



List of official WHFF traits

Progress of type harmonisation

Gerben de Jong
Chairman Working Committee

Welcome



History

- Start in 1986
- 1st workshop 1990 Cremona (IT)
- 2nd workshop 1992 Brantford (CA)
- 3rd workshop 1994 Oldenburg (DE)
- 4rd workshop 1997 Madison (US)
- 5th workshop 1999 Toledo (ES)
- 6th workshop 2003 Quebec (CA)
- 7th workshop 2005 Naarden (NL)
- 8th workshop 2007 Cremona (IT)
- 9th workshop 2010 Paris (FR)
- 10th workshop 2012 Niagara Falls (US)
- 11th workshop 2014 Skorping (DK)
- 12th workshop 2016 Buenos Aires (AR)
- 13th workshop 2018 Shifnal (UK)
- 14th workshop 2022 Morges (CH)



Results 14th workshop held in Morges (CHE)



Recommendations:

- Focus traits: Chest Width, Rib Structure, Rear Legs Rear View, Foot Angle, Locomotion, Fore Udder and Udder Support.
- Faster implementation of new traits in classification programs and genetic evaluation i.e. Locomotion and Body Condition and no usage of scores of previous definitions.
- Usage of name Rib Structure instead of Angularity
- Remove cm's for stature in description of trait
- Share phenotypic correlations for analysis
- Body depth should be scored independent from stature. One dimension trait.
- Working group will come with proposal for extra traits and list of conformation defects
- For next workshop topic: Role of classification in future

Working group (2024)



Gerben de Jong (the Netherlands) - chair

Bruno Jubinville (Canada)

Corrado Zilocchi (Italy)

Cy Letter (USA)

Stefan Rensing (Germany)

Tamas Sebok (Hungary)

Thierry Menard (France) – board WHFF

Tony O'Connor (New Zealand)

Pedro Guimaraes Ribas Neto (Brazil)

Working group (2024) new



Gerben de Jong (the Netherlands) - chair

Bruno Jubinville (Canada)

Corrado Zilocchi (Italy)

Cy Letter (USA)

Dorothee Warder (Germany)

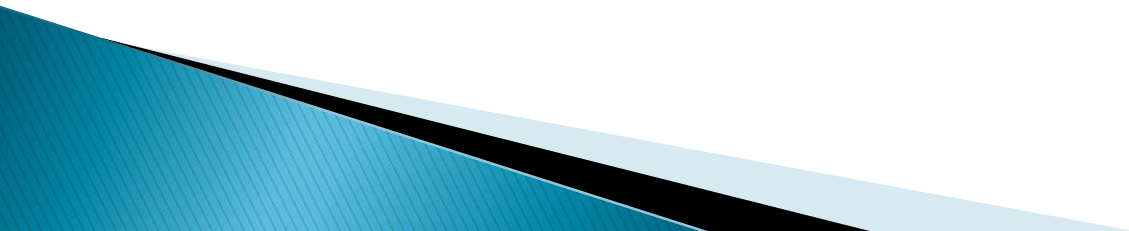
Tamas Sebok (Hungary)

Thierry Menard (France) – board WHFF

Tony O'Connor (New Zealand)

Pedro Guimaraes Ribas Neto (Brazil)

Raffaella Finocchiaro (Italy)





Linear definitions: Approved standard traits

1. Stature
2. Chest width
3. Body Depth
4. Angularity
5. Rump Angle
6. Rump Width
7. Rear Legs rear View
8. Rear Legs Set
9. Foot Angle
10. Locomotion
11. Fore Udder Attachment
12. Front Teat Position
13. Teat Length
14. Udder Depth
15. Rear Udder Height
16. Central Ligament
17. Rear Teat Position
18. Body Condition

Linear Definitions



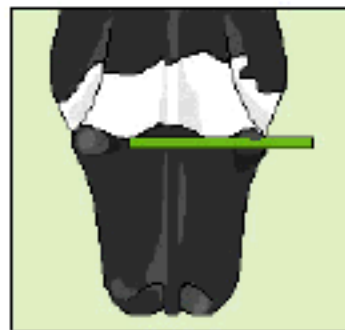
- ◆ Precise description of each trait.
- ◆ Use the full range of linear score to identify extremes and intermediate of each trait within its population (in the country of assessment)
- ◆ Parameters should be based on the expected biological extremes of two year old heifers.

