THE GLOBAL STANDARD FOR LIVESTOCK DATA

Appendix 1 of Section 5 of the ICAR Guidelines - The standard trait definition for Dairy Cattle

Appendix 1 of Section 5 – Standard Trait Definition for Dairy Cattle
Version June, 2023

Network. Guidelines. Certification.

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Change Summary

Date of Change	Nature of Change
November 2021	Creation of document. Rewrite of guidelines. Relationship between conformation and functional traits added. Standard trait definitions and relationship between conformation and functional traits moved to separate appendices.
June 2023	Trait name Angularity changed to Rib Structure for Dairy Cattle. In 2022 WHFF decided to change the name of angularity to rib structure, to have a better relation with the definition of the trait.

1 Appendix 1. The standard trait definition for Dairy Cattle.

1.1 Approved Standard Traits

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1.2 Common Standard Traits

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1.3   Standard trait definition

The precise description of each trait is well defined and it is essential that the full range of linear scores to identify the intermediate and extremes of each trait be used. The assessment parameters for the calculations should be based on the expected biological extremes of a cow in the first lactation. The scale must cover the biological extremes of the current population.
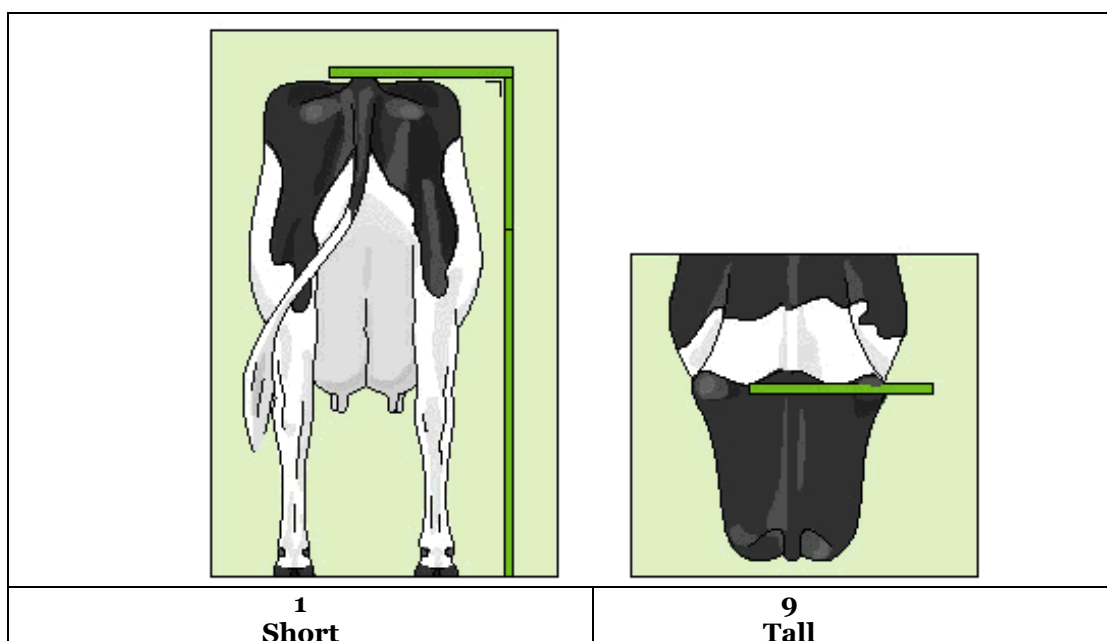
Recommended Scale 1 - 9

Note:

The linear scale used, must cover the expected biological extremes of the population in the country of assessment.

1.   Stature

Reference point: Measured from the top of the spine in between hips to ground. Precise measurement in centimetres or inches, or linear scale.
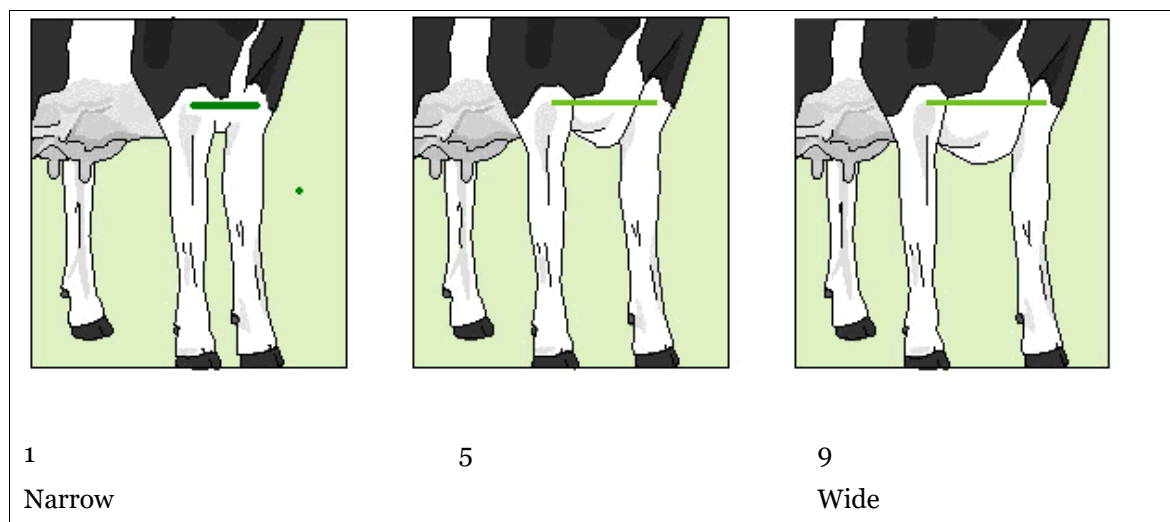
1 - Short
5 - Intermediate
9 - Tall

