get scientific support (c.f. EFSA scientific reports)

Concerns, e.g.:
- barren environment
- high stocking densities
- transport
- mutilations

Top concerns in Member States (SPECIAL EUROBAROMETER 354 (2010) Food-related risks)

Would you like to have more information about the conditions under which farmed animals are treated in your country?

General public

Thus: animal welfare is among the important public concerns regarding food and the public would like to be more informed

A large part of animal products (80% of 300) surveyed in 10 most popular retailing outlets of six EU countries (UK, Italy, Norway, France, Netherlands, Sweden) were communicating to consumers some aspects of farm animals’ lives or the production methods adopted.

Half of these products were carrying welfare claims that were not supported by any specific welfare-friendly production standard.

In all cases they were bundled with other quality specifications (e.g. better taste, higher safety, environmental friendliness, and so forth).
Animal welfare in the market

Animal welfare is an important aspect in the marketing of large food producing companies.

World's largest restaurant chain, serving over 69 million customers daily in over 100 countries across approximately 36,900 outlets.

Unilever owns over 400 brands (e.g. Axe, Dove, Omo, Becel, Hellmann’s, Knorr, Lipton, Lux, Magnum, Rama, Rexona, Sunsilk), with a turnover in 2016 of over 50 billion euros.

Largest food company in the world with 447 factories in 194 countries. Products include baby food, medical food, bottled water, breakfast cereals, coffee and tea, ice cream, frozen food, pet foods and snacks.

Food companies

In quality food chains and markets, animal welfare is increasingly an important attribute of an overall conception of food quality: business opportunity.
‘Actors’ in the food chain

- General public
- Food companies
- Consumers

Product information

Consumers

EU special barometer on attitudes of EU citizens (March 2007)

Thinking of animal welfare

Consumers

animal welfare is not at the forefront of consumers when shopping for food

Willingness to pay

Consumers

Would you be willing to pay more for products sourced from animal welfare-friendly production systems?

59%

Consumers

Willingness to pay

Is willingness to pay realized in the shop?

- growing trends in the size of the market share of animal friendly products, e.g.:
  - organically produced products
  - non cage eggs
  - various welfare labelled products (e.g. ‘Beter Leven’ and ‘RSPCA Assured / Freedom Food’)
- recent survey in Sweden: 10 % of Sweden’s population are now vegetarian or vegan, where the number was 6 % 5 years ago

‘Actors’ in the food chain

Consumers

Consumers want more information on animal welfare and there seems to be some ‘willingness to pay’ for animal welfare
’Actors’ in the food chain

- General public
- Food companies
- Consumers
- Farmers

Farming and animal welfare

Farmers

- Farmers want to take good care of their animals
- They recognise the link between good welfare and good economics
  - welfare → market demands
  - welfare → production costs

Bad welfare affects production/economy

Table 1: The effects of different types of lameness (sole ulcer, digital dermatitis, foot rot) on net return, lameness cases, % of lameness treated, average cost of lameness and average cost per case, following an optimal replacement policy

<table>
<thead>
<tr>
<th>Lameness Type</th>
<th>Net Return</th>
<th>Lameness Cases</th>
<th>% Lameness Treated</th>
<th>Average Cost Lameness</th>
<th>Average Cost Per Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>426.35</td>
<td>23.5</td>
<td>94.1</td>
<td>41.74</td>
<td>177.62</td>
</tr>
<tr>
<td>Digital dermatitis and foot rot</td>
<td>393.50</td>
<td>7.1</td>
<td>95.5</td>
<td>9.44</td>
<td>132.96</td>
</tr>
</tbody>
</table>

Farm managers underestimate lameness prevalence

Comparison of observed lameness and farmers’ estimation (%)

Bad welfare affects production/economy

Bad feathered birds had 46% higher maintenance requirement than well feathered birds (Tauson and Svensson, 1980, Swedish J. agric. Res. 10, 35-39)
'Actors’ in the food chain

Farmers
- Farmers want to take good care of their animals
- They recognise the link between good welfare and good economics
- A need for animal welfare management support

Safeguarding farm animal welfare
- Animal welfare, what are we talking about?
- Safeguarding AW; for whom? Why?
- The Welfare Quality approach

The Welfare Quality® approach
- approx. 250 scientists
- 44 organisations
- 17 countries
- approx. 18 M € (15 M € from EU)

The Welfare Quality® approach
Main aim:
To develop a system to assess animal welfare in order to safeguard and improve animal welfare along the food chain
System should be useful to all interested parties in the food chain

Animal welfare
- Farmer
- Management
- Resources
- E.g.: feeding, use of range, weaning
- E.g.: litter, size of box, housing system

Welfare assessment
- Farmer
- Management
- Resources
- Animal welfare
- Earlier: mainly resource based welfare ‘assessment’
Legislation mainly resource based


Enriched cages
• From 1 January 2002:
  - 750 cm²/hen (600 plus)
  - nest
  - litter
  - 15 cm perch per hen
  - 12 cm feedtrough per hen
  - 2 nipple drinkers per cage
  - claw-shortening devices