Stature

Ref. point: Measured from top of the spine in between hips to ground.
Precise measurement in centimetres or inches, or linear scale.

- 1 Short
- 5 Intermediate
- 9 Tall

Reference scale: 3 cm per point



Chest Width

Ref. point: Measured from inside surface between the top of the front legs.

1-3 Narrow

4-6 Intermediate

7-9 Wide

Reference scale: 13 cm - 29 cm; 2 cm per point



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Body Depth

Ref. point: Distance between the top of spine and bottom of barrel at last rib – the deepest point. Independent of stature.

1–3 Shallow

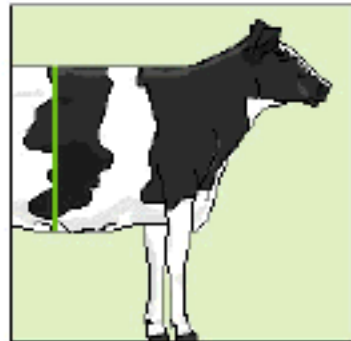
4–6 Intermediate

7–9 Deep

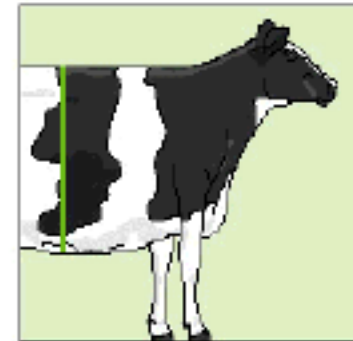
Reference scale: optical in relation with the balance of the animal



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Rib structure

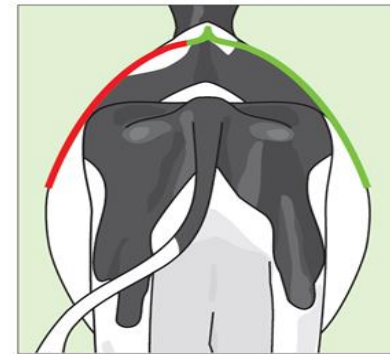
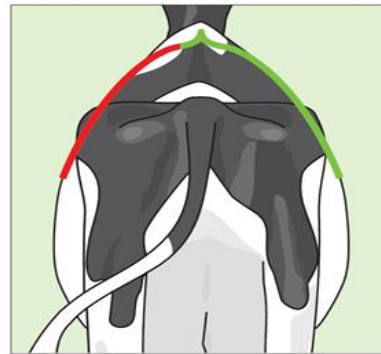
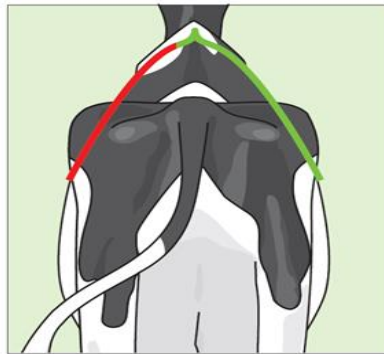


Ref. point: The spring and angle of the ribs (60/40). Not a true linear trait. The best way to score spring, the arch of the ribs, is looking at the cow from behind. Angle is the direction of the ribs (side view). Openness is not part of the definition.

