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Challenges and opportunities for animal welfare in organic and low-input dairy farming

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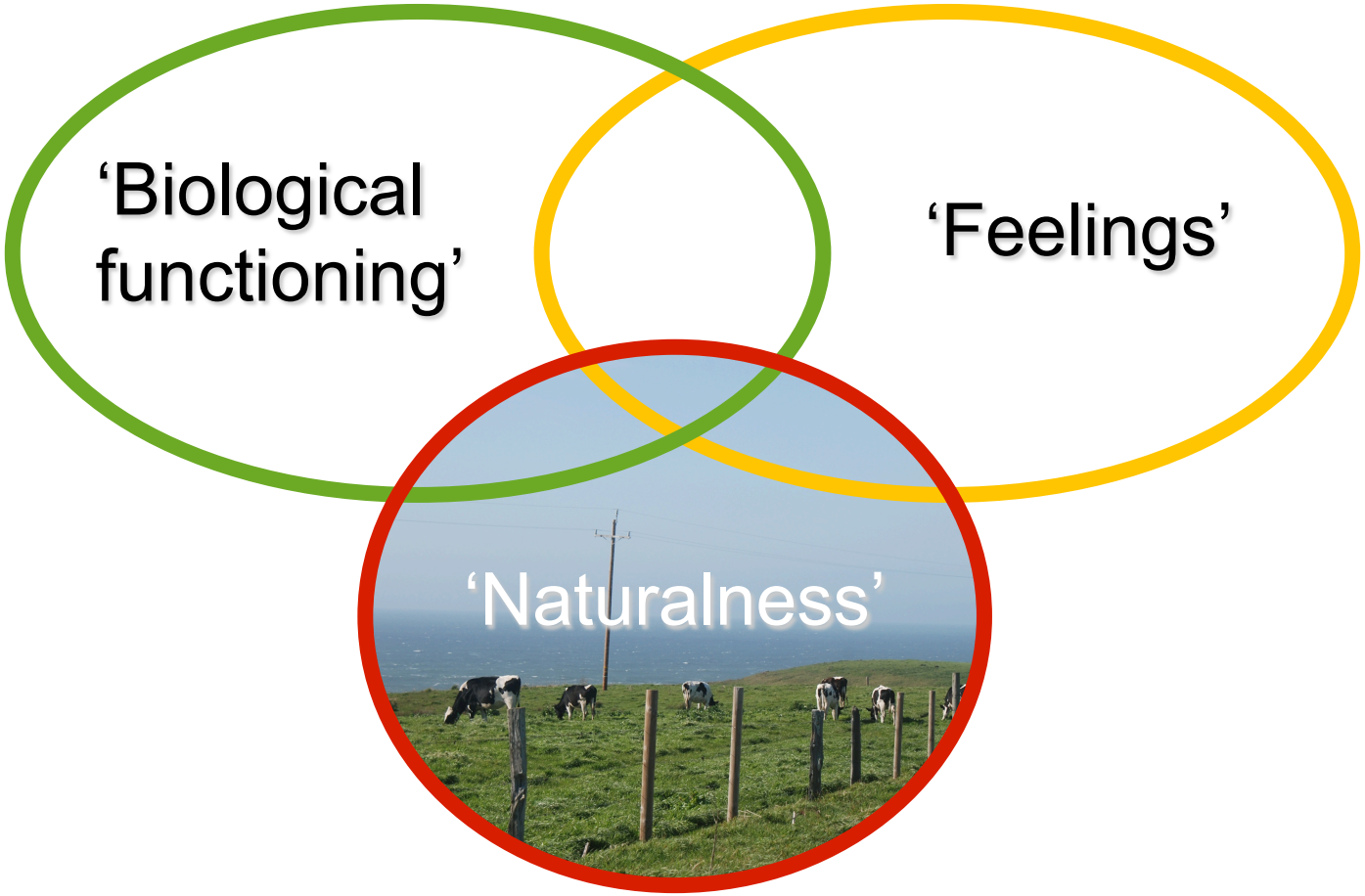
Background

- High animal **health and welfare status** important aim in sustainable organic and low-input livestock farming
- Essential part of the overall ‚**food quality concept**‘
- Generally expected to be positively associated with **more extensive housing and management** conditions



- ‚**Extensive**‘ = **good** welfare?
- Compliance with **resources requirements** = (at least) **acceptable welfare** states?
- **Welfare improvements** in these farming systems possible?

Definitions of animal welfare



Animal welfare potential of pasture-based systems

Opportunities to perform normal behaviours (e.g. grazing, exploration)

Fewer agonistic interactions

Lower metabolic load (?)

Lower risk of injuries, e.g. caused by flooring, equipment

Welfare issues in dairy production

‚Extensive/pasture-based‘

- Lameness
- Heat stress
- Human-animal interactions
- Painful procedures

Hemsworth et al. 1995, AABS 42:161

‚Intensive‘

- Production-related diseases (lameness, mastitis, metabolic disorders)
- Restriction of movement and behaviour
- Human-animal interactions
- Painful procedures

Animal welfare and Council Regulation (EC) No 834/2007

- Organic stock farming should respect high animal welfare standards and meet animals' species-specific behavioural needs…
- Husbandry practices… shall ensure that the developmental, physiological and ethological needs of animals are met.
- The livestock shall have permanent access to open air, preferably pasture…; tethering shall be prohibited.
- Any suffering, including mutilation, shall be kept to a minimum.