1 Short	9 Tall

2.   Chest Width

Reference point: Measured from the inside surface between the top of the front legs.
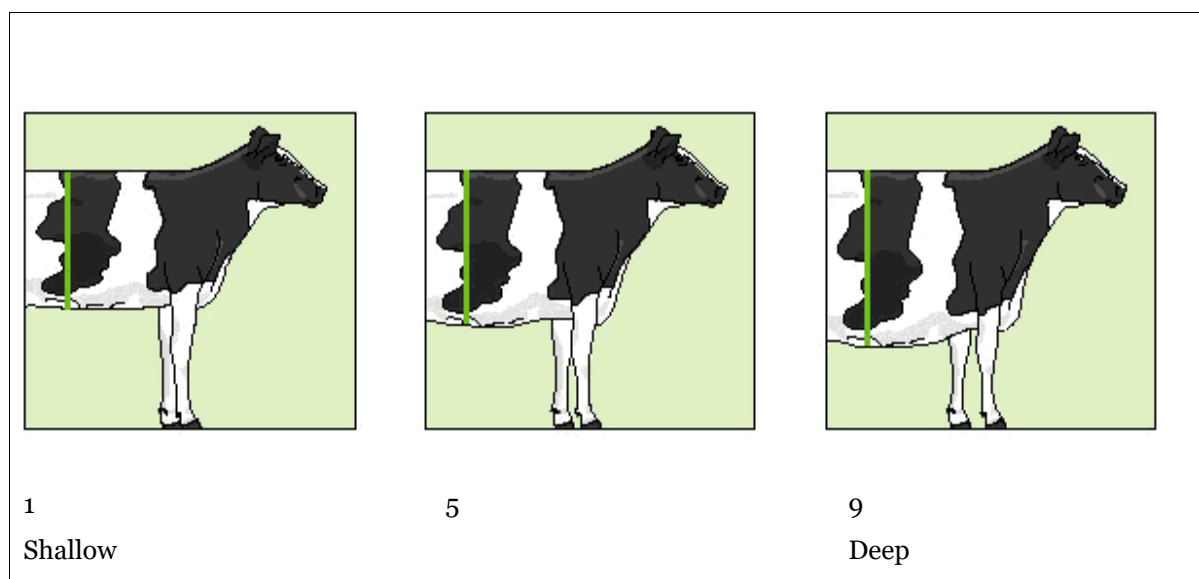1 - Narrow
5 - Intermediate
9 - Wide

1	5	9
Narrow		Wide

3.   Body Depth

Reference point: Distance between top of spine and bottom of barrel at last rib - the deepest point: independent of stature.
1 - Shallow
5 - Intermediate
9 . Deep

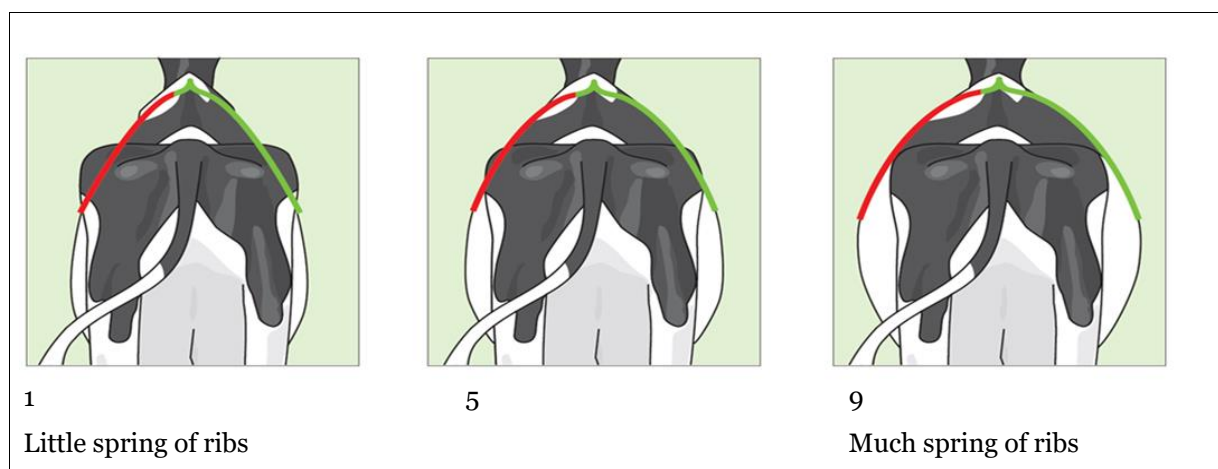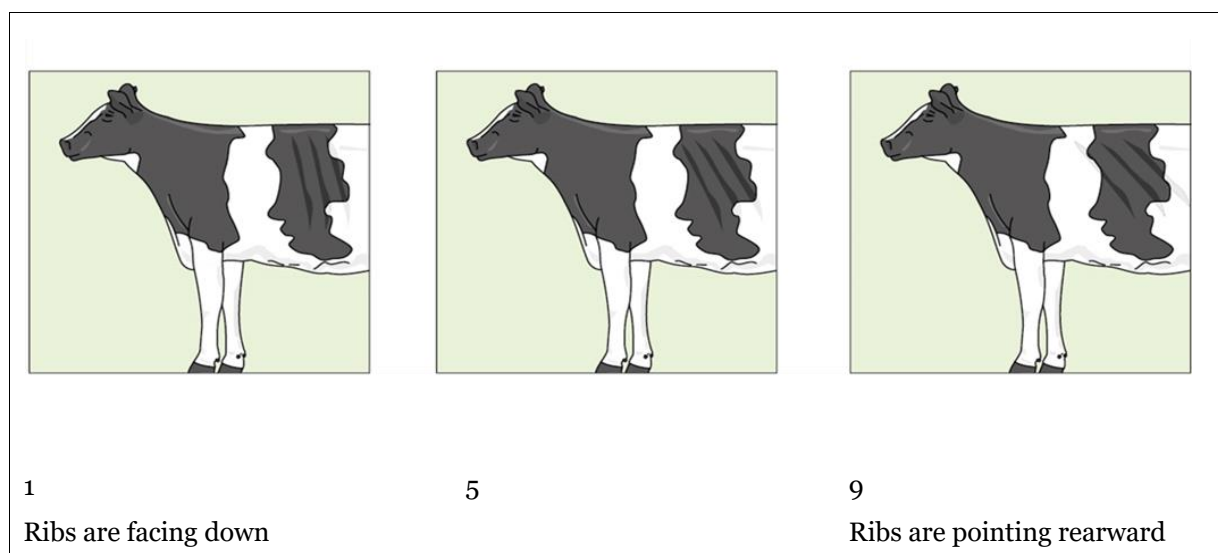| 1	5	9
Shallow		Deep

4.   Rib Structure

Reference point: The spring and angle of the ribs (60/40). Not a true linear trait.
1 - Little spring of ribs, ribs are facing down
5 - Intermediate
9 - Much spring of ribs and ribs are pointing rearward

Reference scale: weighing of the two components; angle and spring of the ribs. The best way to score spring, the arch of the ribs, is looking at the cow from behind. Direction of the ribs is scored looking at the cow from the side. Openness is not part of the definition.
Do the measurement on the left side of the body.