Do the measurement on the left side of the body

- 1-3 Lacks angularity (little spring of ribs, ribs are facing down)
- 4-6 Intermediate angularity
- 7-9 Very angular (much spring of ribs and ribs are pointing rearward)

Rear view

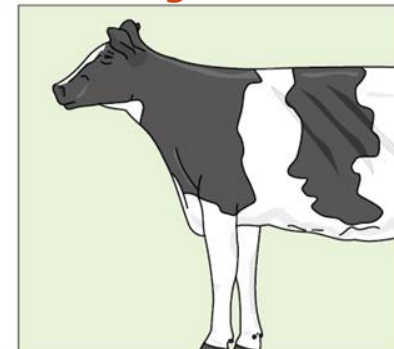
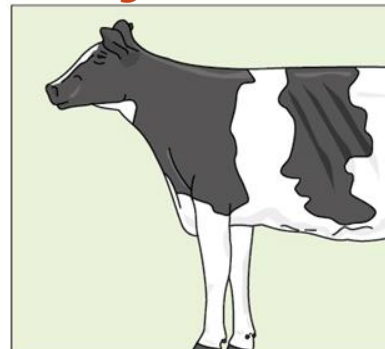
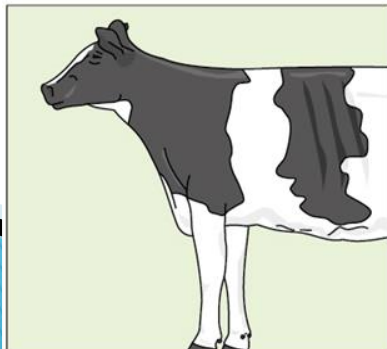


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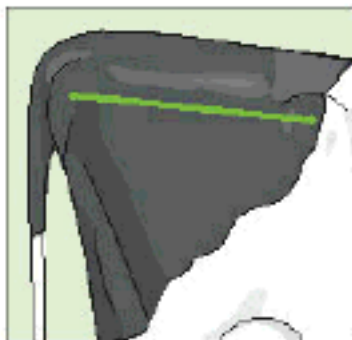
Side view



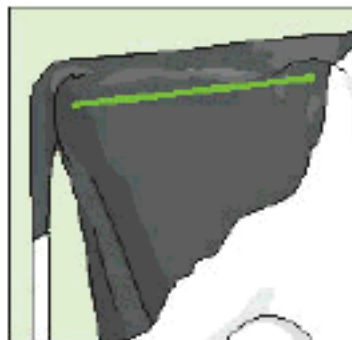
Rump Angle

Ref. point: Measured as the angle of the rump structure from hooks (hips) to pins.

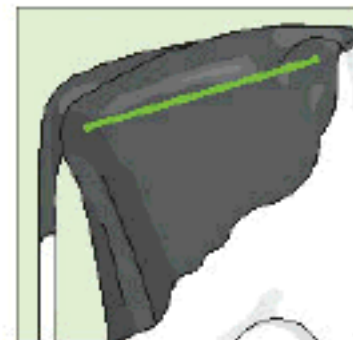
1	High Pins	(+4 cm)	6	(-6 cm)
2		(+2 cm)	7	(-8 cm)
3	Level	(+0 cm)	8	(-10 cm)
4	Slight slope	(-2 cm)	9	Extreme slope (-12 cm)
5	Intermediate	(-4 cm)		



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Rump Width

Ref. point: the distance between the most posterior point of pin bones.

1-3 Narrow

4-6 Intermediate

7-9 Wide

Reference scale: 10 cm - 26 cm; 2 cm per point



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Body Condition

Ref. point: The covering of fat over the tail head and rump, not a true linear trait.