➢ **Detailed rules in Commission Regulation (EC) 889/2008**

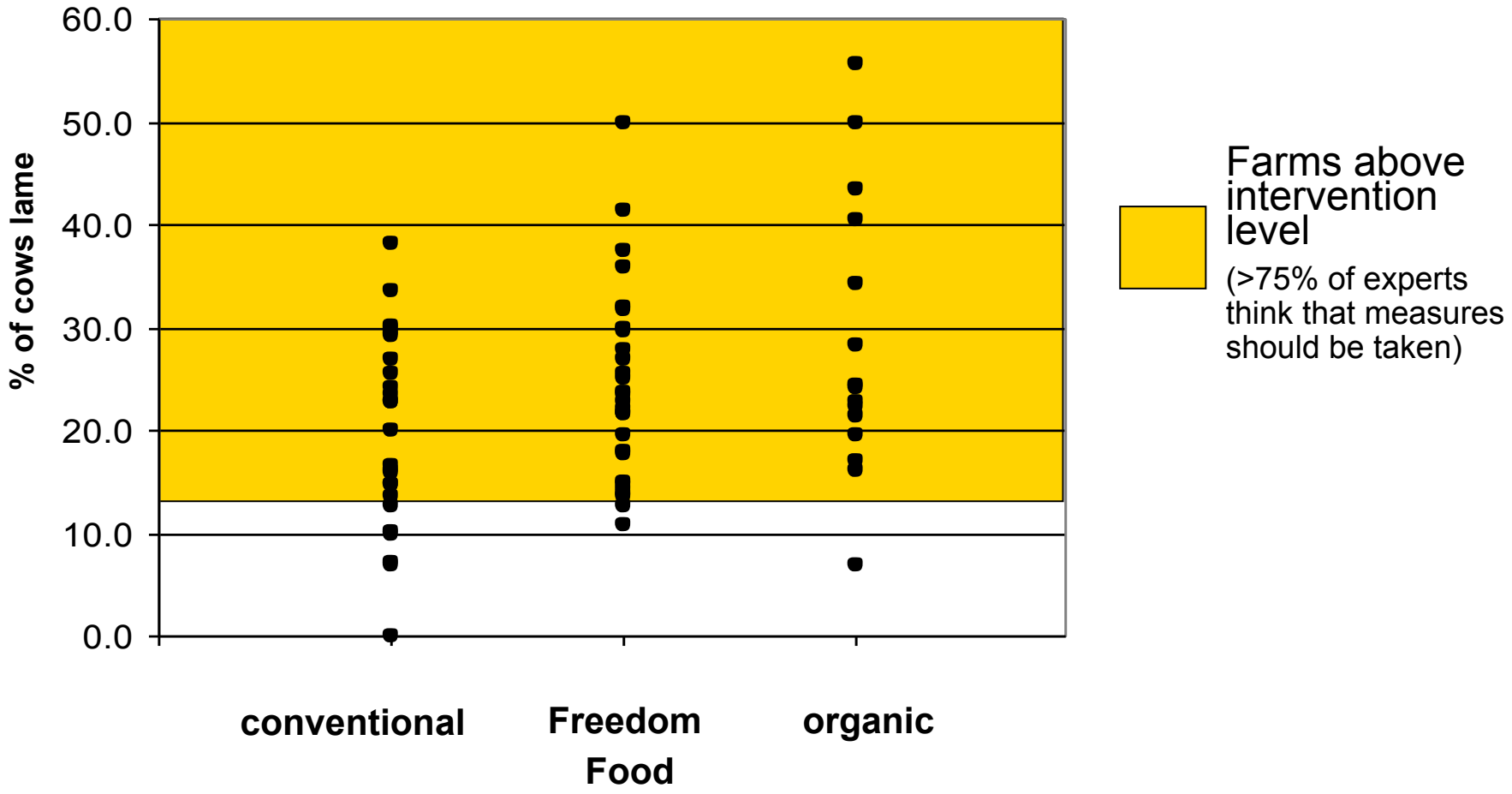
Resource based measures not necessarily appropriate indicators

Are 'Freedom Food' dairy farms better for animal welfare than conventional ones?

- Freedom Food > conventional:
  ↓ mastitis, ↓ non-hock injuries, ↑ cleanliness, ↑ BCS
- Freedom Food = conventional:
  sudden death, bloated rumen, hair loss
- Freedom Food < conventional:
  ↑ hock injuries, ↑ lameness, ↑ difficulties getting up

