



From animal welfare assessment to welfare improvement

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Background

- Clear evidence for substantial welfare problems, e.g. production diseases, behaviour restrictions, poor human-animal relationship, painful procedures etc.
- Close link of animal health and welfare with productivity and farm economics (e.g. lameness in dairy cows)



Why on-farm welfare assessment?

Farmer/vet interest

- Monitoring
- Decision support



Producer group interest

- Farm assurance
- Strategic development of the industry
- Communication to the public



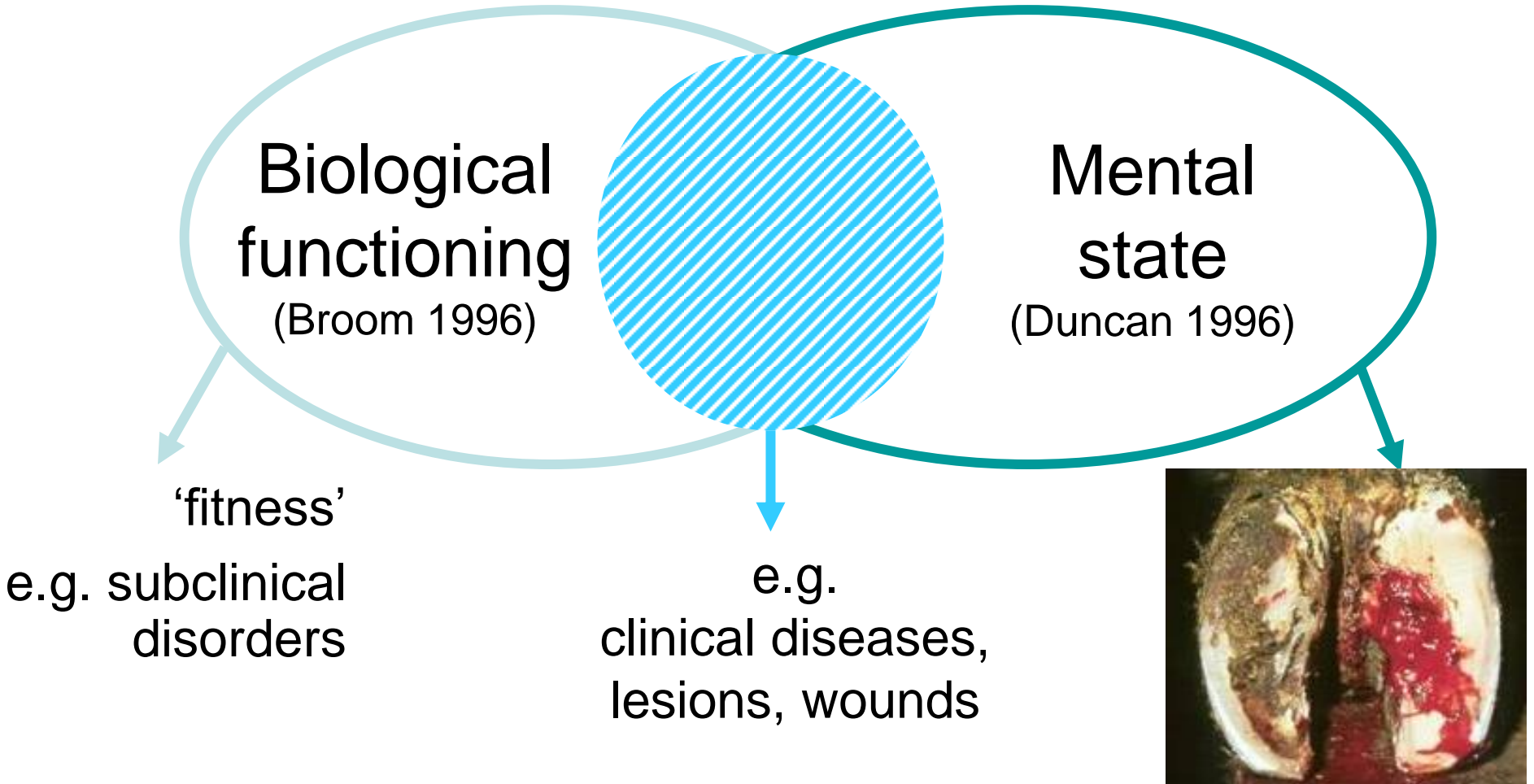
Societal and consumer interest

- Food quality, sustainability

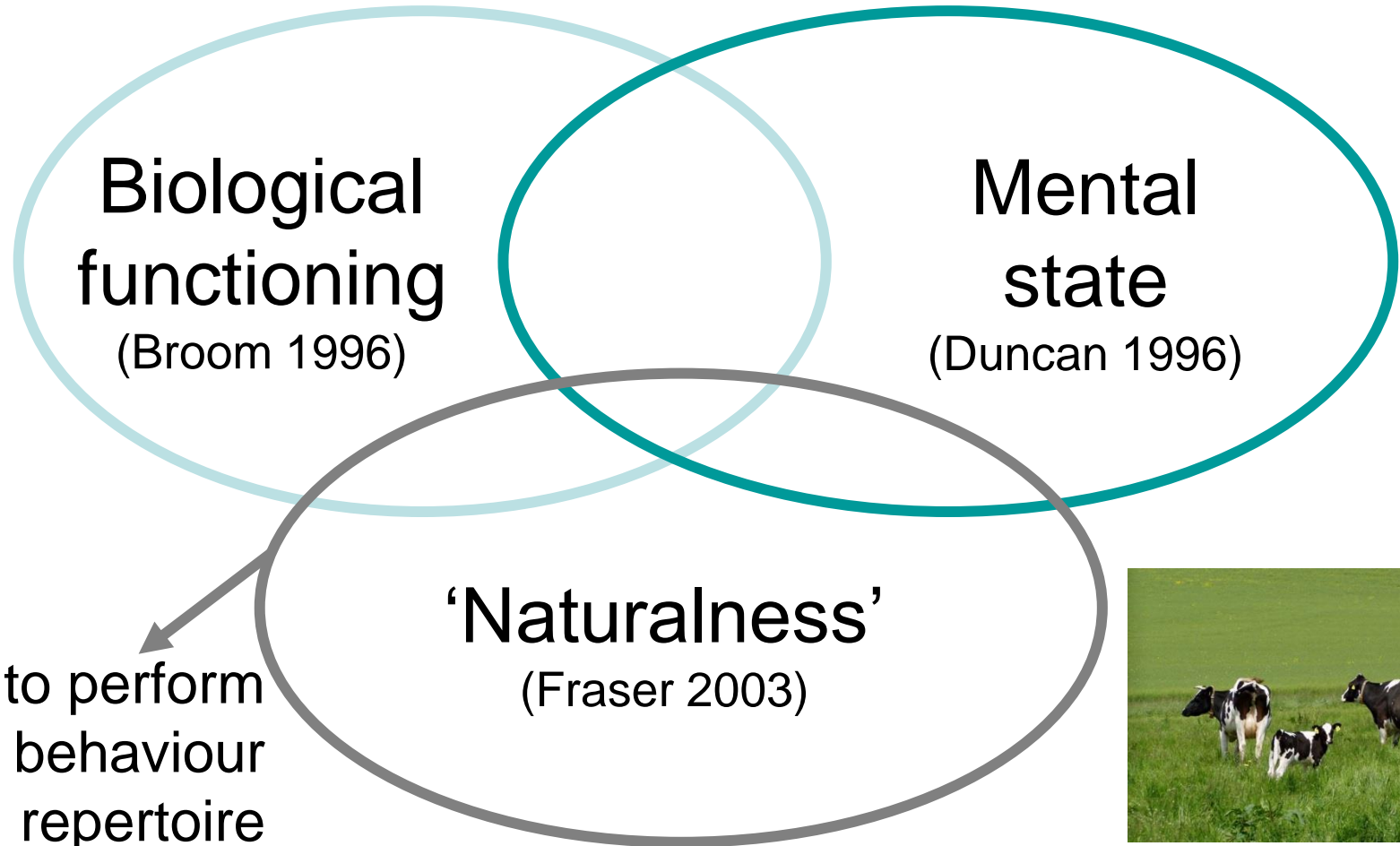


- What is animal welfare and how to measure it
- Key issues for successful improvement strategies
- Examples/potential ways forward