1-3 Poor

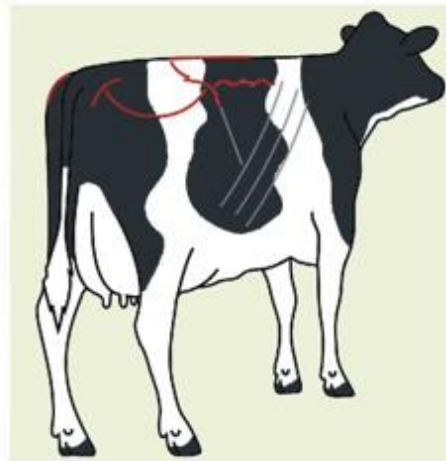
4-6 Intermediate

7-9 Grossly fat

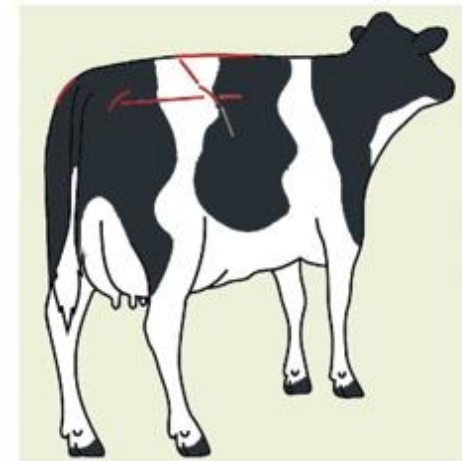
The loin is the main area to observe for scores 1-6, while the tail implant is important with the higher score (7-9)



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Rear Leg Set Side View

Ref. point: Angle measured at the front of the hock.

1-3 Straight (160 degrees)

4-6 Intermediate (147 degrees)

7-9 Sickle (134 degrees)



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Rear Leg Rear View

Ref. point: Direction of the rear toes when viewed from the rear.

- 1 Extreme toe-out
- 5 Intermediate, slight toe-out
- 9 Parallel feet



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Foot Angle

Ref. point: Angle at the front of the rear hoof measured from the floor to the hairline at the right hoof.

1-3 Very low angle

4-6 Intermediate angle

7-9 Very steep

Reference scale: 1 = 15 degrees; 5 = 45 degrees; 9 = 65 degrees

If the Foot Angle is difficult to score because of hooftrimming, bedding, manure, etc it is also possible to look at the Angle of Hairline



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Locomotion

“The use of legs and feet, length and direction of the step”.
Not a true linear trait

Ref. point:

- 1–3 Severe abduction and short stride
- 4–6 Slight abduction and medium stride
- 7–9 No abduction and long stride

Abduction is the lateral deviation in respect to the straight line.

Can and should only be scored in herds where cow regularly do walk and has no lameness. If so, score all cows, be classified that day. The score of 9 means that the rear leg is put straight forward with force upon the step of the foreleg, and (extreme) lame cows getting score 1 because they have short strides.



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Fore Udder

Ref. point: The strenght of attachment of the fore udder to the abdominal wall

1-3 Weak and loose

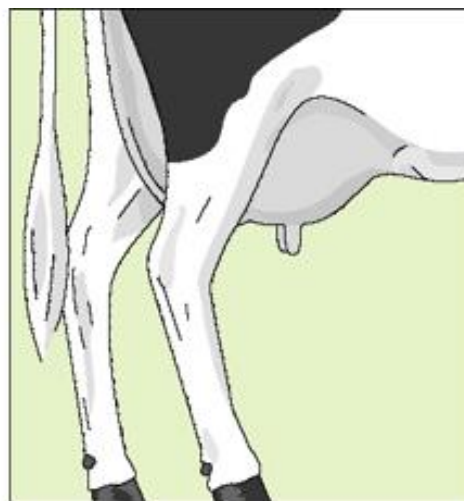
4-6 Intermediate acceptable

7-9 Extremely strong an tight

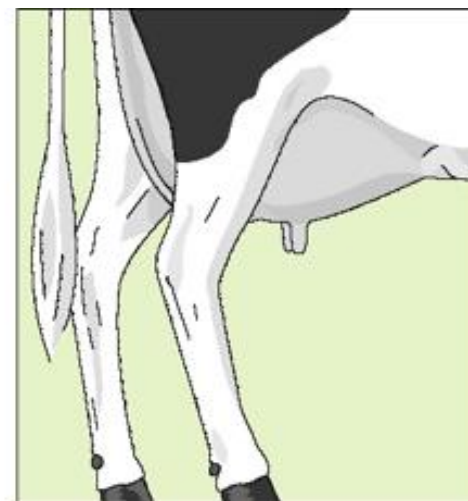
In case of a significant difference in the quality of udder attachment of both sides by scoring fore udder attachment, than the worse side must be scored. This only if the udder is healthy.