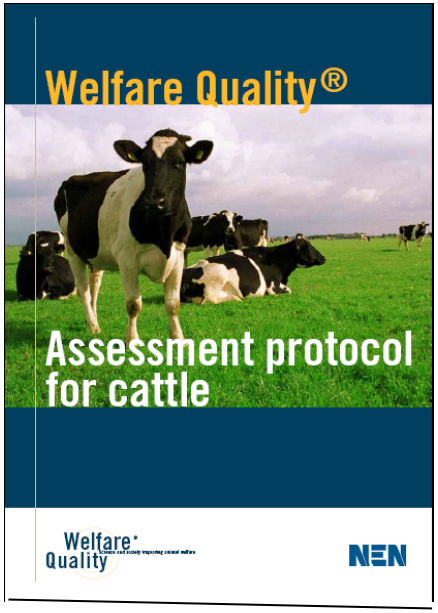
Main et al. 2003, Vet. Rec. 153:227

Lameness a relevant problem in dairy cattle, irrespective of farming system

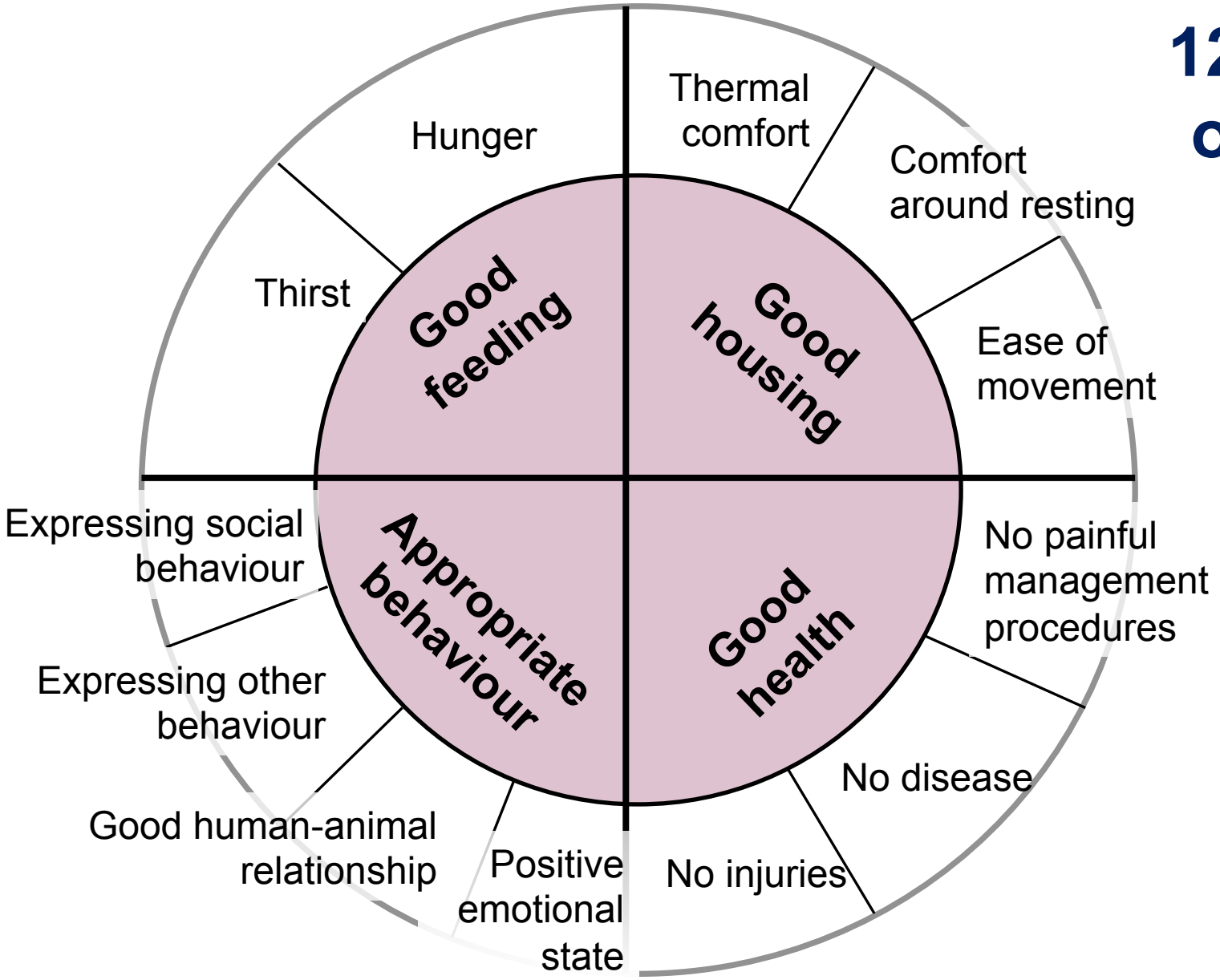


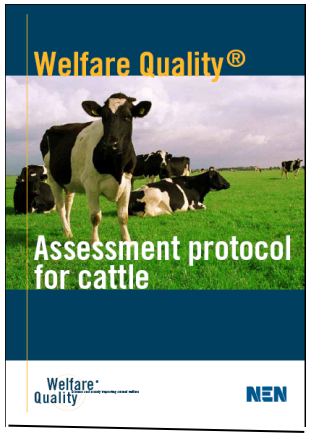
On-farm welfare assessment

- Protocols with a strong focus on animal-based (welfare outcome) measures have been developed, e.g.
  - Bristol Welfare Assurance Protocol (BWAP)
  - Welfare Quality®



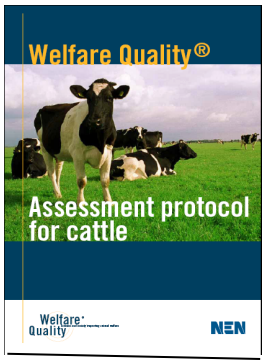
12 criteria of animal welfare in WQ®

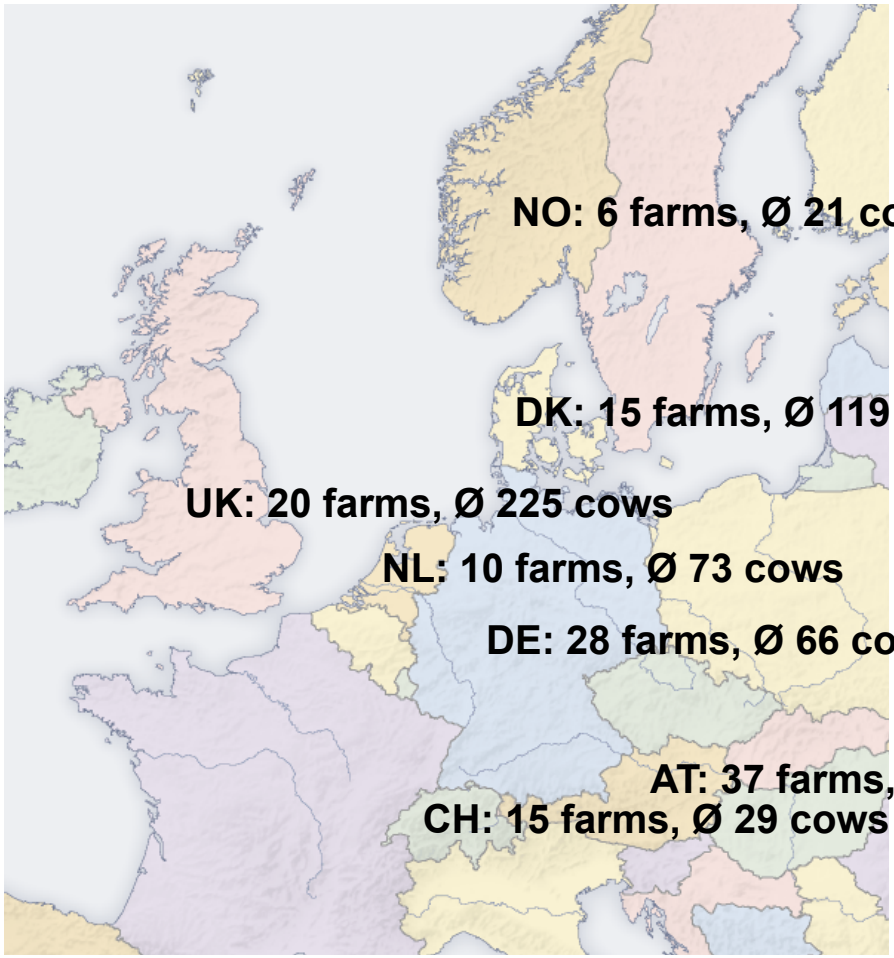




COREOrganic ANIPLAN

- 111 farms in six countries, average herd size 57 cows
- Application of the Welfare Quality® protocol





