Is modernisation beneficial for cattle welfare ?

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ILVO

➢ MODERNISATION:
  • ↗ herd size
  • ↗ milk production/cow
  • ↗ specialisation, efficiency & automation (eg. AMS)
  • housing type: tie stalls → cubicles (loose housing)

➢ **Does this improve cattle welfare?**

1. Introduction: modernisation – AW?

Advantages tie stalls

↘ fear of humans (Matiello et al '09)
↘ opportunities for -^{ve} soc. interactions
↘ lameness (Whitaker et al '00, Cook '04
      ↔ Gustafson '93, Matiello et al '09)
↗ claw health (Thysen '87, Sogstad et al '05)
↘ dehorning

Advantages cubicles

cleaner cows even without straw
↗ freedom to move & functional zones
↗ expression of natural behav. (Hultgren '03)
↗ opportunities for +^{ve} soc. interactions
↘ swellings & skin lesions (Matiello et al '09)
↗ lying comfort (Matiello et al '09)
↘ teat lesions (Regula et al '04)
↘ mastitis & ketosis (Bakken '81, Valde
et al '97 ↔ Bakken et al '88, Hovinen et al '09)
Overall welfare (Ursinus et al '09, Simensen et al '10)

A lot of variation:

-management,
-pasture,
-lying mats,
-stocking density,…

➢ **Citizens**:   intensification ("factory farming") ~ poor welfare
pasture & straw ~ good welfare

➢ **Focus on productivity & efficiency**
  ➢ ↘ time per animal (compensated by automation?)
  ➢ selection for increased production (↘ longevity, ↗ health problems: leg disorders, mastitis, reproductive en metabolic disturbances)

➢ **Modern housing conditions**: increased attention for needs of cows?
(scaling-up, more knowledge, sticter norms and regulations, societal demands,…)

Is modernisation beneficial for dairy cattle welfare?

- IDEAL: ~~Historical~~ ↔ recent evaluations of overall AW
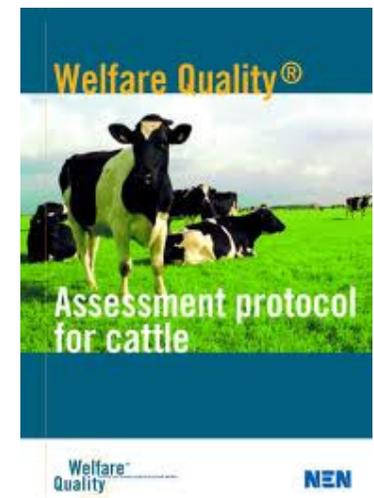
- ALTERNATIVE:

"**traditional farms**"		"**modern farms**"
- tie stalls	↔	- cubicles
- >20 yr		- <20 yr

- Training of 6 observors: Welfare Quality® protocol

Welfare Quality®

Assessment protocol for cattle

Welfare Quality   NEN

2. Methods: EU Welfare Quality ®

Principle	Criteria		Indicators (dairy cattle)
Good feeding	1.	Absence of prolonged hunger	BCS (% very lean animals)
	2.	Absence of prolonged thirst	Availability & cleanliness water
Good housing	3.	Comfort around resting	Lying down duration; % collisions; on edge of lying area; cleanliness
	4.	Thermal comfort	-
	5.	Ease of movement	Tethering; access to pasture
Good health	6.	Absence of injuries	Lameness; integument alterations
	7.	Absence of disease	Respir./reprod./digestive diseases; SCC; mortality; distocia, Downer
	8.	Absence of pain induced by management procedures	Mutilations (dehorning; tail docking; castration; use of anaesth./analg.)
Appropr. behaviour	9.	Expression of social behaviour	Incidence agonistic interactions
	10.	Expression of other behaviours	Access to pasture
	11.	Good human-animal relationship	Avoidance distance at feeding place
	12.	Positive emotional state	QBA

Overall welfare category

2. Methods

- Welfare assessments on 19 **traditional** & 20 **moderns** farms compared with 2-sample T-test (SAS 4.1)