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Teat Length

Ref. point: The length of the front teat.

1-3 Short

4-6 Intermediate

7-9 Long

Reference scale: 1 - 9 cm; 1 cm per point



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Rear Udder Height

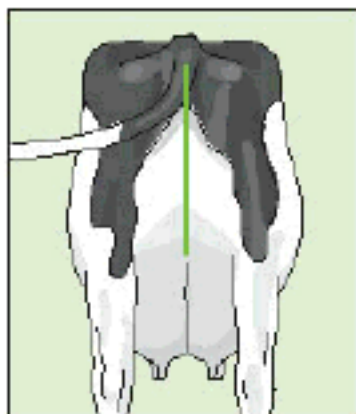
Ref. point: The distance between the bottom of the vulva and the milk secreting tissue: in relation to the height of the animal.

1-3 Very low

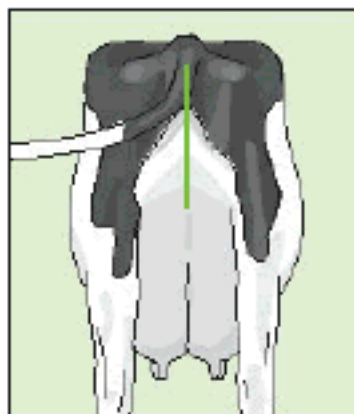
4-6 Intermediate

7-9 High

Reference scale: measured on a scale between the bottom of the vulva and the hock; the midpoint represents a score 4 (29 cm); 2 cm per point



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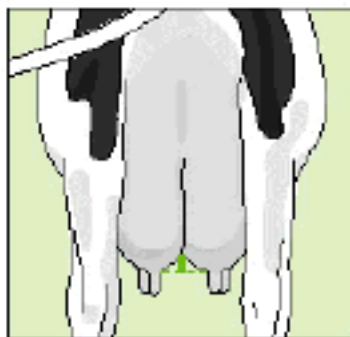
Udder Support

Ref. point: The depth of cleft, measured at the base of the rear udder.

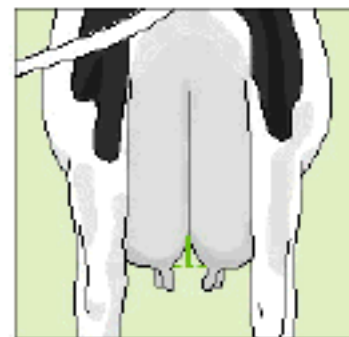
- 1 Convex to flat floor (>0 cm)
- 5 Intermediate (-3 cm)
- 9 (<-6 cm)



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Udder Depth

Ref. point: The distance from the lowest part of the udder floor to the hock

- 1 Below hock
- 2 Level with hock
- 5 Intermediate
- 9 Shallow

Reference scale: level = 2 (0 cm); 3 cm per point



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Teat Placement

Ref. point: The position of the teat from centre of quarter as viewed from the rear.

1-3 Outside of quarter

4-6 Middle of quarter

7-9 Inside of quarter



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Rear Teat Placement

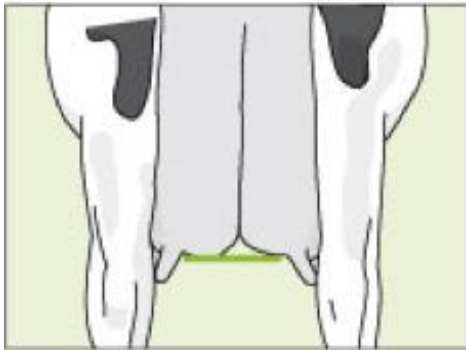
Ref. point: The position of the rear teat from centre of quarter.

1-2 Outside

4 Mid point

7-9 Inside of quarter (8 = touching; 9 = crossing)

Reference scale: to obtain population distribution it is recommended that 4 represents mid point of the quarter



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