

Layout of presentation

- Resource-based and/or animal-based measurements
- Welfare Quality® - animal-based measurements
 - Clinical scoring
 - Body parts
- Summary



The life of a laying hen

Hatching and early handling



Transfer to rearing farm

16 w



Outdoor management in organic farms

On farm killing

0

20 w

75-85 w

Transfer to egg producing farm

Management and feeding at onset of laying

Bird collection and transportation to abattoir



Nesting

- Includes nest site selection, nest formation and egg laying
- Strong motivated behaviour pattern that and egg
- Laying outside of the nests may be indicative of problems with environmental or social behavioural factors.

Perching

- Perching is a natural and highly motivated behaviour.
- Particularly strong at night
- Birds seek elevation during the day
- Less perching behaviour in the flock may indicate with environmental factors, injuries and pullet rearing experience.



Pros and cons

Resource-based

- Measure indirect bird welfare
- More robust measures
- Calibrations more stable
 - *area, number of nipples, design of house*
- Can evaluate building in advance

Animal-based

- More biological
- Measure direct bird welfare
- Needs more thorough definitions
- More training and thorough evaluation of inter-rater agreement



Welfare[®] Quality

Science and society improving animal welfare

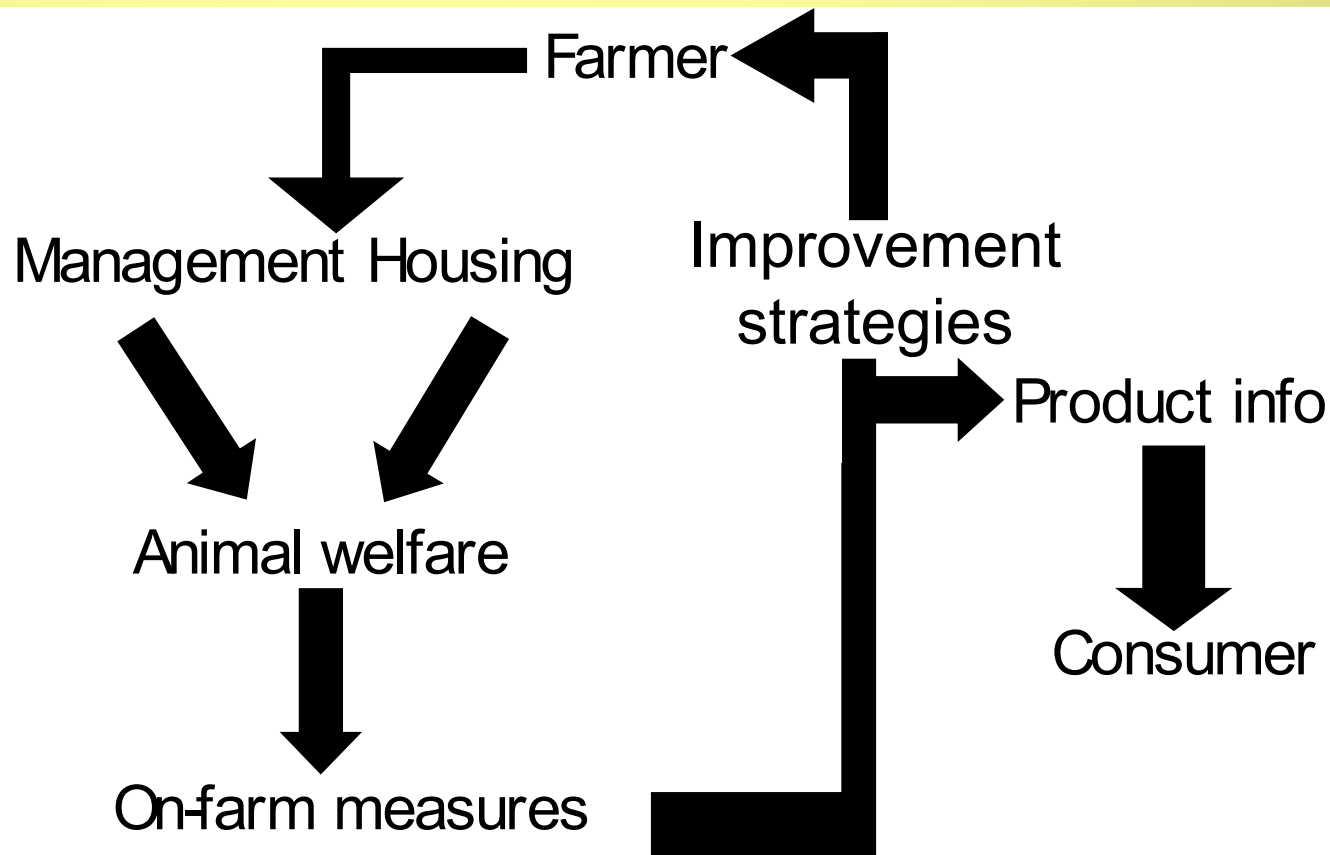
On farm assessment of animal welfare: the 'Welfare Quality[®]'