Rear view:

1	5	9
Little spring of ribs		Much spring of ribs

Side view:

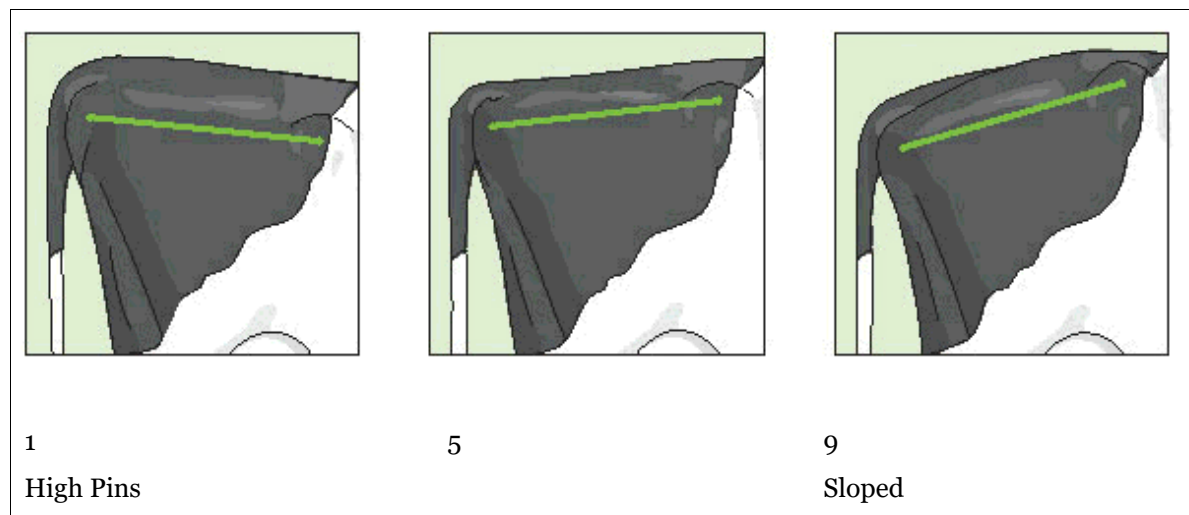| 1	5	9
Ribs are facing down		Ribs are pointing rearward

5.   Rump Angle

Reference point: Measured as the angle of the rump structure from hooks (hips) to pins.
1 - High Pins
5 - Intermediate
9 - Extreme slope

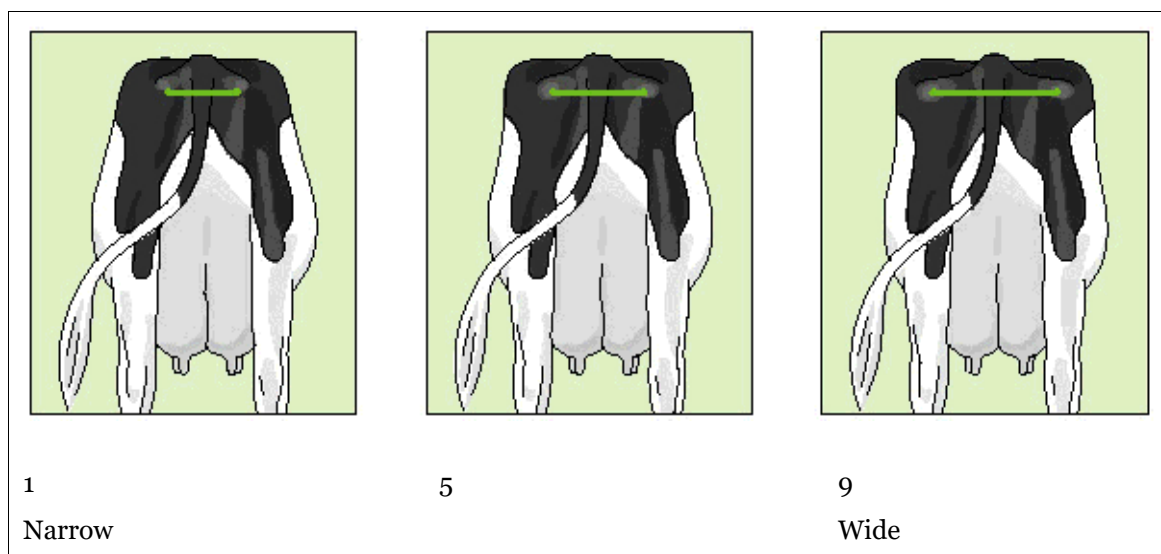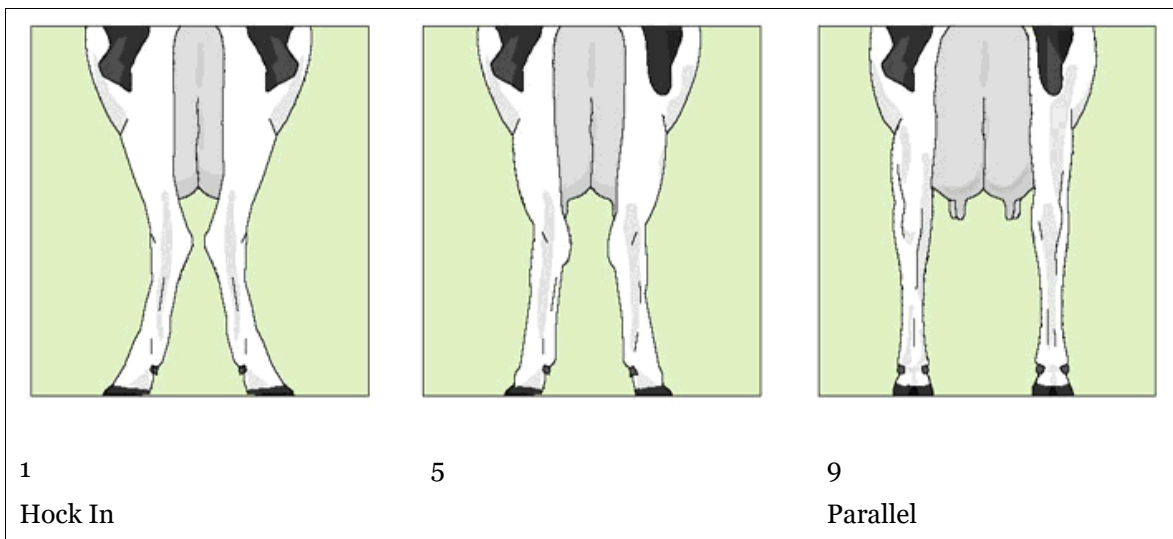Depending on the population rump angle can be scored level with a score in the range of 3-5.