Concepts of animal welfare



Concepts of animal welfare



Measure all aspects

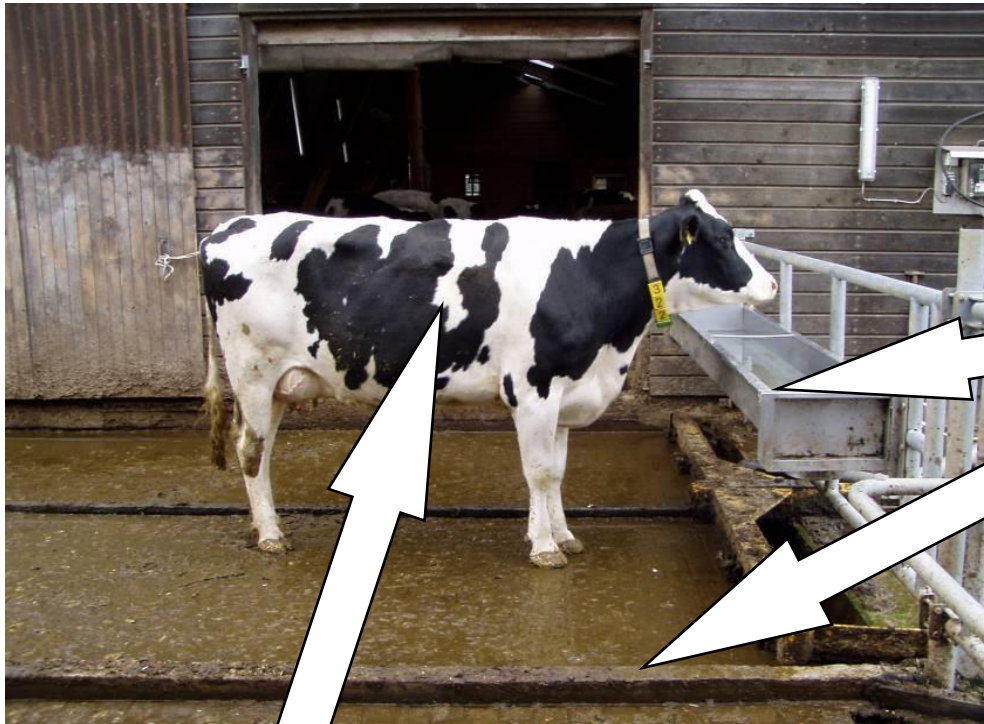
Five Freedoms

- From hunger and thirst
- From discomfort
- From pain, injury and disease
- From fear and distress
- To perform normal behaviour

12 Welfare Quality[®] Criteria

- Absence of prolonged hunger
- Absence of prolonged thirst
- Comfort around resting
- Thermal comfort
- Ease of movement
- Absence of injuries
- Absence of disease
- Absence of pain ...
- Expression of social behaviours
- Expression of other behaviours
- Good human-animal relationship
- Positive emotional state

Animal-based vs. resource-based



Resource-based
assessment

Animal-based assessment

Animal-based measures in Austrian farms with similar husbandry system

N=35; Upper Austria, cubicle loose housing, > 24 cows

	% very lean animals	% lame	% hock lesions	mastitis incidence	agonistic interactions
Median	4 %	39 %	8 %	11 %	1.3/cow*h
Min-Max	0-9	13-71	0-50	0-40	0.1-4.7