Welfare Quality® as an integrated project

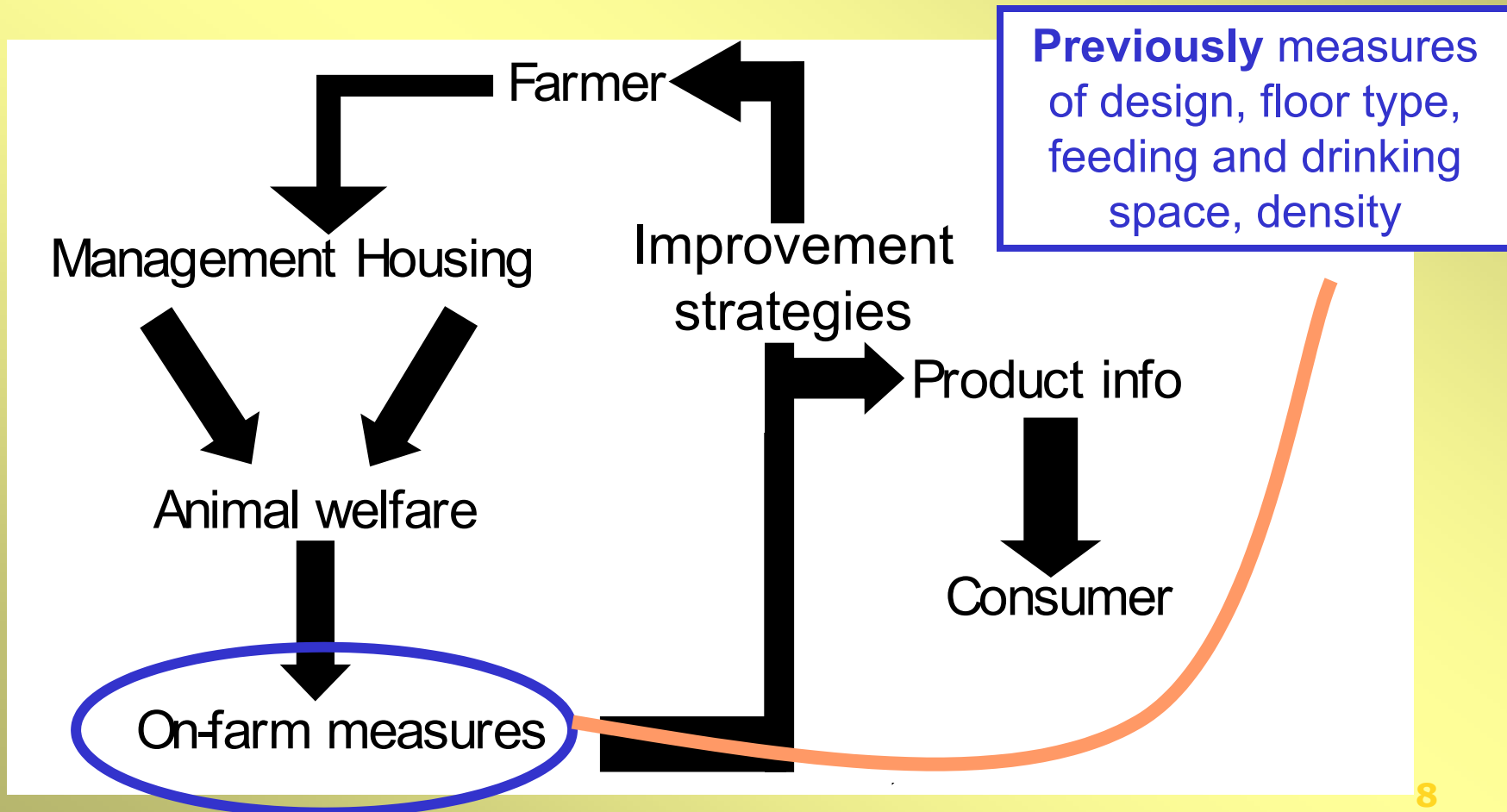
- ~250 scientists
- 44 partners



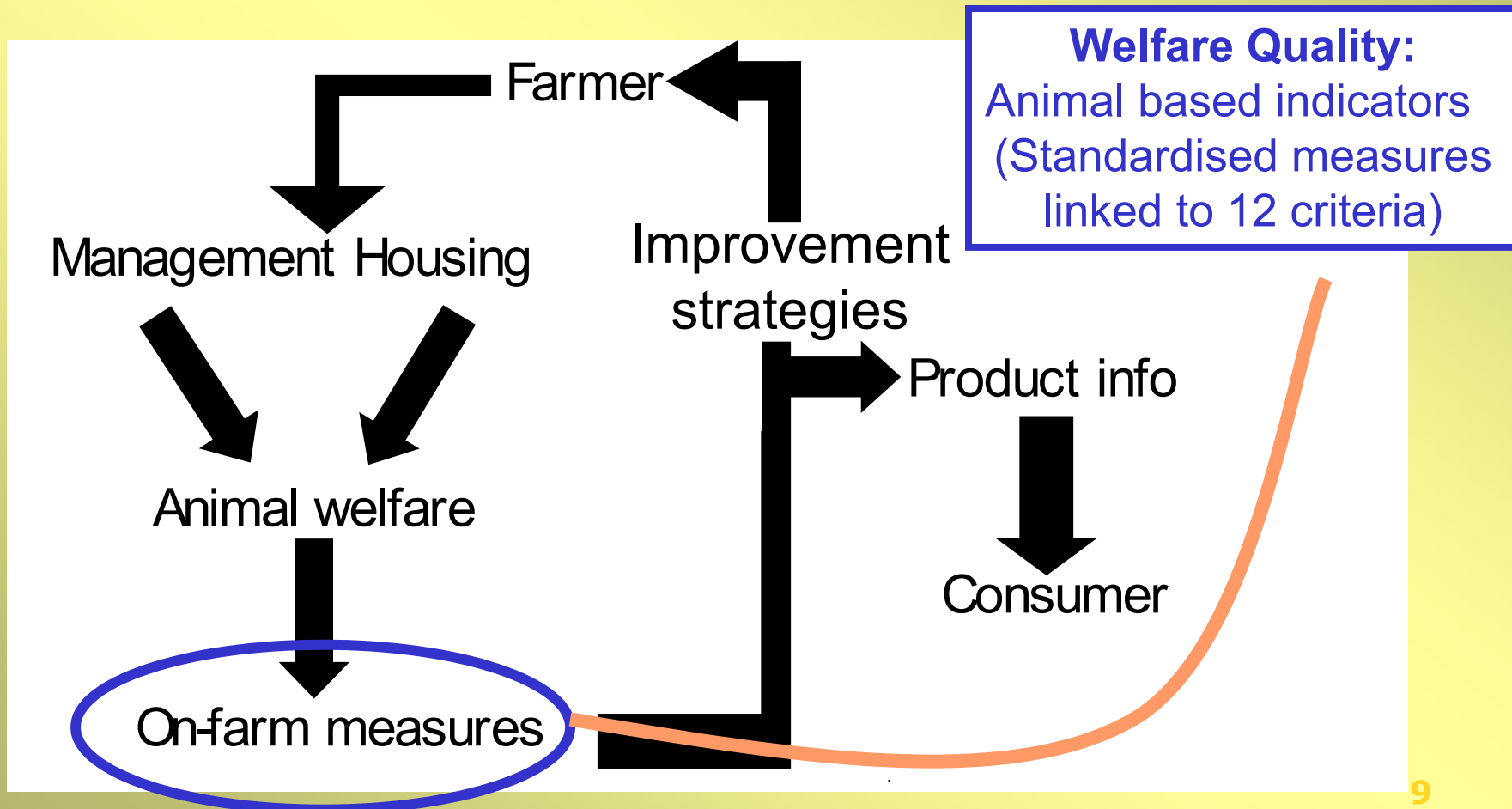
The Welfare Quality[®] approach



The Welfare Quality[®] approach



The Welfare Quality[®] approach



Principle	Welfare criteria	Examples of measures
Good feeding	1 Absence of prolonged hunger	Feeder space
	2 Absence of prolonged thirst	Drinker space
Good housing	3 Comfort around resting	Perch availability, mites, dust sheet test
	4 Thermal comfort	Panting, huddling
	5 Ease of Movement	Stocking density, perforated floors
Good health	6 Absence of injuries	Keel bone deform., Skin lesions, foot pad dermatitis, toe damages
	7 Absence of diseases	On farm mortality, culls on farm
	8 Absence of pain induced by management procedures	Beak trimming