ANIPLAN results

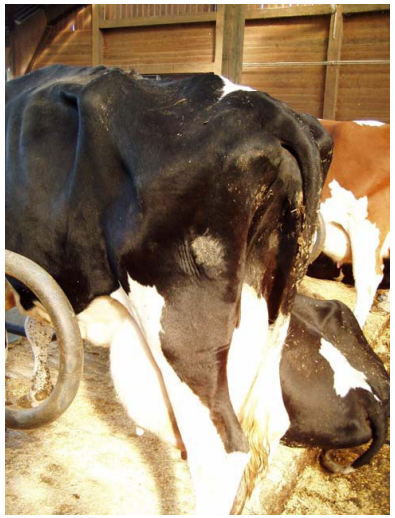
- Large variation between farms
- Main areas of concern:

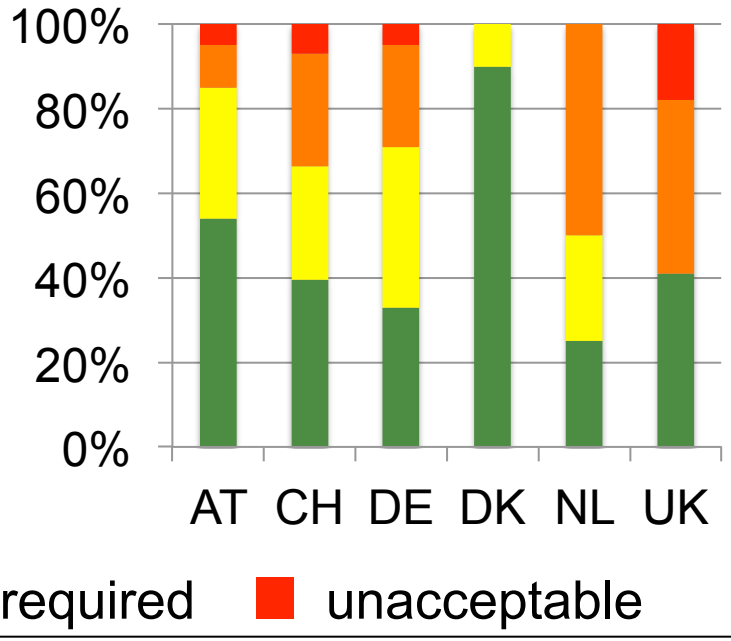
  Lameness
  Alterations of the integument
  Poor body condition (2 countries)
  Agonistic social behaviours (2 countries)
  Human-animal relationship (5 countries)

Selected welfare issues

Percentage of lean animals (%)

	AT	CH	DE	DK	NL	UK
median	0	5	5	0	8	13
range	0-50	0-36	0-64	0-8	0-20	0-37

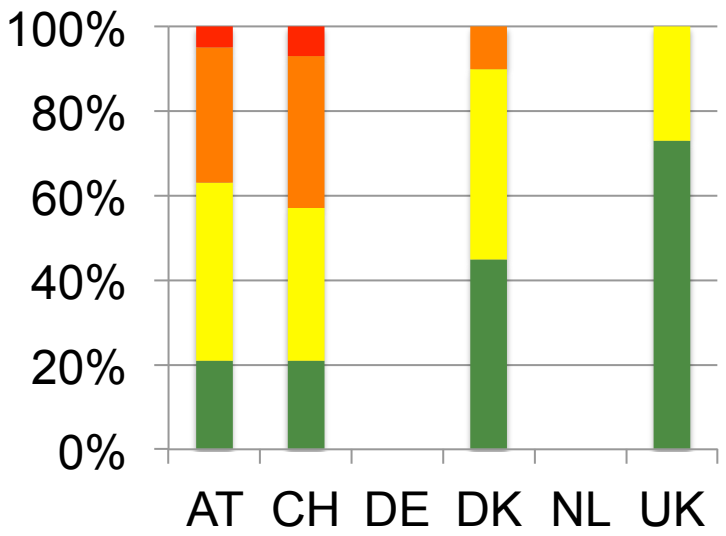




Selected welfare issues

Incidence of agonistic social behaviours (events/cow*h)

	AT	CH	DE	DK	NL	UK
median	1.1	0.9	-	0.7	-	0.4
range	0.1-3.7	0.2-3.5	-	0.2-2.6	-	0.1-0.8



OK action recommended action required unacceptable

- ‚**Extensive**‘ = **good** welfare?
- Compliance with **resources requirements** = (at least) **acceptable welfare** states?
- **Welfare improvements** in these farming systems possible?

Welfare improvement

Implementation = translating knowledge into action by inducing change in behaviour of humans through

- **Education** (awareness of problems and potential solutions)
- **Encouragement**
- Enforcement