- Teams of 2 observors scored simultaneously but independently

2010   **2011**

| indoor | pasture | indoor | pasture |

F M   F M

modern 1-9
traditional 20-30

modern 10-19
traditional 31-40
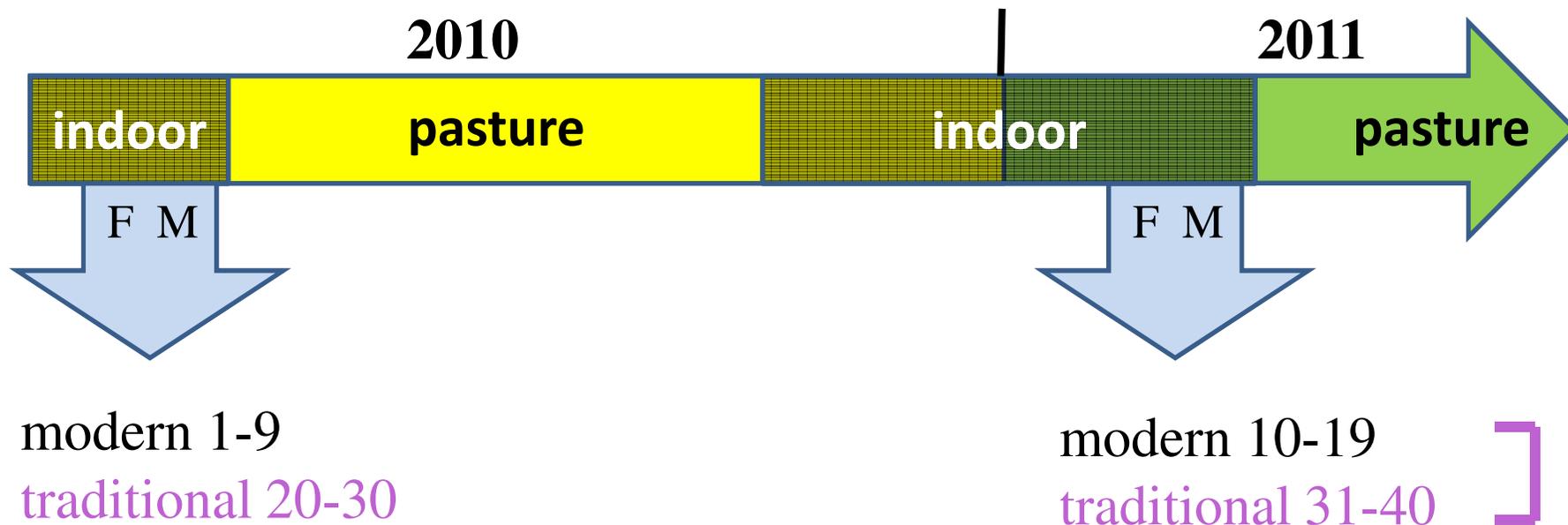
3. Results: Overall welfare category
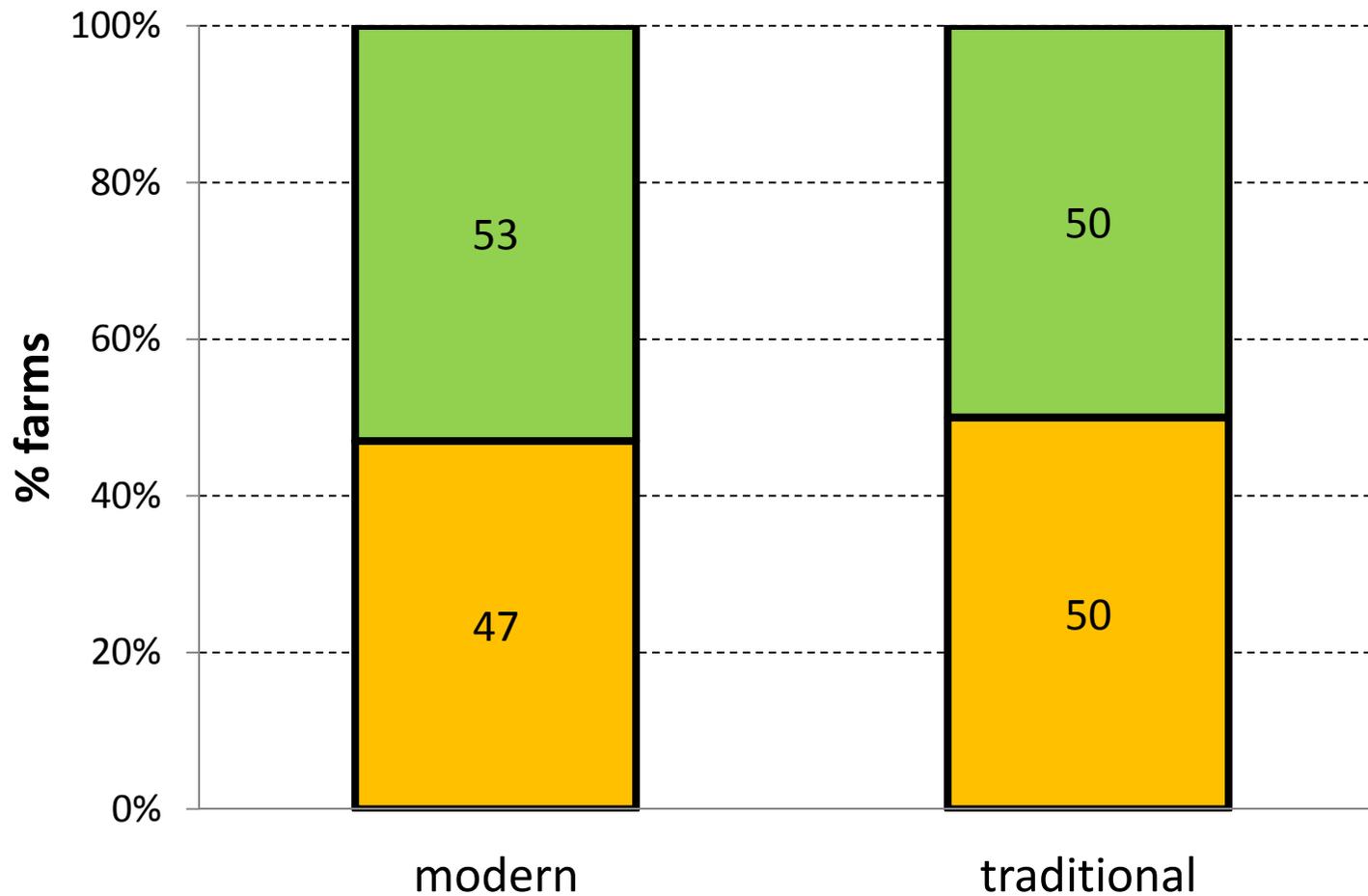
3. Results: Criteria & Principles