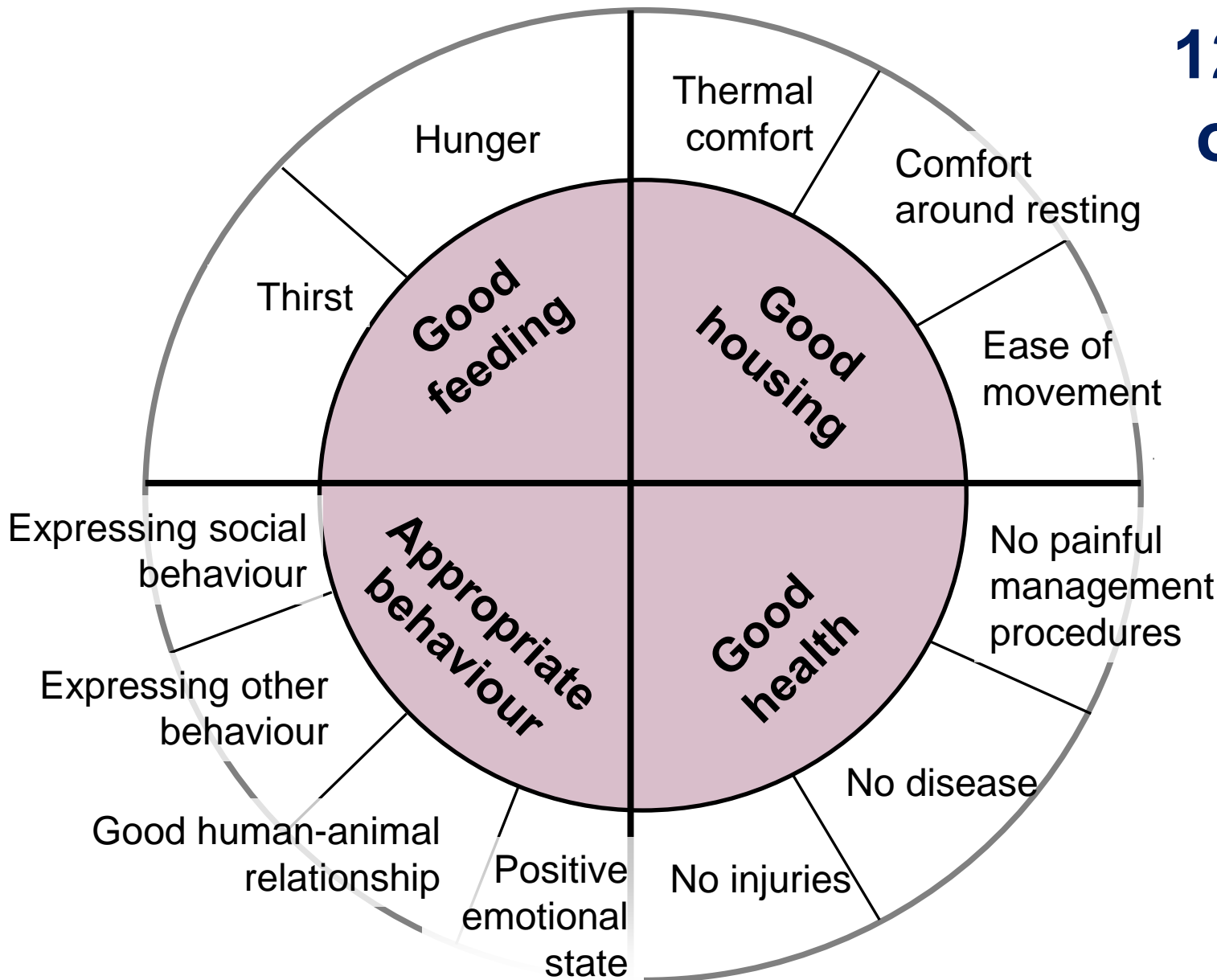
Tremetsberger,
submitted

Comprehensive on-farm welfare assessment systems

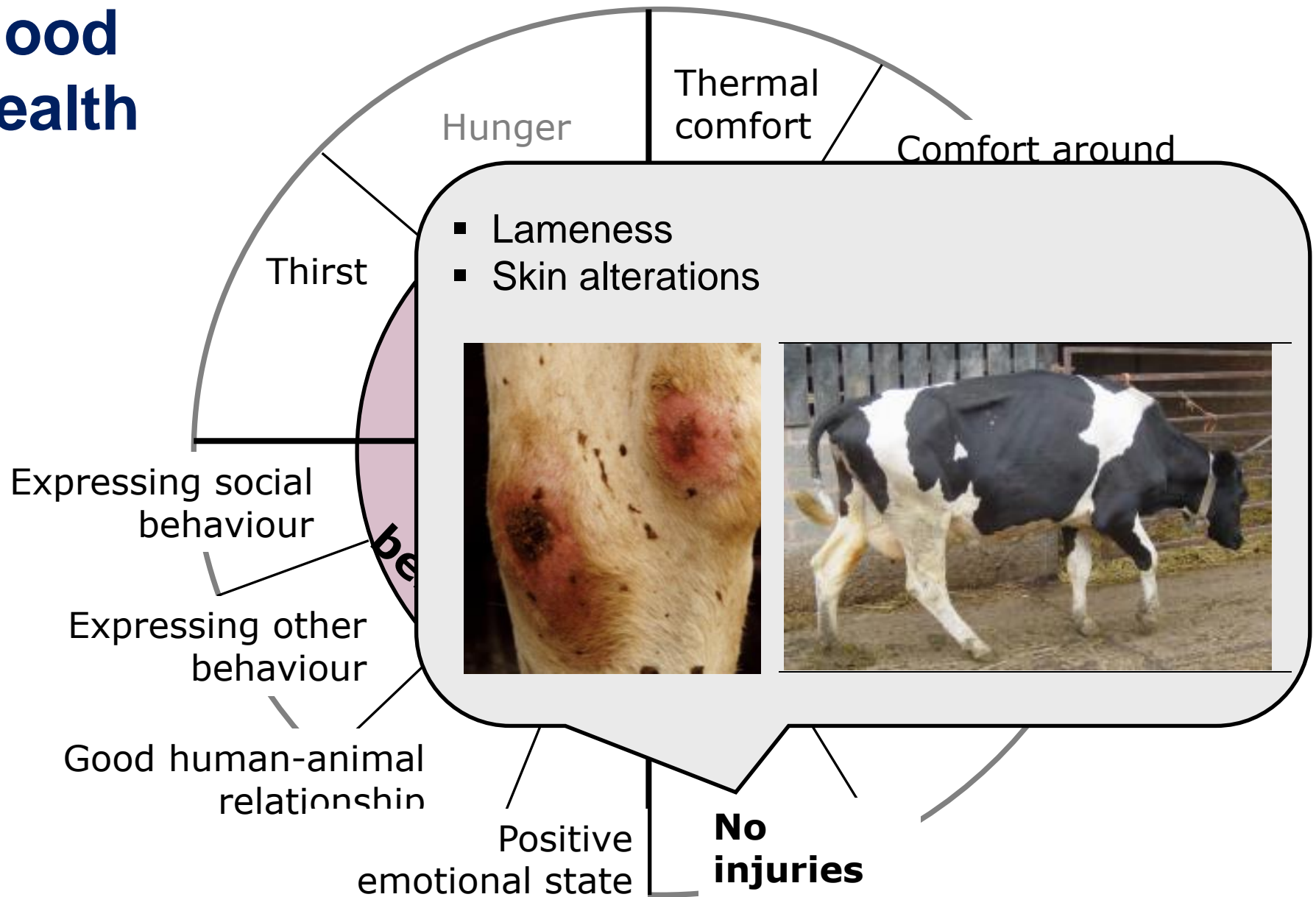
- comprehensive, multidimensional protocols
- mainly animal-based measures, combined with few resource-based measures