Welfare assessment

The Welfare Quality project aimed to develop welfare assessment systems using animal based measures

The Welfare Quality® System

<table>
<thead>
<tr>
<th>Principle</th>
<th>Welfare criteria</th>
<th>Examples of potential measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good feeding</td>
<td>Absence of prolonged hunger</td>
<td>Body condition score</td>
</tr>
<tr>
<td>Good housing</td>
<td>Absence of prolonged thirst</td>
<td>Presence of drinker and routine for checking function</td>
</tr>
<tr>
<td>Good health</td>
<td>Absence of injuries</td>
<td>Clinical scoring; foot injuries, carcass damage, lameness</td>
</tr>
<tr>
<td>Good health</td>
<td>Absence of diseases</td>
<td>Enteric problems, downgrades at slaughter</td>
</tr>
<tr>
<td>Good health</td>
<td>Absence of pain induced by management procedures</td>
<td>Evidence of routine mutilations such as tail docking, shearing, stunning effectiveness at slaughter</td>
</tr>
<tr>
<td>Appropriate behaviour</td>
<td>Expression of social behaviours</td>
<td>Social isolation, aggression</td>
</tr>
<tr>
<td>Appropriate behaviour</td>
<td>Expression of other behaviours</td>
<td>Play, abnormal behaviour</td>
</tr>
<tr>
<td>Good human-animal relationship</td>
<td></td>
<td>Approach and/or avoidance tests</td>
</tr>
<tr>
<td>Good human-animal relationship</td>
<td>Absence of general fear</td>
<td>Novel object test</td>
</tr>
</tbody>
</table>

Animal based measures

Measures shall
• Be valid: measure aspects of animal welfare
• Be reliable: inter and intra observer reliability
• Cover all criteria → ~30 measures/animal type
• Be feasible on farms / at slaughter and require limited amounts of animal handling, time, cost, skills,…

Animal based measures

Injuries

- Wounds
- Scratches
- Location

Photos: University of Newcastle

Ears

Positive interaction - Normal
Neutral interaction - Ears

No interaction - Ears
Animal based measures

- Good housing
- Good feeding
- Appropriate behaviour
- Good health
- Expressing social behaviour
- Good human-animal relationship
- Expressing other behaviour
- Thirst
- Thermal comfort
- Comfort around resting
- Ease of movement
- No disease
- Positive emotional state
- Hunger
- No injuries
- No painful management procedures

Photos: Butterworth and de Jong

Integraion of information

Raw data -> Criteria -> Principles -> Overall assessment

- Raw data: 12 scores
- Principles: 4 scores
- Overall assessment: 1 Welfare category

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Precision Livestock Farming (PLF)

The use of advanced technologies to optimize the management of animal welfare and health

Management of animal welfare and health

- Environment
  - Climate
  - Care taker
  - Water
  - Feed
  - Conspecifics
  - Pathogens

- Time budget
- Resource use
- Social behaviour

Behavioural changes
CowView Technology

Description of the normal time budget of each cow

- Cow more active (eg walking) than normal ➔ alarm: oestrus?
- Cow less active (eg resting) than normal ➔ alarm: disease?

Veissier, 2016
Lack of enforcement of EU legislation by the Member States for the Welfare distress index, increased on 2012 European (EU) developments placed 24th, 72 related to animal welfare.

Many stakeholders lack sufficient knowledge about animal welfare aspects.

- Animal welfare, what are we talking about?
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- Precision Livestock Farming
- European (EU) developments

EFSA provides scientific advice in response to requests from the European Commission, the European Parliament and EU Member States.

EFSA Scientific opinions Panel on Animal Health and Welfare (AHAW)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Related to animal welfare (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008 - 2012</td>
<td>56</td>
<td>27 (48.2)</td>
</tr>
<tr>
<td>2013 - 2017</td>
<td>68</td>
<td>16 (23.5)</td>
</tr>
</tbody>
</table>

Source: www.efsa.europa.eu
European (EU) developments

EU platform on animal welfare

Dialogue on animal welfare issues among:
- Competent authorities
- Businesses
- Civil society
- Scientists

Coordinated actions:
- better application of EU rules on animal welfare
- development of voluntary commitments by businesses to improve animal welfare
- promotion of EU animal welfare standards to valorise the Union's products at the global level

A European network of reference centres for animal welfare

– Support Commission and Member States with technical expertise;
– Conduct training courses for staff from competent authorities;
– Contribute to dissemination of research findings and technical innovations among EU stakeholders and scientific community;
– Coordination of research

Feasibility study
- EUWelNet provided ‘proof of principle’ for a functional Coordinated European Animal Welfare Network
- The EUWelNet consortium and its Advisory Board strongly recommend that such a Network should be established
- The Network should be organised as a small number of interconnected regional centres (with regional partners), coordinated by a small professional unit

A European network of reference centres for animal welfare

First EU reference centres on animal welfare

The Commission launched a call for the selection of the first EU Reference Centre for animal welfare (13-10-2017)

Selected consortium:
Netherlands, Denmark, Germany

Focus on pigs
Thank you!