Criteria		Modern	Traditional	Principles	Modern	Traditional
1	Absence of hunger	57	68	Good feeding	54	52
2	Absence of thirst	68	54			
3	Resting comfort	36	37	Good housing	58	34
5	Ease of movement	95	34			
6	Absence of injuries	37*	32*	Good health	29	33
7	Absence of disease	32	35			
8	Abs. pain (managt.)	39*	54*			
9	Expression of social behaviour	94	100	Appropriate behaviour	41	56
10	Expression of other behaviour	48	79			
11	Hum–anim. relation	39	55			
12	Pos. emotional state	52	50			

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9	Expression of social behaviour	94	100
10	**Expression of other behaviour**	**48**	**79**
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RESOURCE-BASED

Days tethered ($\geq$18h) /yr
Access to pasture:

- Days/yr :
  - modern: 175
  - traditional: 208
- Hours/day:
  - modern: 7
  - traditional: 16

% days per yr with $\geq$6h at pasture

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ANIMAL-BASED

Indicator	modern	tradition.
% lame	30*	25*
% overgrown claws	32	51
Hairless patches/cow	3.5*	5.5*

% disbudded/dehorned	96	62

% of agonistic out of all social behaviour		

% cows that can be touched	29	39

➢ **Influence of modernisation on dairy cattle welfare seems:**
  • limited (overall welfare category)
  • mixed: ↗ ease of movement, (absence of injuries)
                 ↘ behav., human-anim., (abs. pain by managt.)

➢ **Assumptions:**
  • WQ® protocol quantifies cattle welfare correctly:
      - integration is based on consensus (≠ scientific proof)
      - indicators are comparable between housing types

  • Samples of farms are representative for "traditional" and "modern" dairy farms

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Thanks you for your attention !

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