

# CONFORMATION RECORDING OF DAIRY CATTLE

The ICAR multi dairy breed conformation recording recommendation integrates with the World Holstein-Friesian Federation guidelines on the international harmonization of linear type assessment, trait definition, evaluation standards and publication of type proofs for bulls. The data collected within these recommended standards qualifies for MACE evaluation by Interbull.

## Linear Type Traits

Linear type traits are the basis of all modern type classification systems, and are the foundation of all systems for describing the dairy cow. Linear classification is based on measurements of individual type traits instead of opinions. It describes the degree of trait not the desirability.

Advantages of linear scoring are:

- Traits are scored individually
- Scores cover a biological range
- Variation within traits is identifiable
- Degree rather than desirability is recorded

## Approved Standard Traits

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

## NAV-traits

1. Top Line
2. Hock Quality
3. Bone Structure
4. Rear Udder Width
5. Udder Balance
6. Teat thickness

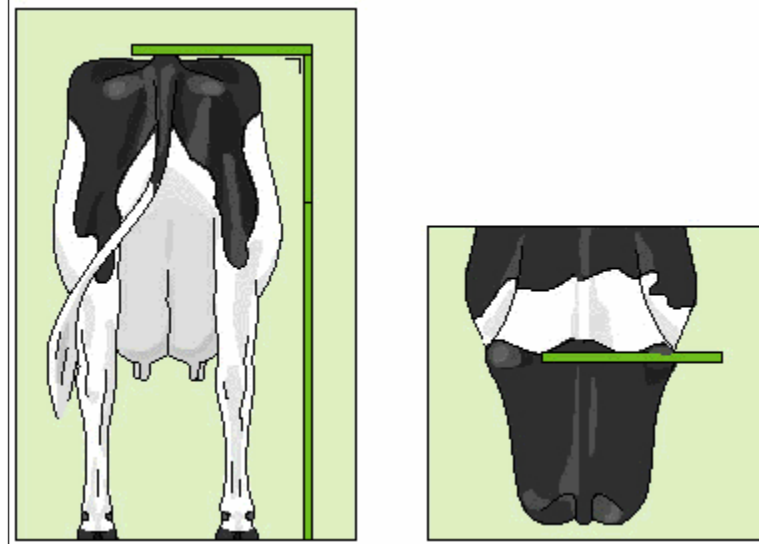
# Assessing Linear Conformation Traits Drawings and Descriptions

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## Body

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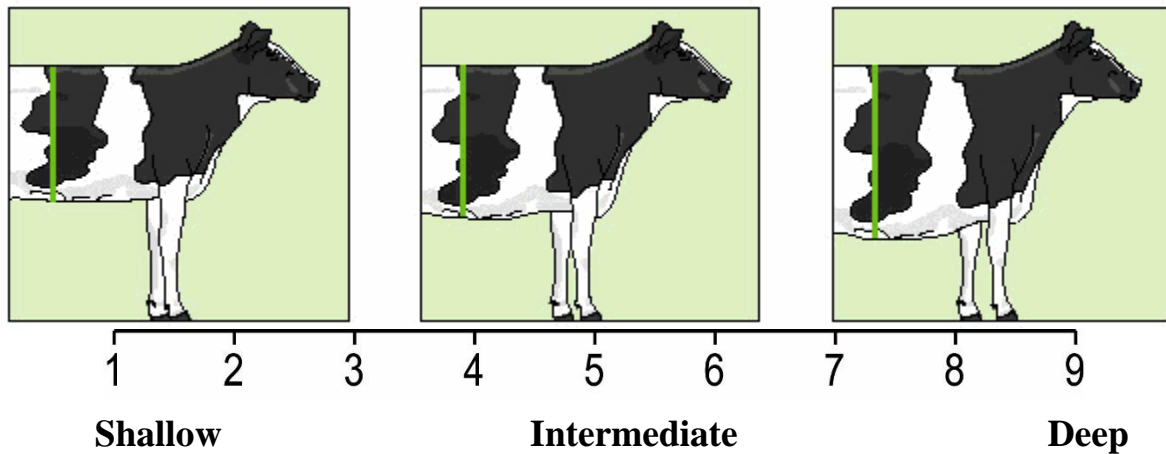
### Stature



The stature is measured from top of the spine to ground, just between the hips. The result is given in centimeters.