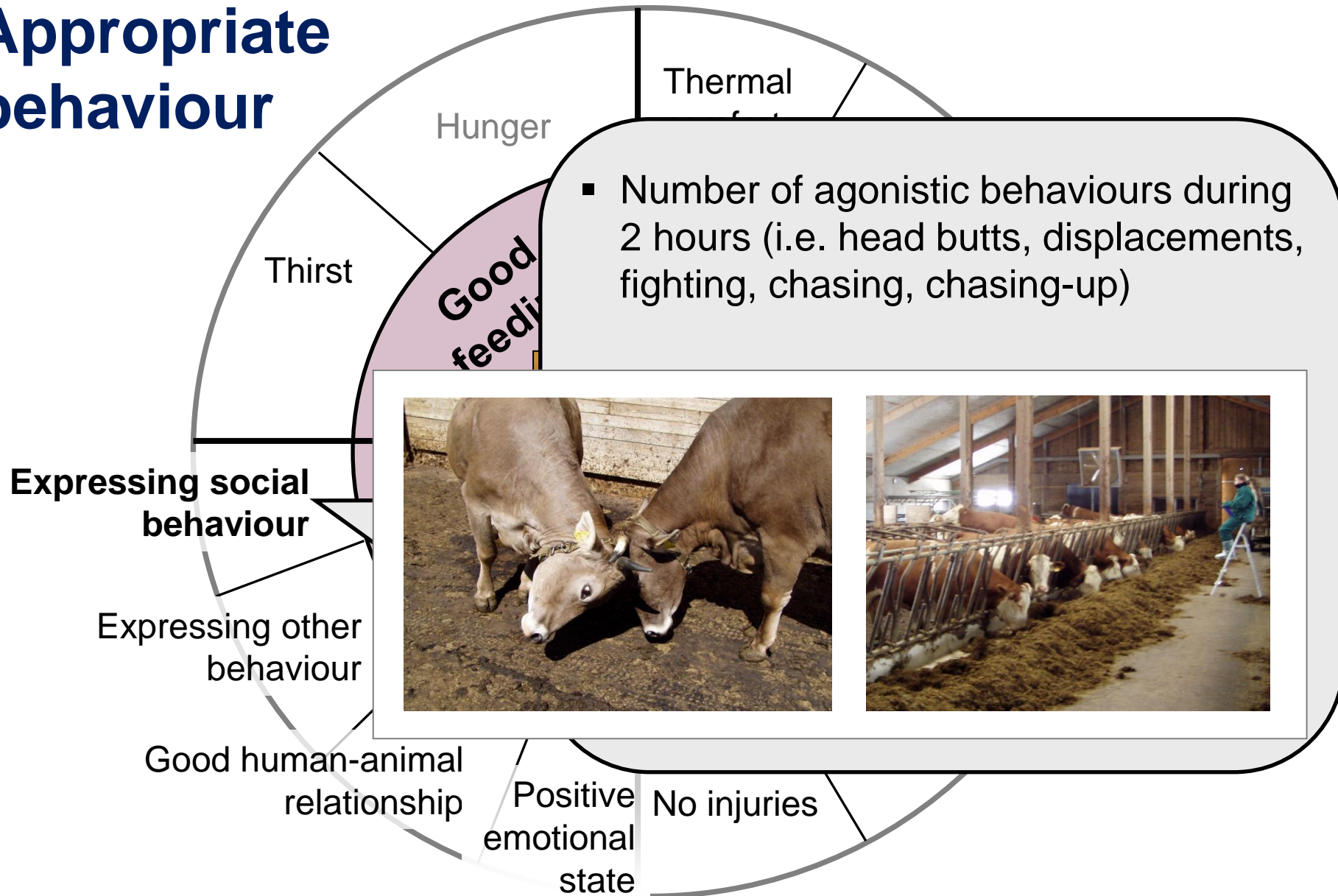
12 criteria of animal welfare in WQ®



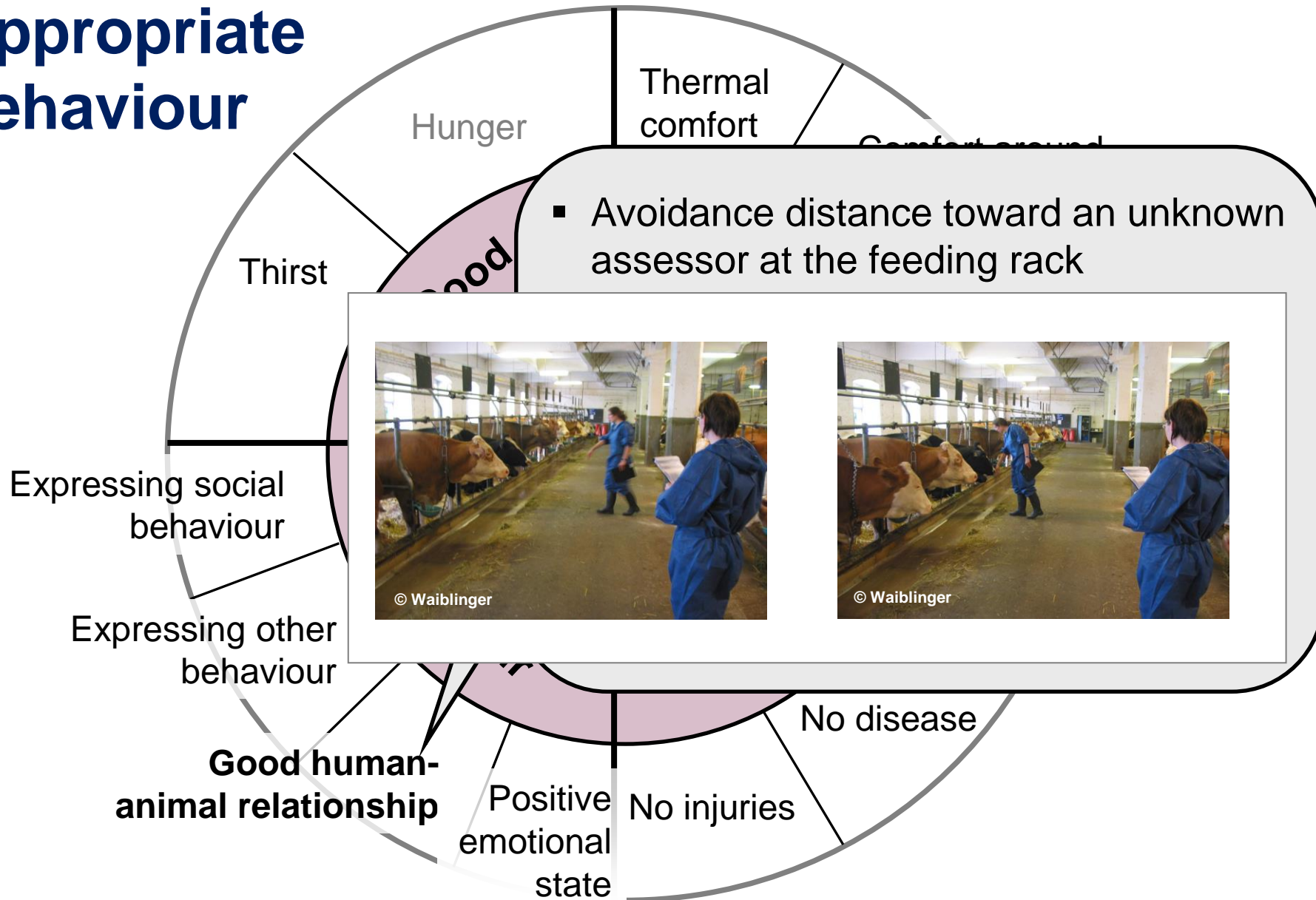
Good health



Appropriate behaviour



Appropriate behaviour



Assessment protocols in practice



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AssureWel

Improving farm animal welfare through welfare outcome assessment



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www.assurewel.org



AssureWel protocol for dairy cattle

Measures

1. Mobility/lameness
2. Body condition
3. Cleanliness
4. Hair loss, lesions
5. Swellings
6. Broken tails
7. Response to stockperson
8. Cows needing further care
9. Mastitis
10. Calf/heifer survivability
11. Cull and casualty cows



Soil Association



Red Tractor Assurance



Welfare improvement?