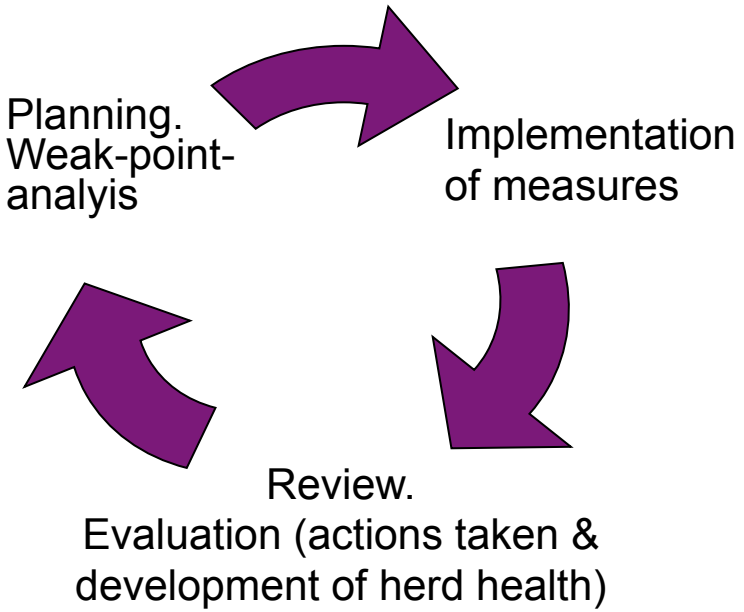
-> Herd health and welfare planning

Main & Whay 2009

Health and welfare planning principles

Management tool to identify and control health and welfare problems on a farm

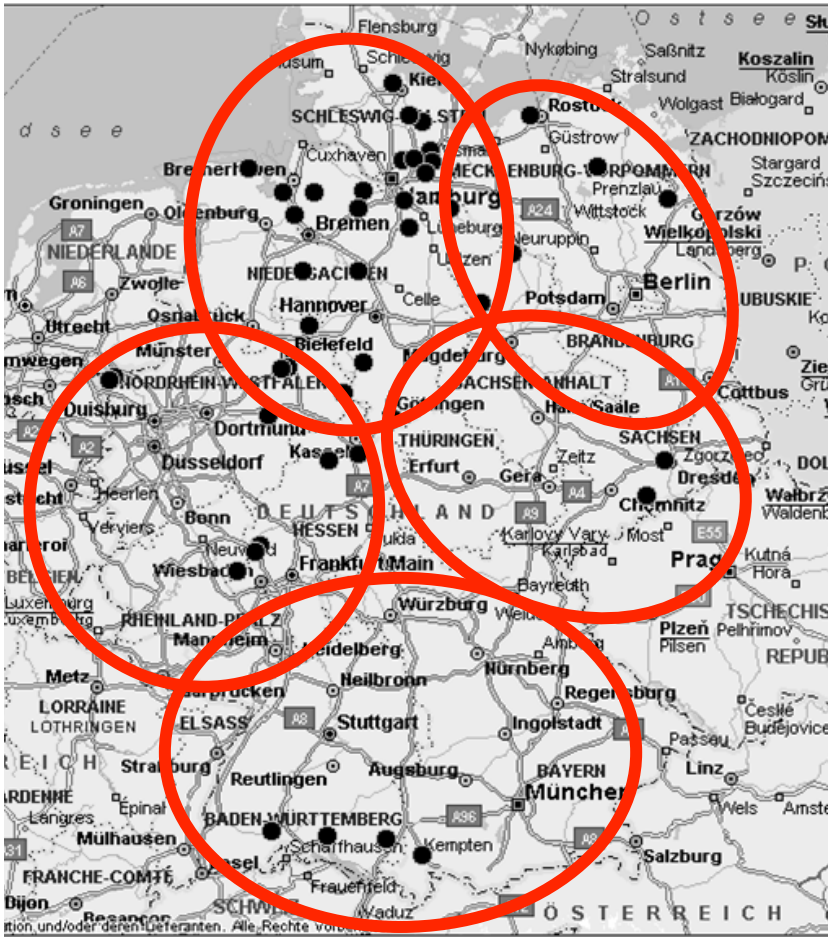
1. Continuous development and improvement
   - Identifying current status and risks
   - Target setting and implementation
   - Repeated assessment, evaluation
2. Farm specific
3. Farmer ownership
4. External person(s) and expertise
5. Written document
6. Acknowledge positive aspects



Lameness intervention study

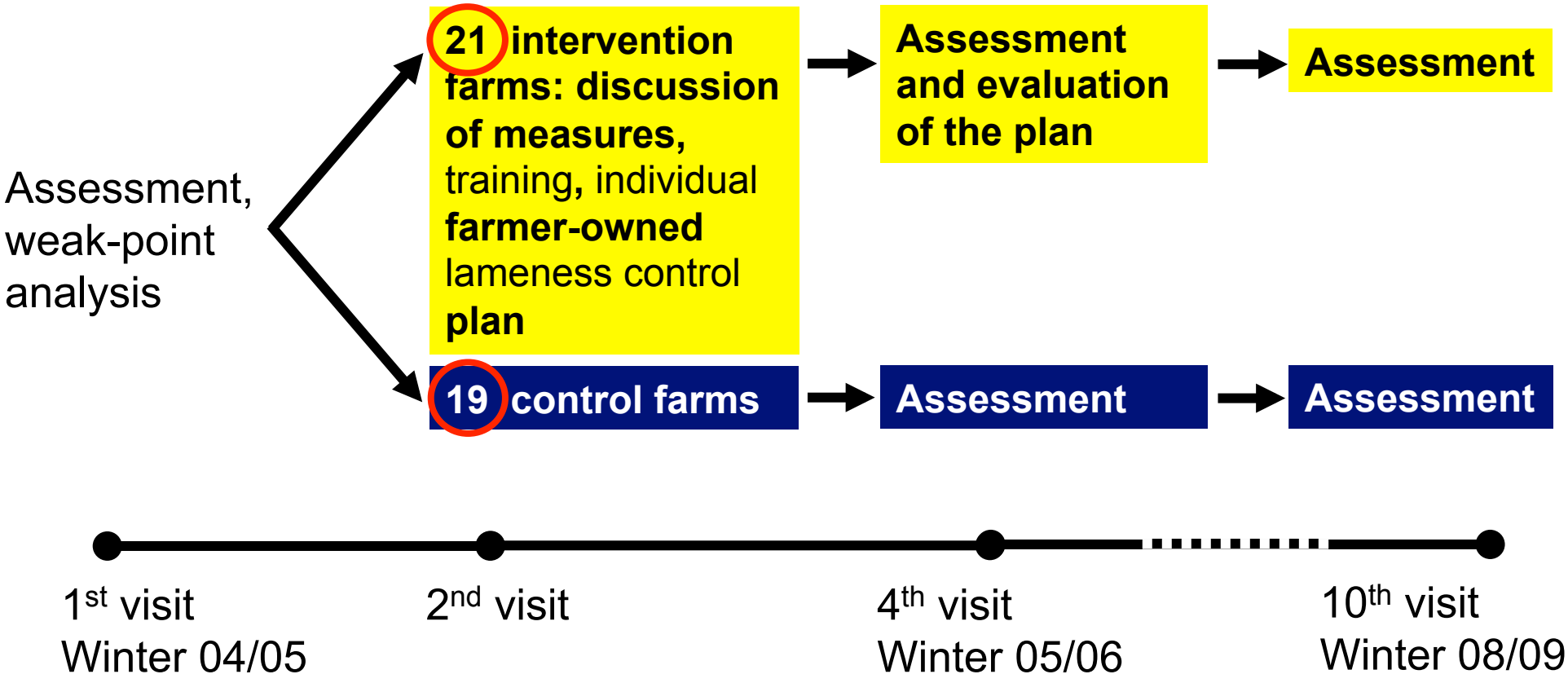
40 organic dairy farms

- herd size > 30 cows (German Holstein)
- Cubicle housing ≥ 1 year
- Participation in milk recording
- Conversion to organic farming ≥ 2 years