1	5	9
High Pins		Sloped

6.   Rump Width

Reference point: The distance between the most posterior point of pin bones.
1 - Narrow
5 - Intermediate
9 - Wide

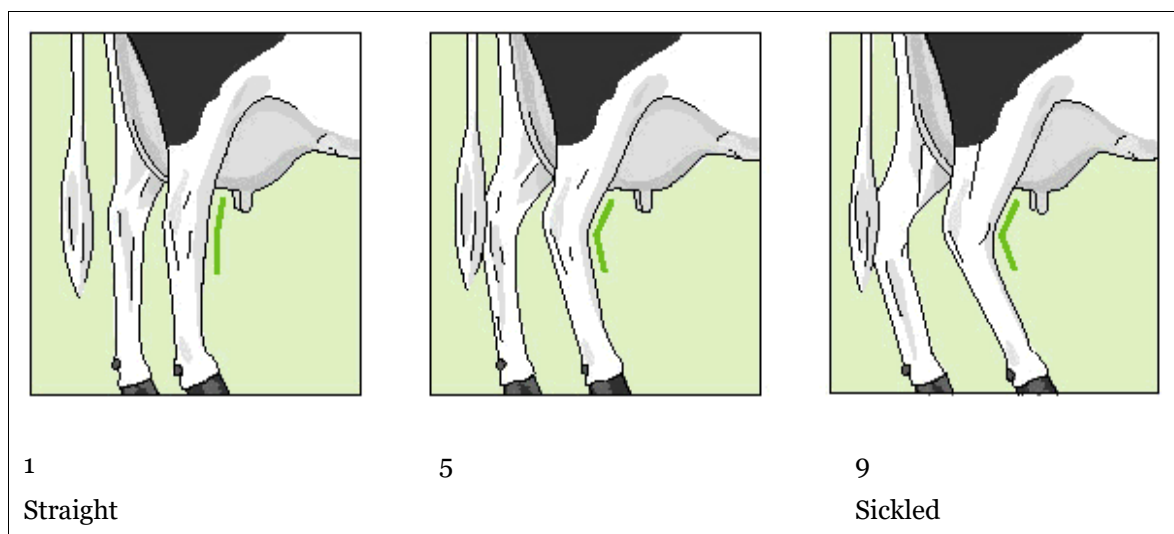| 1	5	9
Narrow		Wide

7.   Rear Legs Rear View

Reference point: Direction of rear feet when viewed from the rear.
1 - Extreme toe-out
5 - Intermediate; slight toe-out
9 - Parallel feet

1	5	9
Hock In		Parallel

8.   Rear Legs Set

Reference point: Angle measured at the front of the hock.
1 - Straight
5 - Intermediate
9 - Sickled

If the rear legs set is different, the most extreme one should be scored.
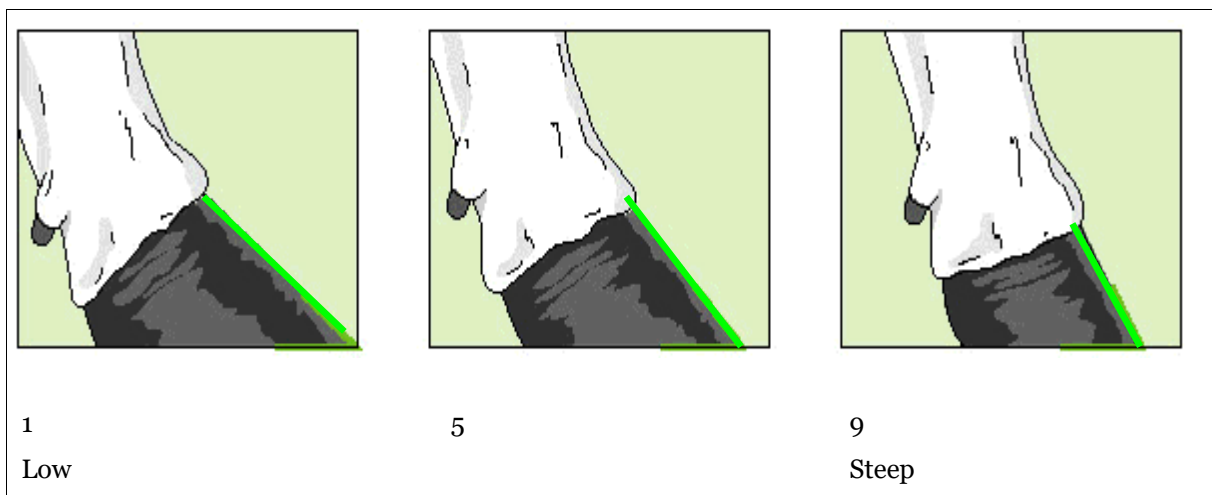

1	5	9
Straight		Sickled

9.   Foot Angle

Reference point: Angle at the front of the rear hoof measured from the floor to the hairline at the right hoof.
1 - Very low angle
5 - Intermediate
9 - Very steep

If the foot angle is different, the most extreme one should be scored.
If the foot angle is difficult to score because of hoof trimming, bedding, manure etc. It is also possible to look at the angle of hairline.
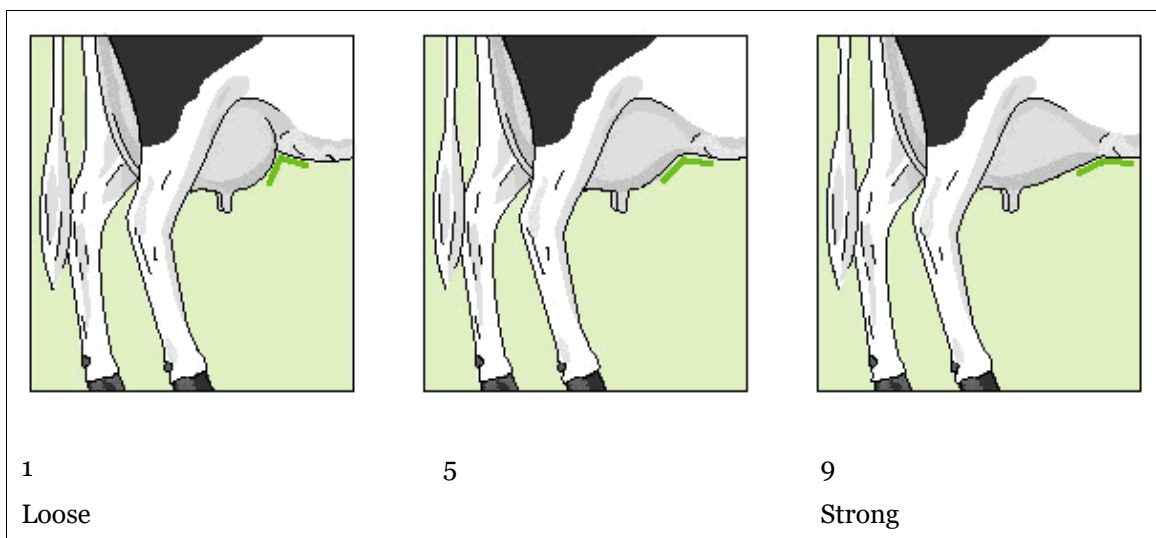