Lameness: still a problem irrespective of farming system

Country	Farm type	n	Prevalence	Year	Source
UK	conv.	53	22%	2001	Whay et al.
D	organic	50	18 %	2004	Brinkmann & Winckler
A	conv./org.	80	36 %	2004	Mülleder & Waiblinger
A	conv.	30	31 %	2008	Dippel et al.
A	organic	40	26 %	2011	Gratzer et al.

The journey to welfare improvement



Interventions focussing on welfare problems



Identification of risk factors for welfare problems



Assessment/evaluation

Whay, 2005

Multifactorial problem



Housing

Management

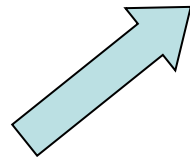
Genetics



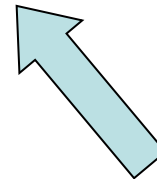
Lameness



Nutrition



Weather



Hygiene



Lameness intervention – an easy job?

Considerable body of scientific knowledge on aetiology etc., but...

- Situation hasn't improved during the last decades
- Only few intervention studies (published?)
- Most studies not successful (e.g. Bell et al. 2009, Barker et al. 2012) due to **lack of implementation**

Taking action for 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

Herd health and welfare planning

Formal assessment of welfare state



Analysis of outcomes



Feedback, report of results obtained from the farm



Advice (targeted, farm-specific), selection of appropriate measures



Constant review and adaptation

Tremetsberger & Winckler 2015

Key issues in AHW planning

- ✓ Sound assessment of baseline situation
- ✓ Balanced report including benchmarking