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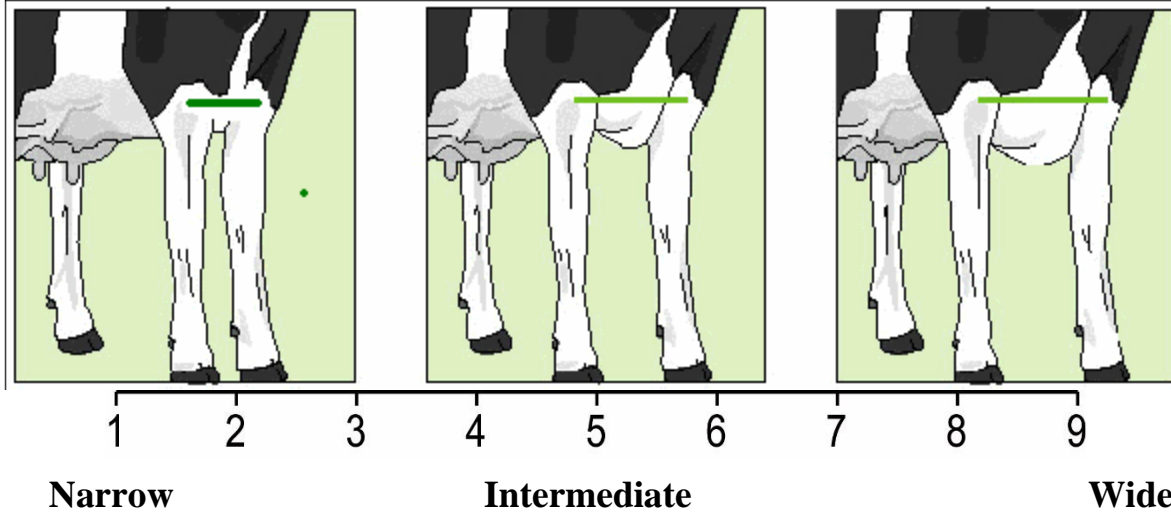
### Body Depth



The body depth is classified, independent of stature, as the distance between the top of the spine and, the bottom of the body at the start of the last rib – at the deepest point of the body. A very deep body is scored 9, while a shallow one is scored 1. If the body depth, on a medium sized cow, is as deep as the distance between the body and floor, the cow is scored 3.