1
Low

5

9
Steep

10.   Fore Udder Attachment

Reference point: The strength of attachment of the fore udder to the abdominal wall.
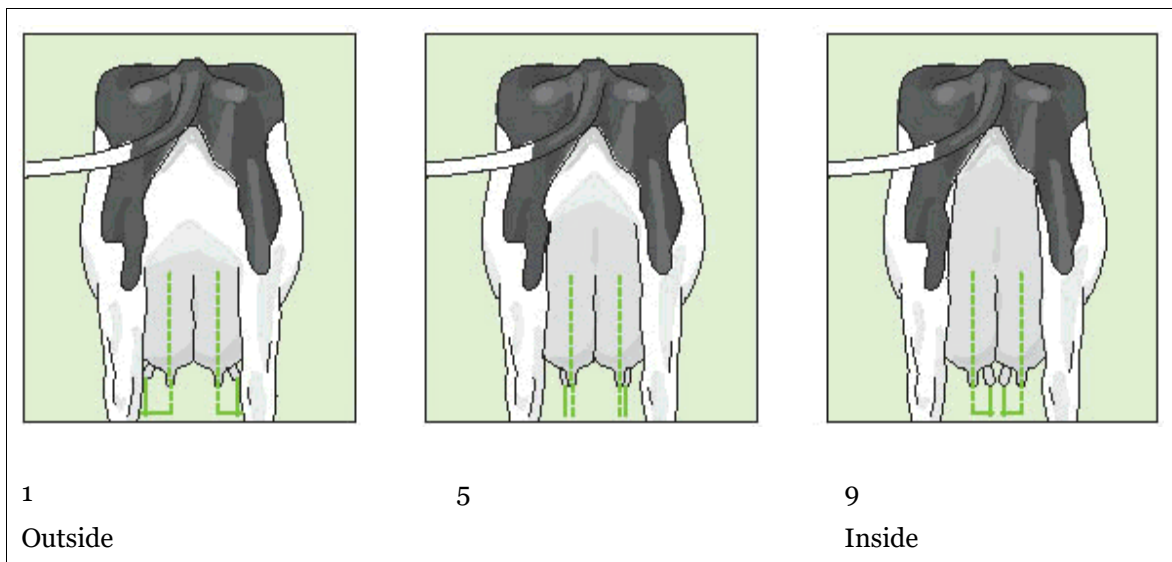Not a true linear trait.
1 - Weak and loose
5 - Intermediate
9 - Extremely strong and tight

1
Loose

5

9
Strong

11.   Front Teat Placement

Reference point: The position of the front teat from the centre of quarter as viewed from the rear.
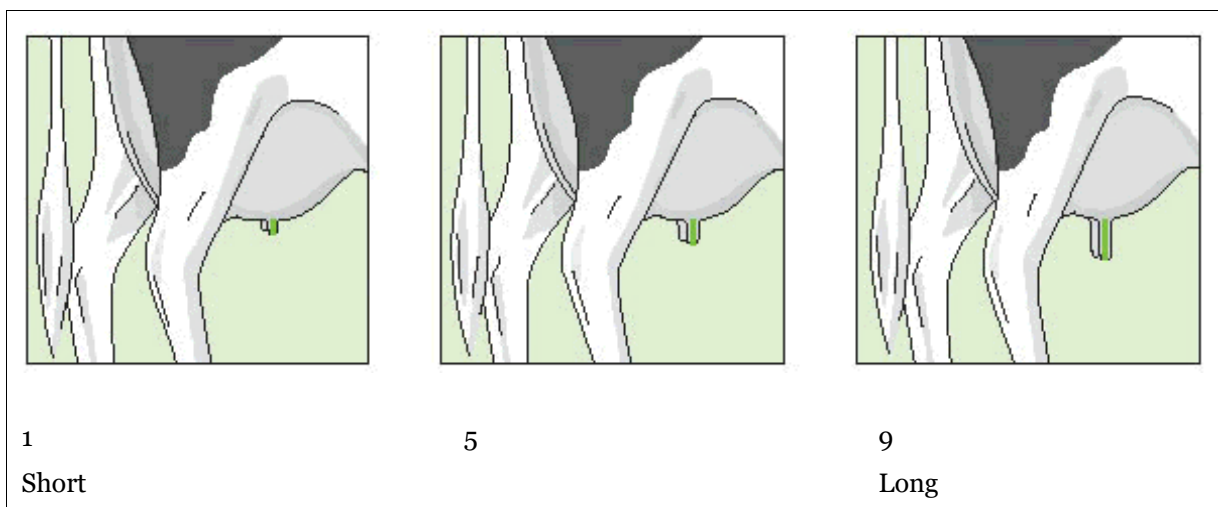1 - Outside of quarter
5 - Intermediate
9 - Inside of quarter

1	5	9
Outside		Inside

12.   Teat Length

Reference point: The length of the front teat.
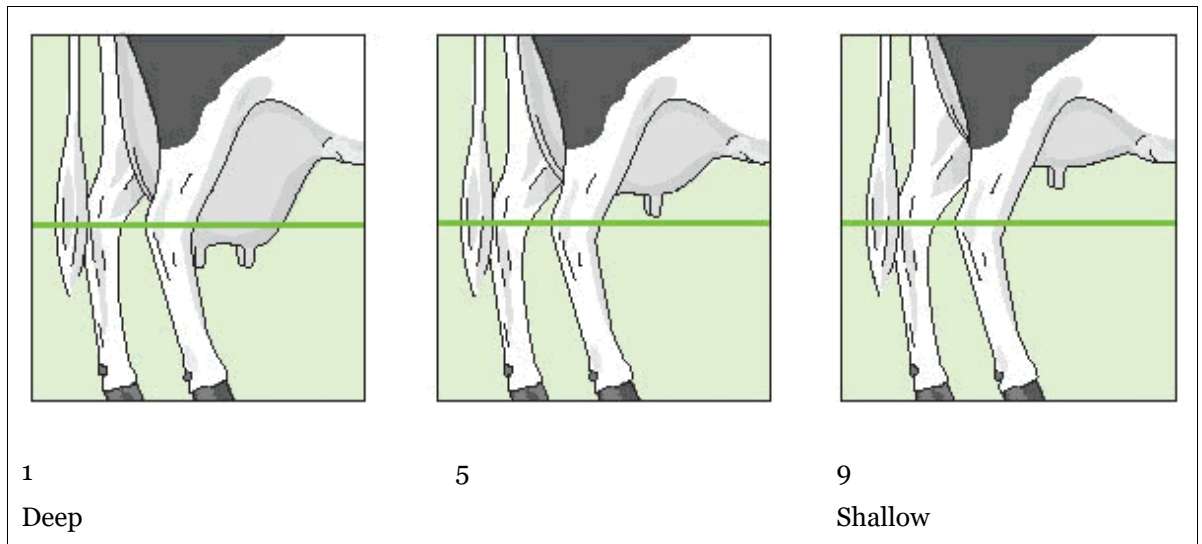1 - Short
5 - Intermediate
9 - Long