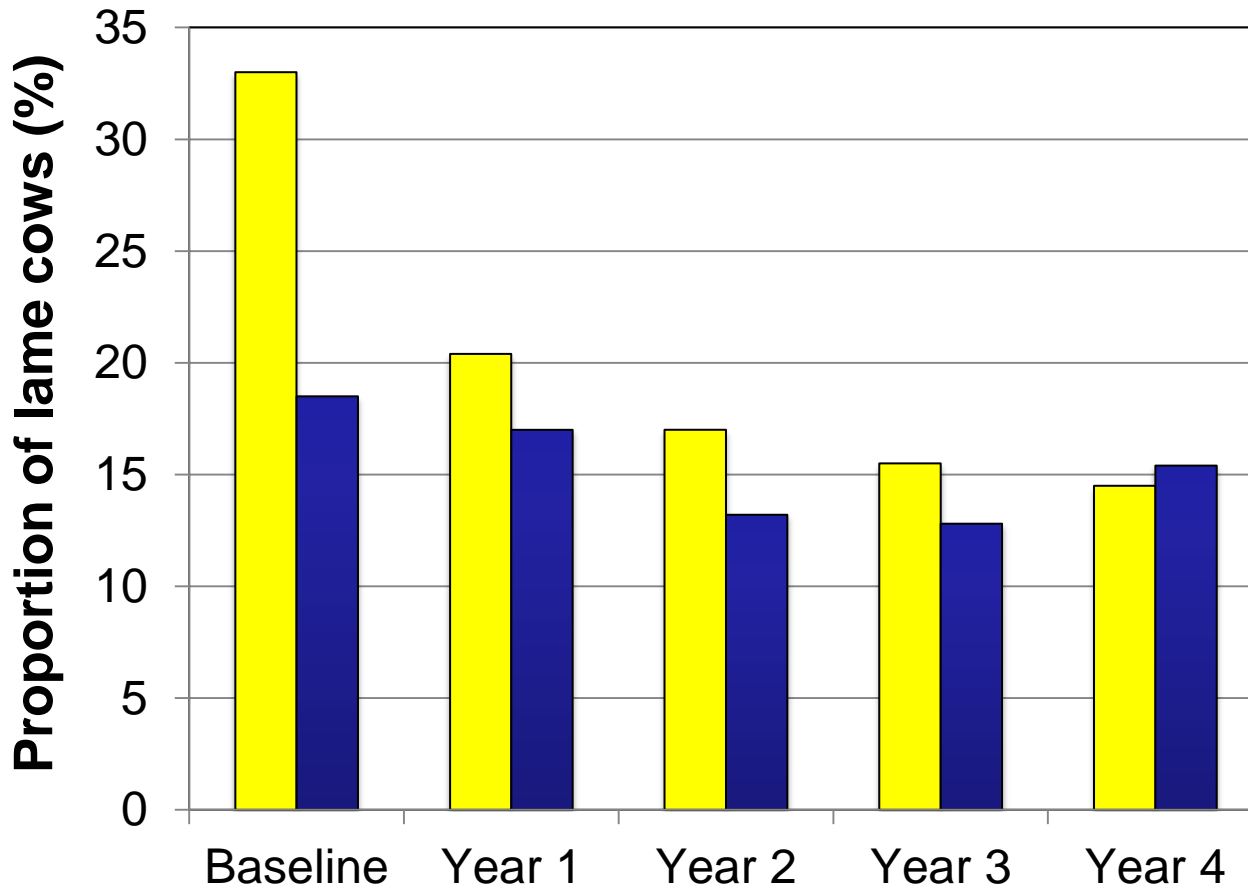
	Mittlerer Wert			Alle 124 Betriebe (aufgeteilt in Fünftel)									
	alle Länder (124 Betriebe)	Österreich (32 Betriebe)	eigener Betrieb	niedrigste 20%				mittlere 20%				höchste 20%	
Anzahl Milchkühe	33	22	32	10	17	17	27	27	36	36	47	48	75
Milchleistung (kg/Kuh/Jahr)	6017	6278	6900	2100	4781	4792	5800	5820	6453	6475	7620	7650	10709
Dauer Weidegang (Stunden/Jahr)	2180	1723	1620	0	360	402	1755	1764	3096	3120	5040	5040	8760
sehr dünne Kühe (BCS < 2) (%)	6	4	0	0	0	0	3	3	7	7	14	15	80
sehr fette Kühe (BCS > 4) (%)	7	5	21	0	0	0	5	5	9	9	16	17	50
Liegen außerhalb der Liegefläche (%)	0	0	25	0	0	0	0	0	10	10	25	25	100
Kollision mit Liegebox beim Abliegen (%)	17	33	75	0	0	0	0	0	25	25	45	45	100
Erschwertes Aufstehen (%)	22	25	25	0	0	0	13	13	25	25	43	43	100
Abnormales Aufstehen (%)	0	0	0	0	0	0	0	0	0	0	9	10	100
verschmutztes unteres Hinterbein (%) (inkl Sprunggelenk)	63	63	93	0	16	17	48	49	71	71	92	92	100
verschmutzte Hinterhand (%)	38	33	32	0	16	16	32	32	54	54	83	83	100
verschmutztes Euter (ohne Zitzen) (%)	40	50	57	0	16	17	33	33	47	47	61	61	100
verschmutzte Zitzen (%)	25	34	54	0	7	7	19	19	32	32	44	45	89
Kühe mit haarlosen Stellen (%)	35	32	39	0	20	20	31	31	42	42	57	58	90
Kühe mit Schwellungen oder Verletzungen (%)	13	12	11	0	6	6	11	11	17	17	29	29	75
Lahmheit insgesamt (%)	16	16	13	0	3	3	13	13	22	22	33	33	89
hochgradige Lahmheit (%)	10	3	9	0	0	0	5	5	12	12	16	16	61

Key issues in AHW planning

- ✓ Sound, formal assessment of baseline situation
- ✓ Balanced report including benchmarking
- ✓ Interactive, participatory planning approach
- ✓ Farmer-owned decisions on goals and measures
- ✓ Farm-individual interventions

Tremetsberger & Winckler 2015

Successful intervention is possible: reduction in dairy cattle lameness prevalence



■ Intervention n = 21 farms
■ Control n = 19 farms

March & Brinkmann 2011

Successful intervention is possible

Mastitis

- 20% reduction in incidence in farms implementing $\geq 2/3$ of recommended measures (Green et al. 2007)
- 30% reduction in treatment incidence (Ivemeyer et al. 2008)



Cow comfort

- +0.6h/d lying time in 'freestall change' farms (Morabito et al. 2017)



Take-home messages

- Valid and feasible on-farm welfare assessment systems are available (incl. training material)
- Encouragement of farmers crucial for successful implementation of intervention measures, e.g.
 - ✓ ownership
 - ✓ benchmarking
- Health and welfare situation monitored
 - ✓ through formal animal health and welfare audits
 - ✓ in response to farm-individual incidents





Thank you very much