2006	Ø cows	Ø yield (kg)	Ø ha	Ø conversion
n=40	61 (30 – 158)	6,619 (4,667 – 9,211)	104 (38 – 340)	1992 (1956 – 2003)

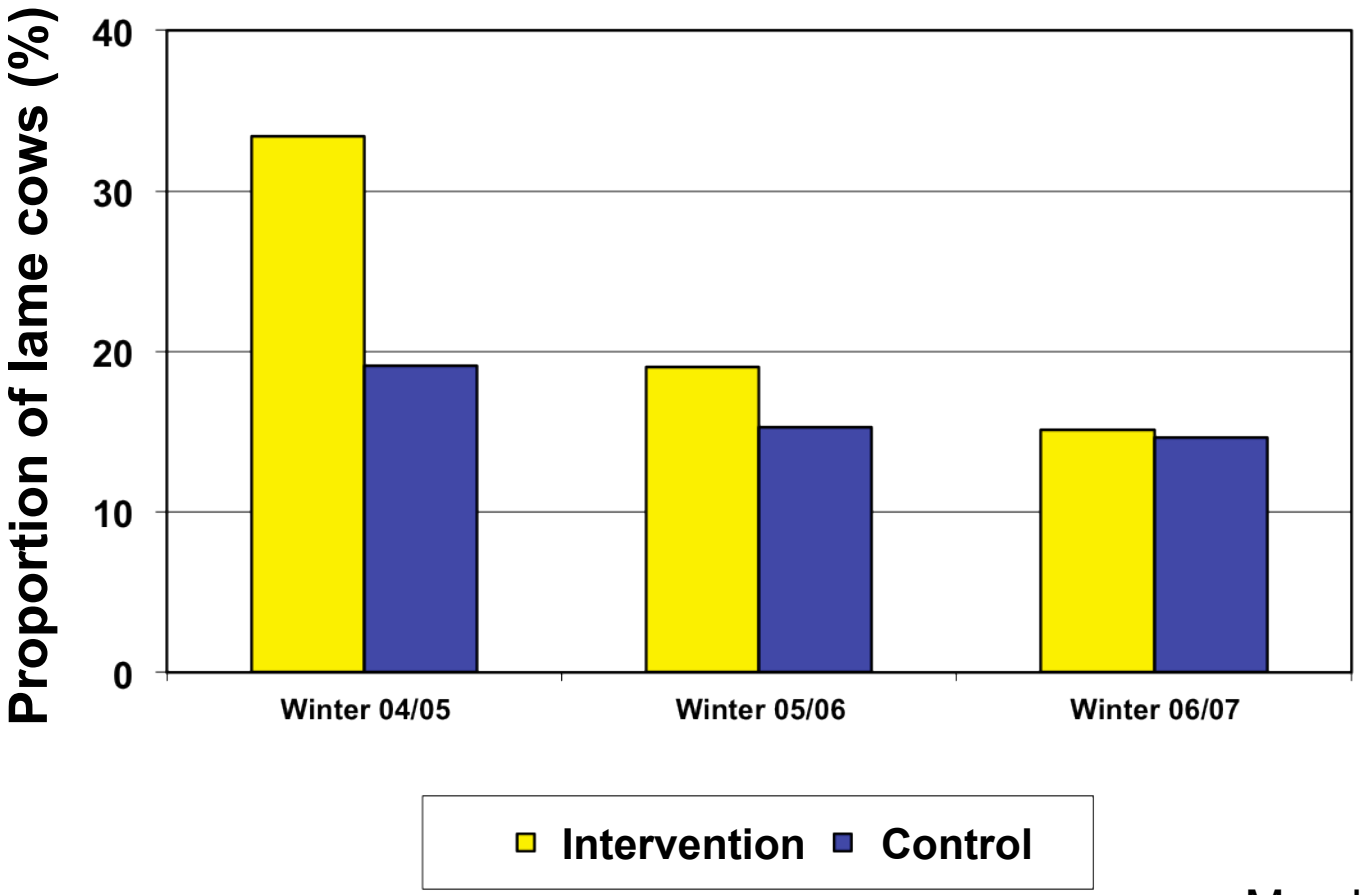
Study design



Intervention measures

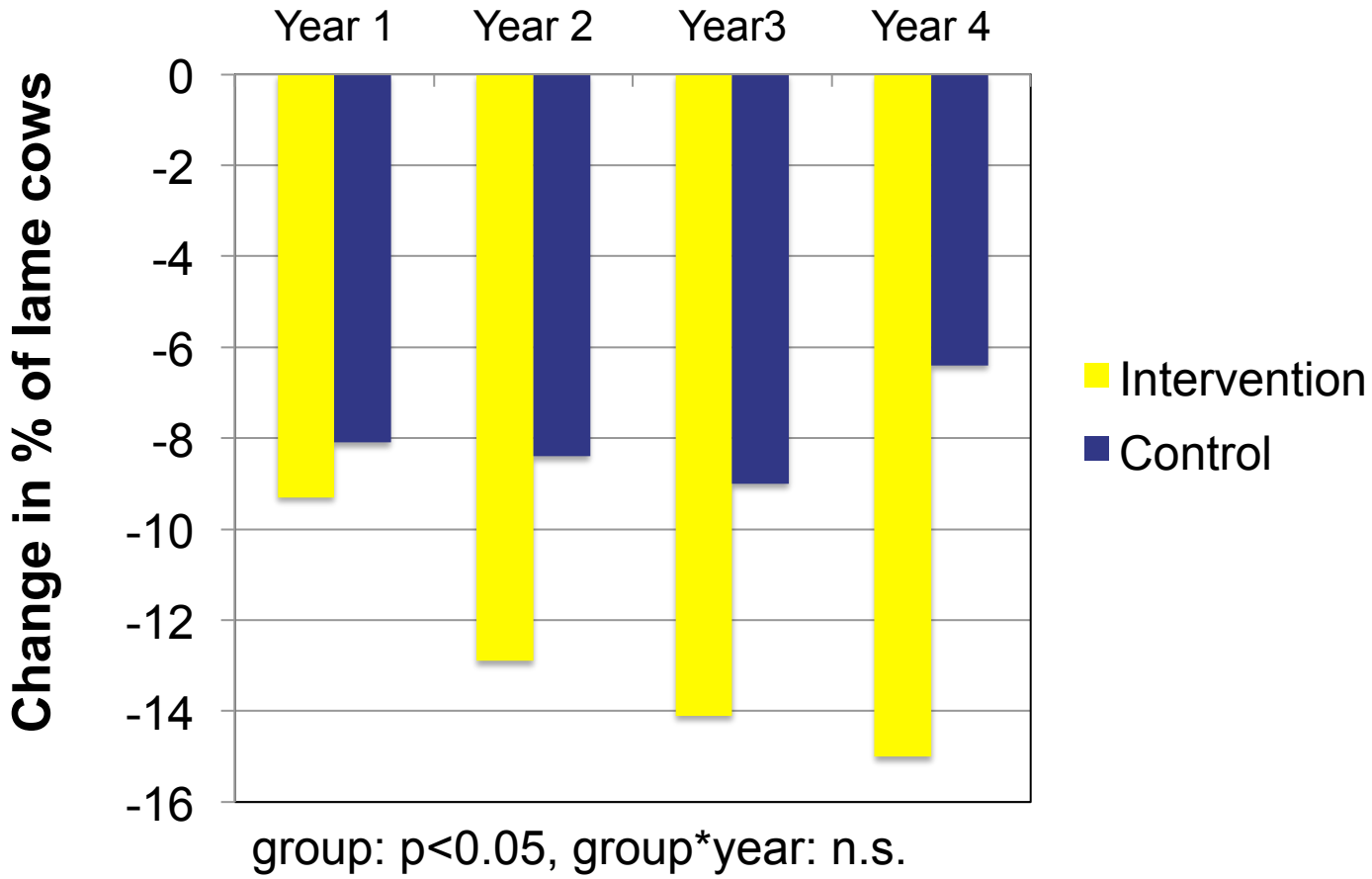
Examples of measures	No. of farms that implemented measures out of farms that had been recommended measures
Regular claw trimming	10/13
Cubicles (bedding, maintenance, design)	11/20
Cleaning of floors in the alleys	12/13
Grip of floors in the alleys	7/10