Appropriate behaviour	9 Expression of social behaviours	Aggression, plumage, comb wounds
	10 Expression of other behaviours	Use of nests and litter, enrichment measures, free range, cover of the range,
	11 Good human-animal relationship	Avoidance distance tests (ADT)
	12 Absence of general fear a Positive emotional state	Novel object test (NOT) Qualitative behaviour assessment (QBA)

Welfare assessment animal-based measures

- **Valid and science based**
Actual reflect the animal's individual welfare
- **Reliable**
Repeatable between different people and on different occasions
- **Feasible**
Must be possible to implement in practice at a reasonable cost

Product information

Integration of parameters is necessary

- **Science based (consensus)**
- **Appealing and transparent (marketing)**

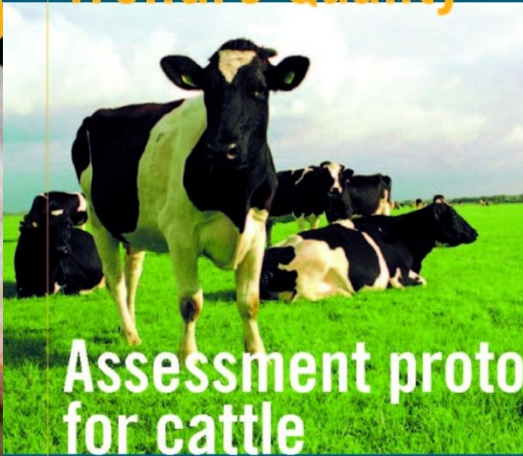


<http://www.welfarequalitynetwork.net/en-us/reports/assessment-protocols/>

Welfare Quality



Welfare Quality®



Welfare Quality
Science and society improving animal welfare

NEN

Welfare Quality®



Welfare Quality
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Scorin

1 Comb

- 0: no pecks
- 1: < 3 pecks
- 2: ≥ 3 pecks

No healed lesions (scars)

2. Plumage

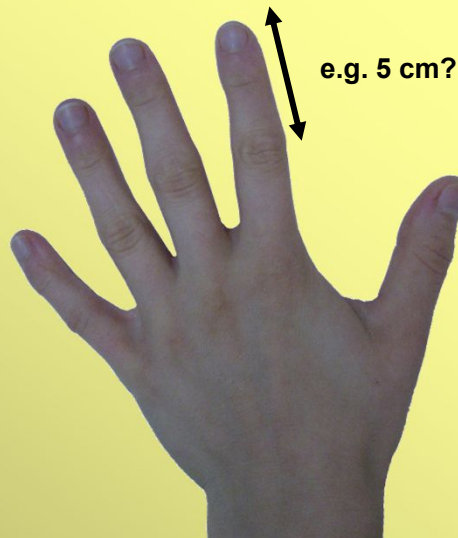
➤ *From above and from the back:*

- 0: no or slight wear, (nearly) complete feathering (only single feathers lacking);
- 1: moderate wear, i.e. damaged feathers (worn, deformed) or one or more featherless areas < 5 cm in diameter at the largest extent;
- 2: at least one featherless area ≥ 5 cm in diameter at the largest extent.