Instead of scoring front teat, the rear teat can be scored. The choice of front teat or rear teat should be consistent in the whole system.

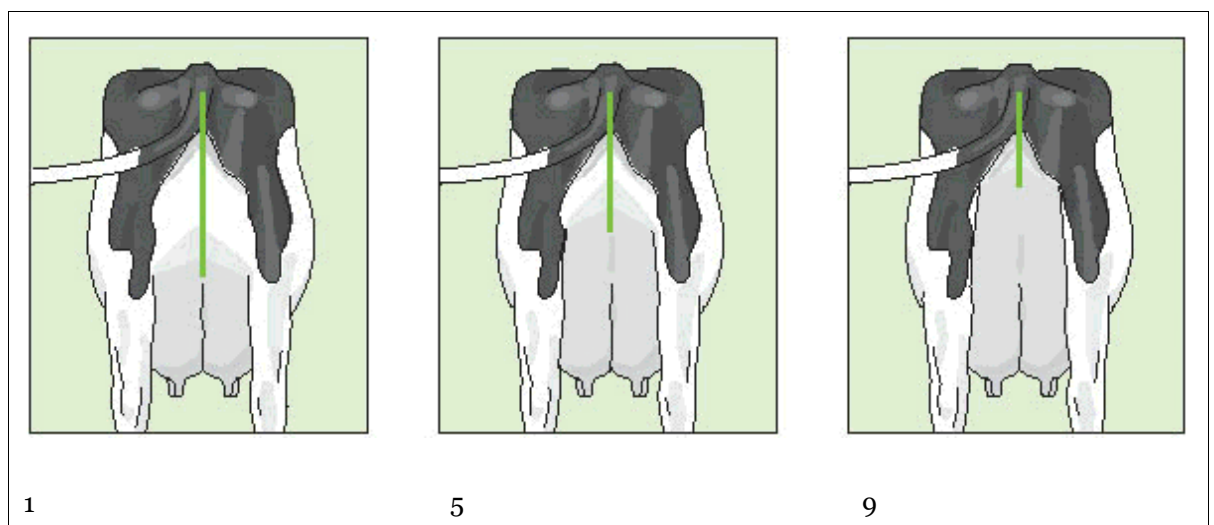| 1	5	9
Short		Long

13. Udder Depth

Reference point: The distance from the lowest part of the udder floor to the hock.
1 - Deep
5 - Intermediate
9 - Shallow

Potential point of reference is the level with the hock.

1	5	9
Deep		Shallow

14. Rear Udder Height

Reference point: The distance between the bottom of the vulva and the milk secreting tissue: in relation to the height of the animal.
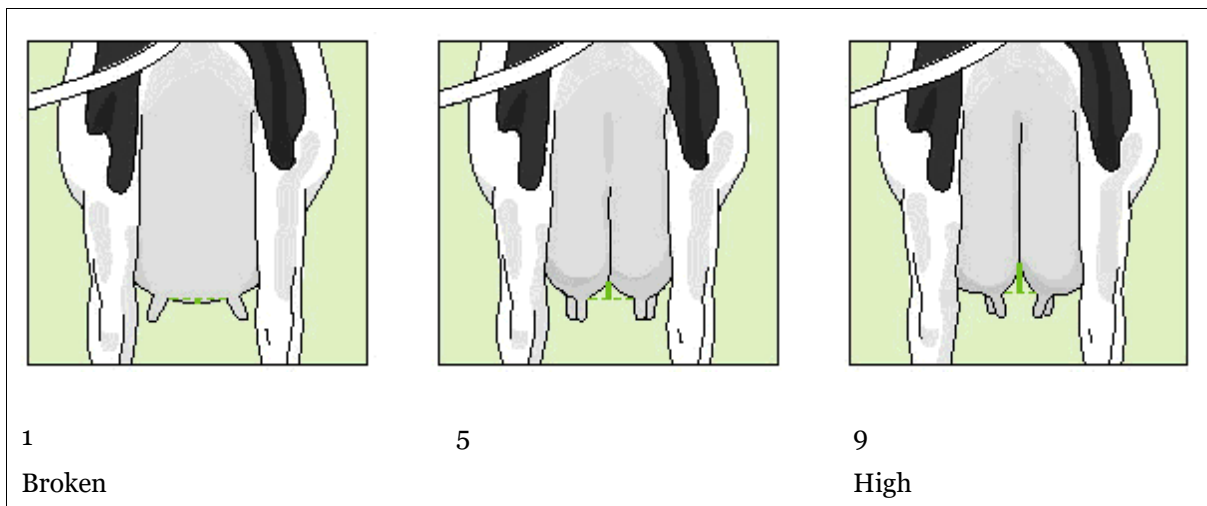1 - Low
5 - Intermediate
9 - High