Lameness prevalence



March & Brinkmann 2011

Reduction in lameness prevalence



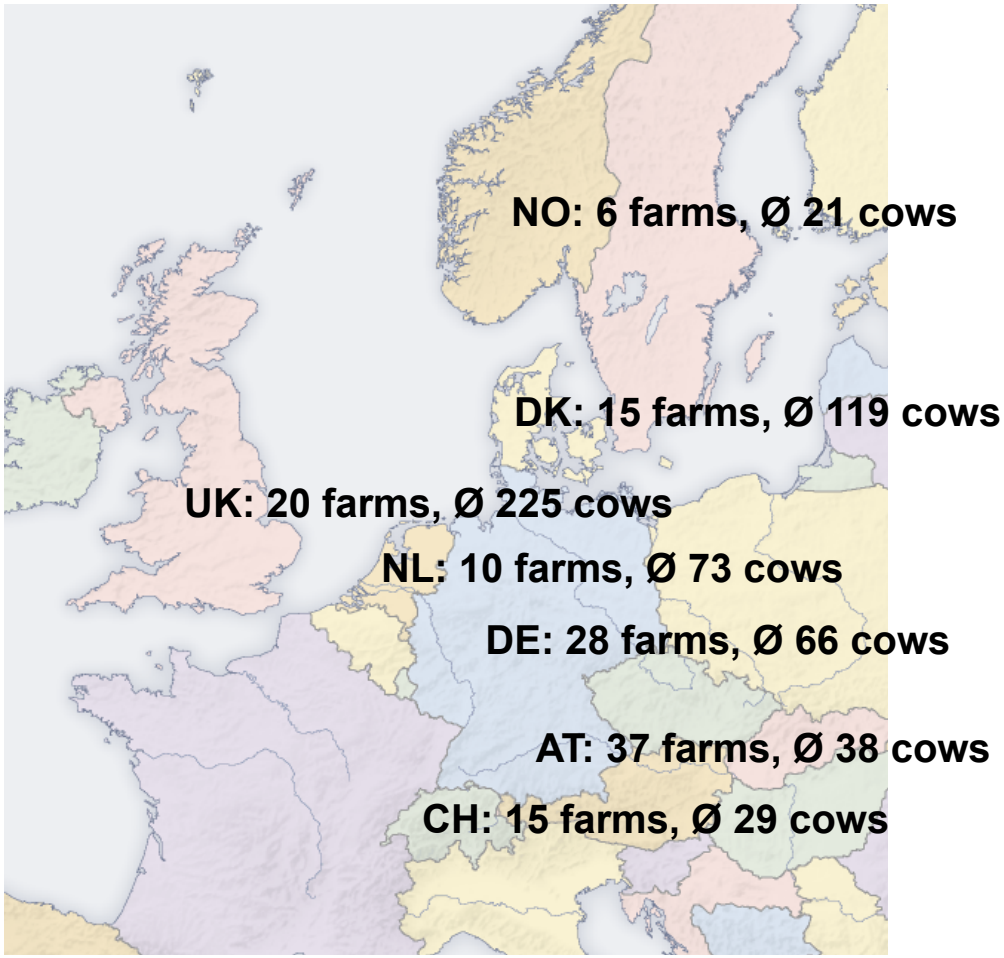
March & Brinkmann 2011

COREOrganic ANIPLAN

- 111 farms in six countries,
  average herd size 57 cows

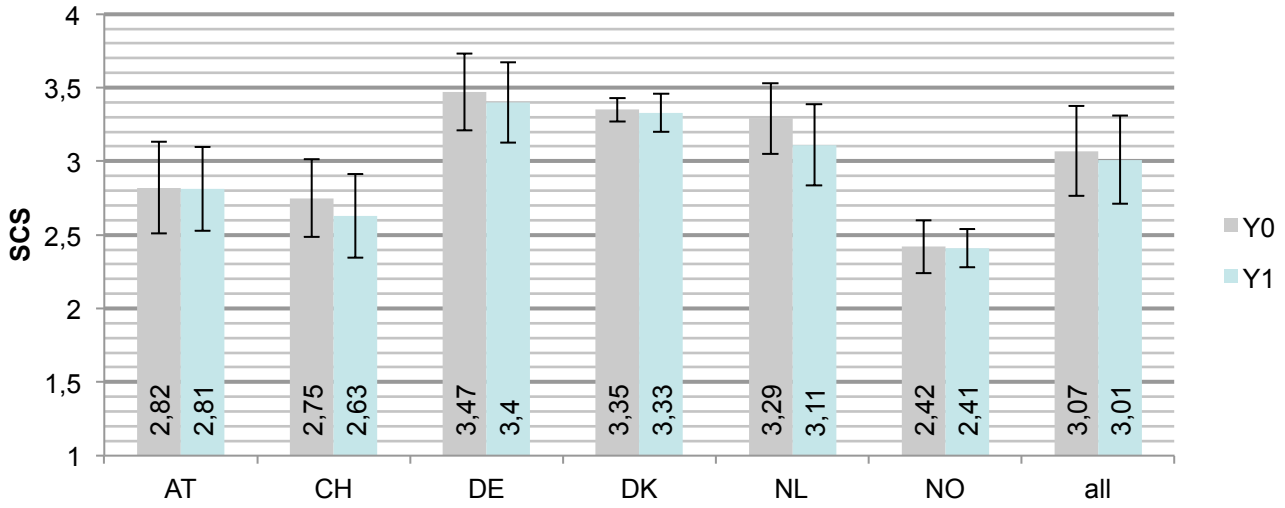
- Animal health and welfare planning according to the principles

  - by farmer field schools
  - one-to-one advice



Udder health (Somatic cell score)

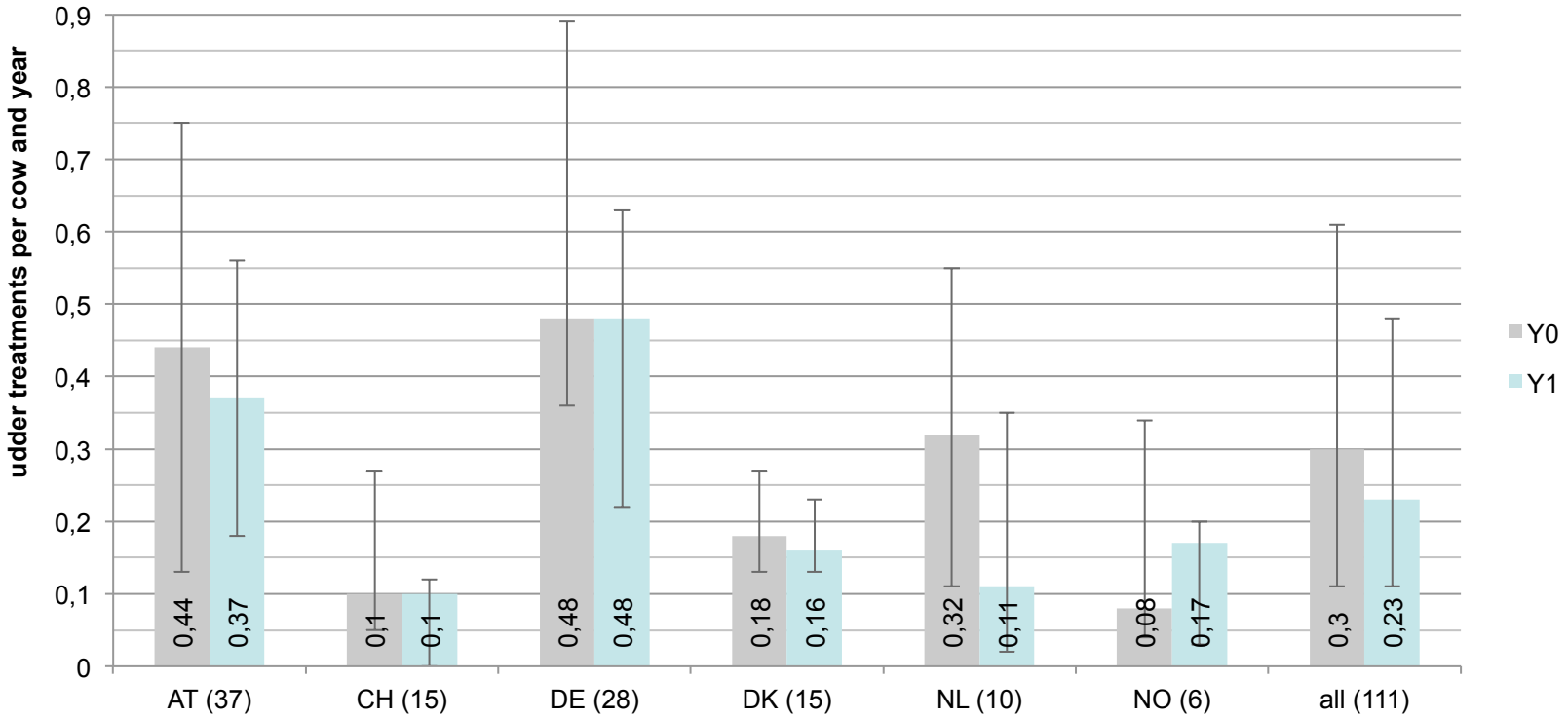
SCC (cells/ml)	SCS
25,000	1.0
50,000	2.0
100,000	3.0
200,000	4.0
400,000	5.0
800,000	6.0



GLM/ repeated measures: Pyear = 0.025 (Y0 > Y1)

Ivemeyer et al. 2011

Udder treatments with antibiotics



GLM/ repeated measures: Pyear = 0.004 (Y0 > Y1)

Ivemeyer et al. 2011

Conclusions

- Low-input/organic dairy farming systems have a high potential to achieve good welfare states but may bear substantial welfare risks
- Welfare assessment/monitoring using animal-based measures become increasingly important
- Effective welfare improvement strategies targeting farm-specific needs are available, but need further refinement

Acknowledgements

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