3. Wounds

➤ *Rear of the hen and legs:*

- 0: no wounds, only single (<3) pecks (punctiform damage <0.5 cm diameter) or scratches;
- 1: at least one wound <2 cm diameter at largest extent or ≥ 3 pecks or scratches
- 2: at least one wound ≥ 2 cm diameter at largest extent



4. Keel bone

- 0: no deviation
- 2: deviation of keel bone (incl. thickened sections)

5 Feet

➤ *Foot with the worst condition:*

- 0: Feet intact, no or minimal proliferation of epithelium
- 1: Necrosis or proliferation of epithelium or chronic bumble foot with no to moderate swelling
- 2: Swollen (dorsally visible)



original size

Standardisation of clinical scoring in poultry

Scoring of comb condition in laying hens on farm



Ute Knierim, Christiane Keppler, Marion Staack, Maja Günther

University of Kassel



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given on the slides)**

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Procedure

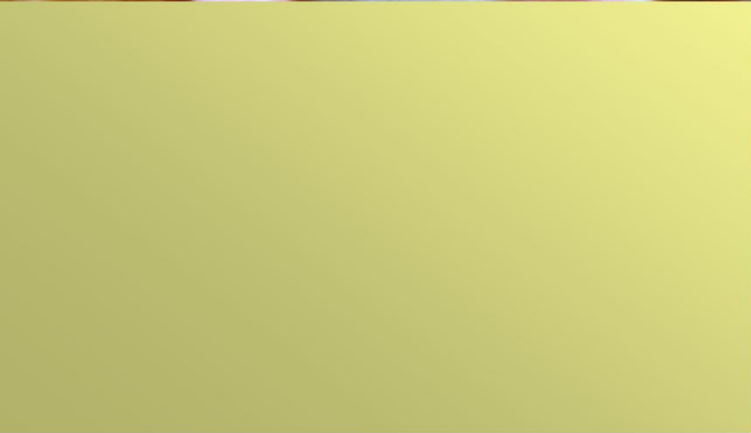
- Individual hens are picked up
- The comb is visually scored from both sides as:

0: no pecks

1: < 3 pecks

2: ≥ 3 pecks

Do not count healed lesions with only a scar left







Standardisation of clinical scoring in poultry

Scoring of plumage condition in laying hens on farm



Ute Knierim, Christiane Keppler, Marion Staack, Maja Günther
University of Kassel



- Individual hens are picked up
- scan the whole hen from above from head to back, the wings, and the area around the cloaca from the back, (*the underside of the hen is not included*),
- where appropriate, feathers can be pushed back to allow detection of naked areas under the coverts
- Score the areas assessed in total as

0: no or slight wear, (nearly) complete feathering (only single feathers lacking);

1: moderate wear, i.e. damaged feathers (worn, deformed) or one or more featherless areas < 5 cm in diameter at the largest extent;

2: at least one featherless area \geq 5 cm in diameter at the largest extent.









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Standardisation of clinical scoring in poultry

Scoring of skin condition (wounds) in laying hens on farm



Ute Knierim, Christiane Keppler, Marion Staack, Maja Günther

University of Kassel



- Individual hens are picked up,
- scan the rear body (back, tail, area around cloaca) and the legs for wounds,
- where appropriate, feathers can be pushed back to allow detection of wounds under coverts,
- broken blood-filled shafts are not evaluated as pecks.
- Score the assessed areas in total as:

0: no wounds, only single (< 3) pecks (punctiform damage < 0.5 cm diameter) or scratches;