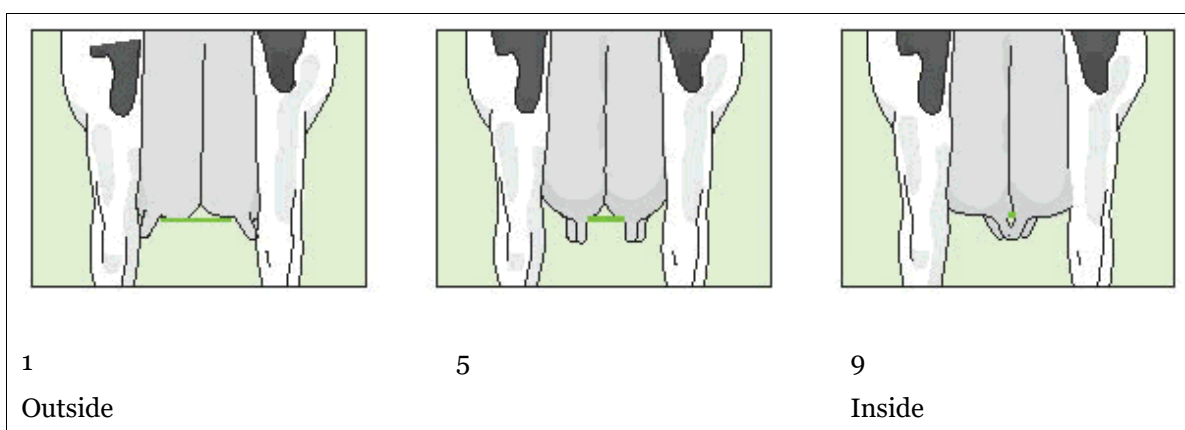| 1	5	9

Low	High

15. Central Ligament

Reference point: The depth of cleft at the base of the rear udder.
1 - Convex to flat floor (flat), broken ligament
5 - Intermediate
9 - Deep cleft/strong ligament

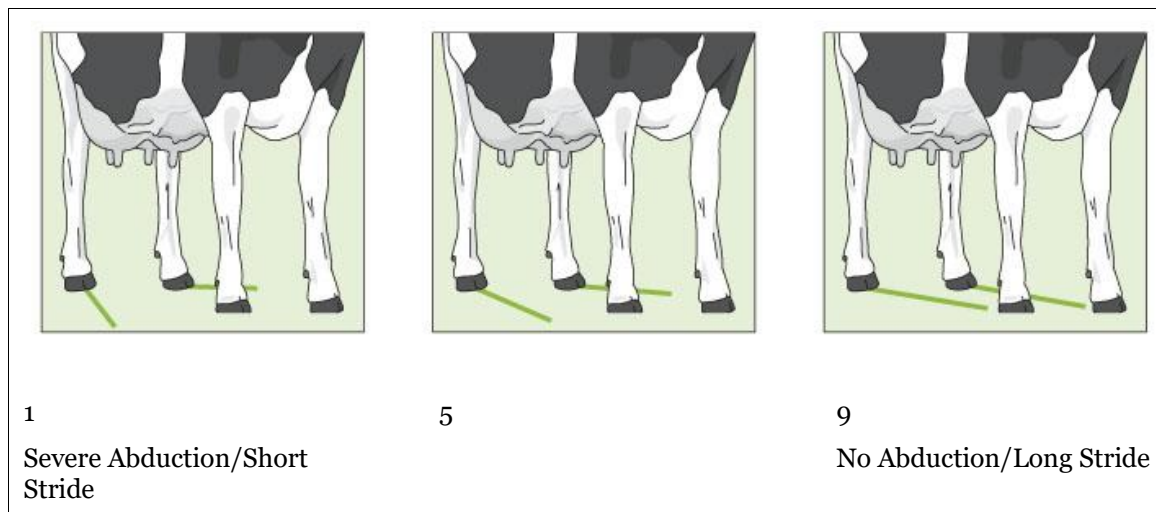| 1	5	9
Broken		High

16. Rear Teat Placement

Reference point: The position of the rear teat from the centre of quarter:
1 - Outside of quarter
5 - Intermediate
9 - Inside of quarter

1	5	9
Outside		Inside

17.   Locomotion

Reference point: The use of legs and feet, length and direction of the step.
1 - Severe Abduction - Short Stride
5 - Slight Abduction - Medium Stride
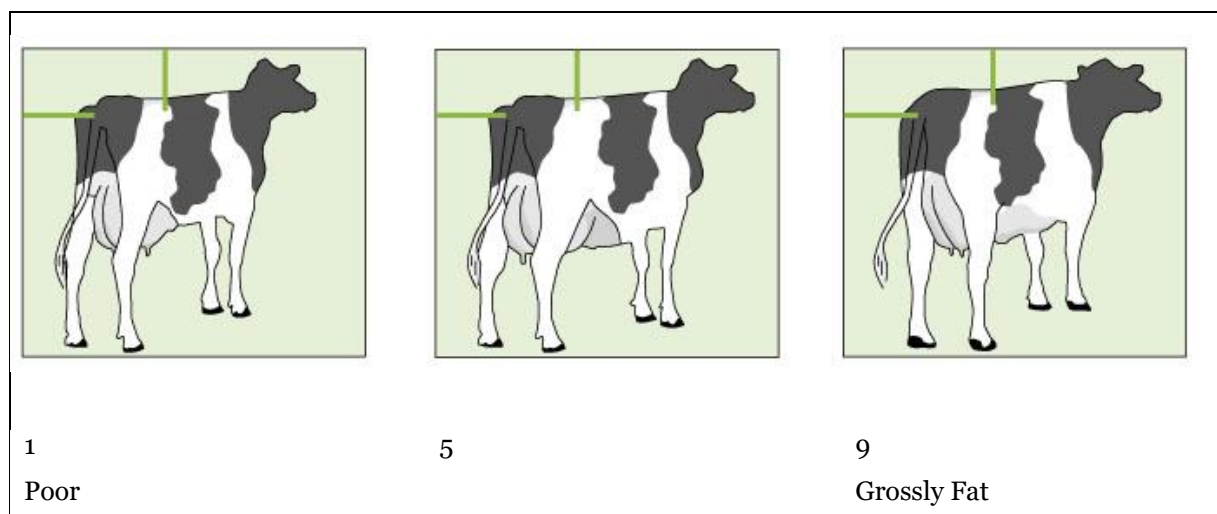9 - No Abduction - Long stride

Score only if the cow can walk (cow has no lameness).