1: at least one wound < 2 cm in diameter* or ≥ 3 pecks or scratches

2: at least one wound ≥ 2 cm diameter

** at largest extent*



Area around cloaca



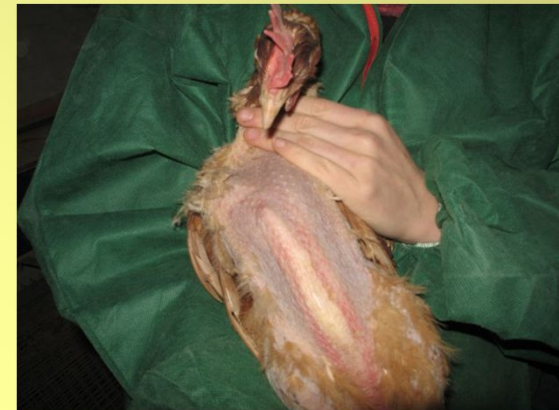






Standardisation of clinical scoring in poultry

Scoring of keel bone condition in laying hens on farm



Ute Knierim, Christiane Keppler, Marion Staack, Maja Günther

University of Kassel

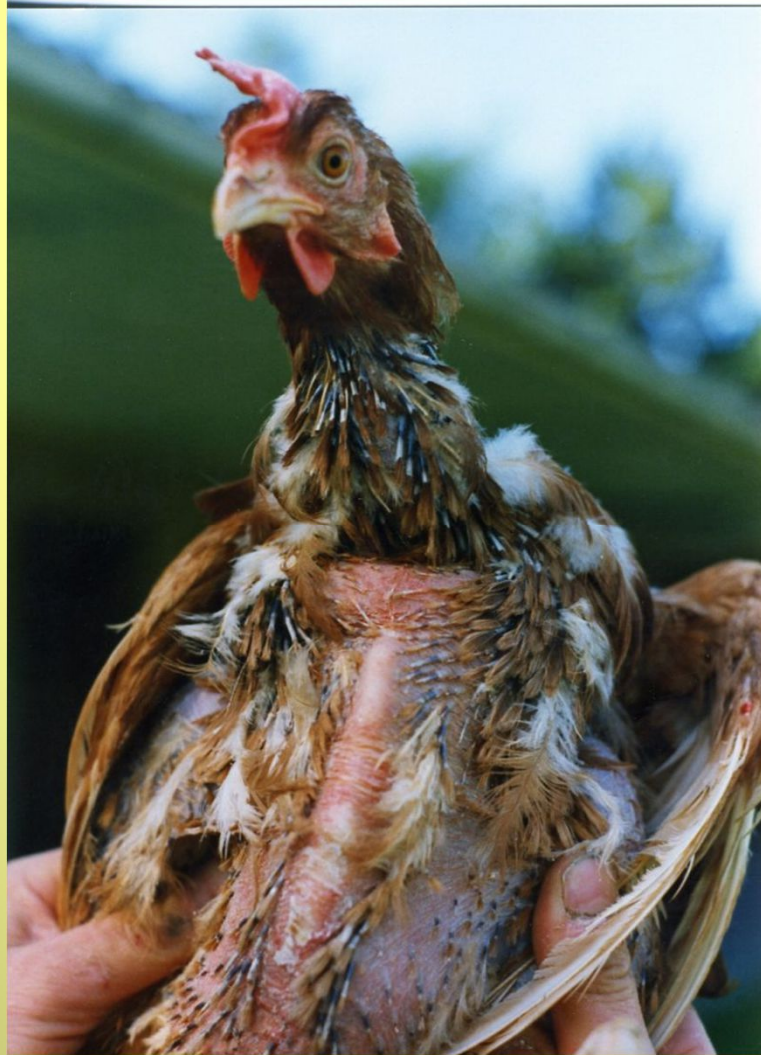


Procedure

- Individual hens are picked up,
- Run down the keel bone with two fingers (e.g. thumb and index finger) and notice if there are deviations from the normally straight line (laterally or dorso-ventrally) or there are thickened sections (callus):

0: no deviation

2: deviation of keel bone









Standardisation of clinical scoring in poultry

Scoring of feet condition in laying hens on farm



Ute Knierim, Christiane Keppler, Marion Staack, Maja Günther
University of Kassel



- Individual hens are picked up,
- if necessary, feet are roughly manually cleaned,
- the foot with the worst condition is scored as:

0: Feet intact, no or minimal proliferation of epithelium

1: Necrosis or proliferation of epithelium or chronic bumble foot with no to moderate swelling

2: Swollen (dorsally visible)

(The distinction between 2 and 1 will often not be 100 % clear, because only the ventral view is available, in practice you also need to look from dorsal, and it will be easier)

1: Necrosis or proliferation of the epithelium



2: Swelling dorsally visible:

Same foot, from ventral and dorsal



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Pros and cons

Animal-based

- More biological
- Measure direct bird welfare
- Needs thorough definitions
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Resource-based

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- Calibration more stable
 - *area, number of nipples, design of house*
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Biosecurity



Thank you very much!