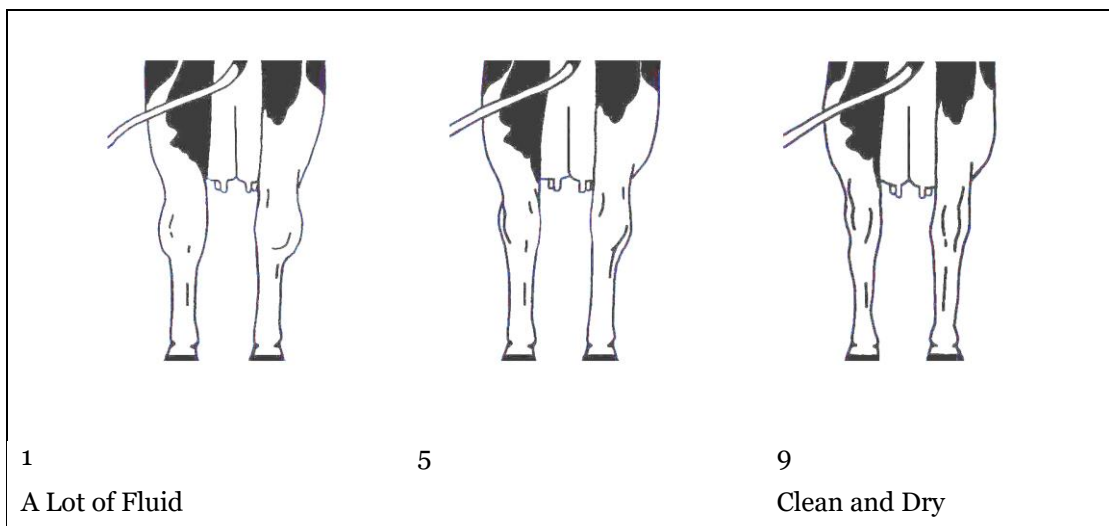| 1	5	9
Severe Abduction/Short Stride		No Abduction/Long Stride

18.   Body Condition Score

Reference point: The covering of fat over the tail head & rump. Not a true linear trait.
1 - Poor
5 - Intermediate
9 - Grossly fat

With a score from 1-6 there mainly has to be looked at the loin, while the tail implant is important with the higher score (7-9).
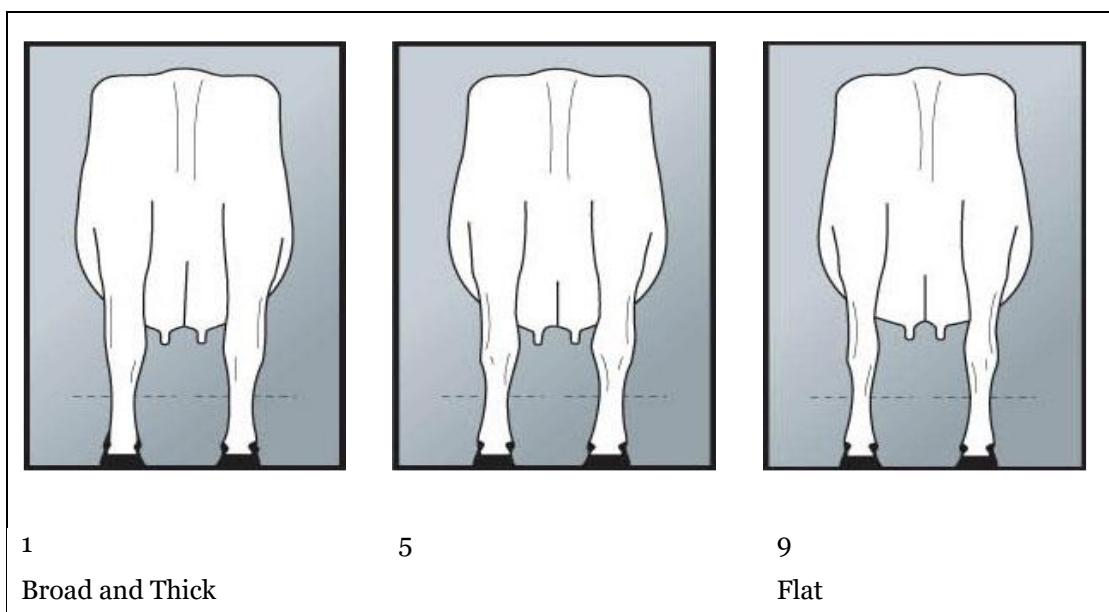

1	5	9
Poor		Grossly Fat

19. Hock development

Reference point: Cleanness and dryness of the hock.
1 - Hock with a lot of fluid
5 - Intermediate
9 - Complete clean and dry

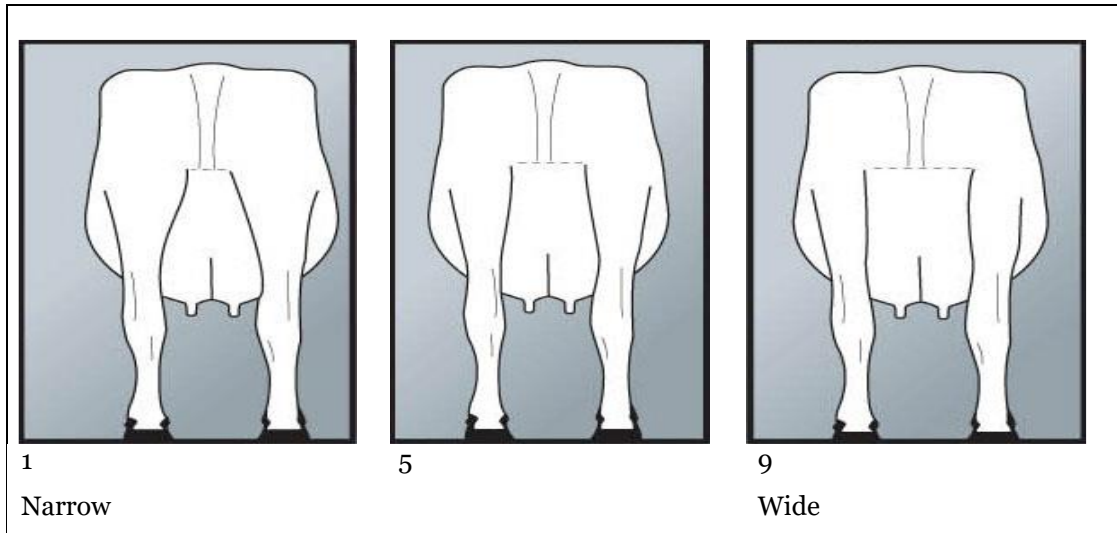| 1	5	9
A Lot of Fluid		Clean and Dry

20. Bone structure

Reference point: The thickness and width of the bone structure, assessed by both examining the rear leg from the rear and from the side.
1 - Broad and thick
5 - Intermediate
9 - Flat

1	5	9
Broad and Thick		Flat

21.   **Rear udder width**

Reference point: Width of the udder at the point where the milk secretion tissue
is attached to the body.
1 - Narrow
5 - Intermediate
9 - Wide

1	5	9
Narrow		Wide

22.   **Teat thickness**

Reference point: Thickness of the teat in the middle of the front teat.
1 - Thin
5 - Intermediate
9 - Thick

23.   Muscularity

Reference point: The amount of muscles as seen in the loins and thighs. Not a linear trait.
1 - Poor
5 - Intermediate
9 - Grossly muscular

1	5	9
Poor		Grossly Muscular