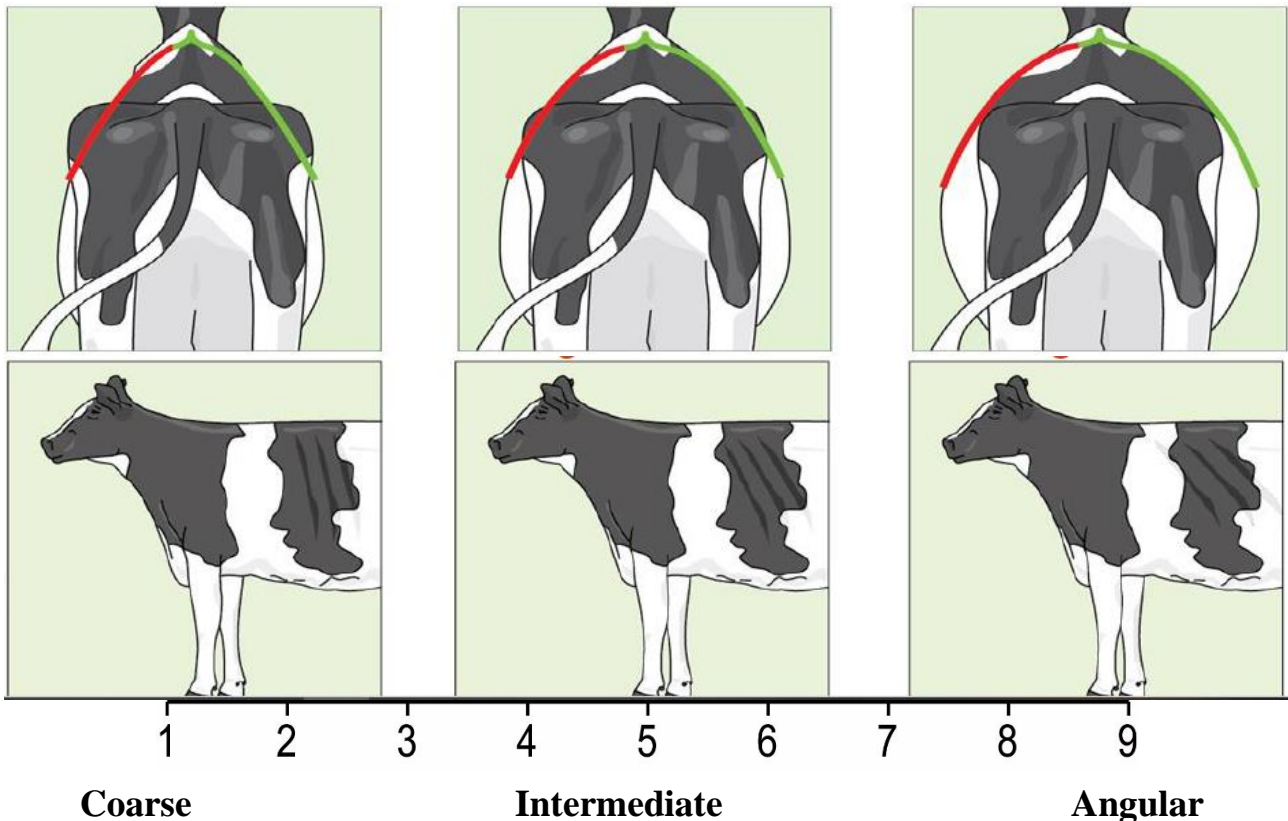
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## Chest Width



The chest width is measured diagonally from behind, as the distance between the top of the front legs and the width of the shoulders. A cow with a very wide front part, and front legs far apart and a broad shoulder is scored 9. A cow with a frail shoulder, and front legs close to each other is scored 1.

## Rib structure



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)–scored from left side alternatively right side. Openness is not a part of the definition.

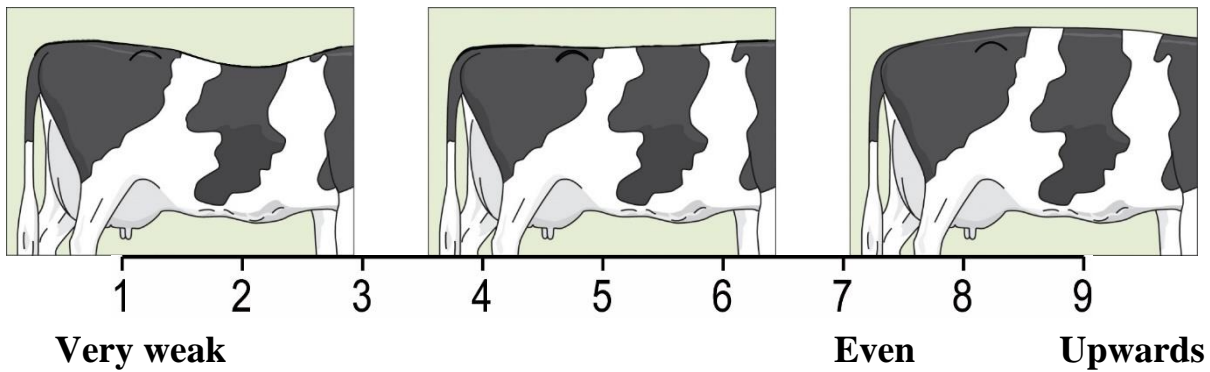
1 – 3: Lacks angularity (little spring of ribs, and ribs are facing down)

4 - 6: Intermediate angularity

7 – 9: Very angular (Much spring of ribs, and ribs are pointing rearwards)

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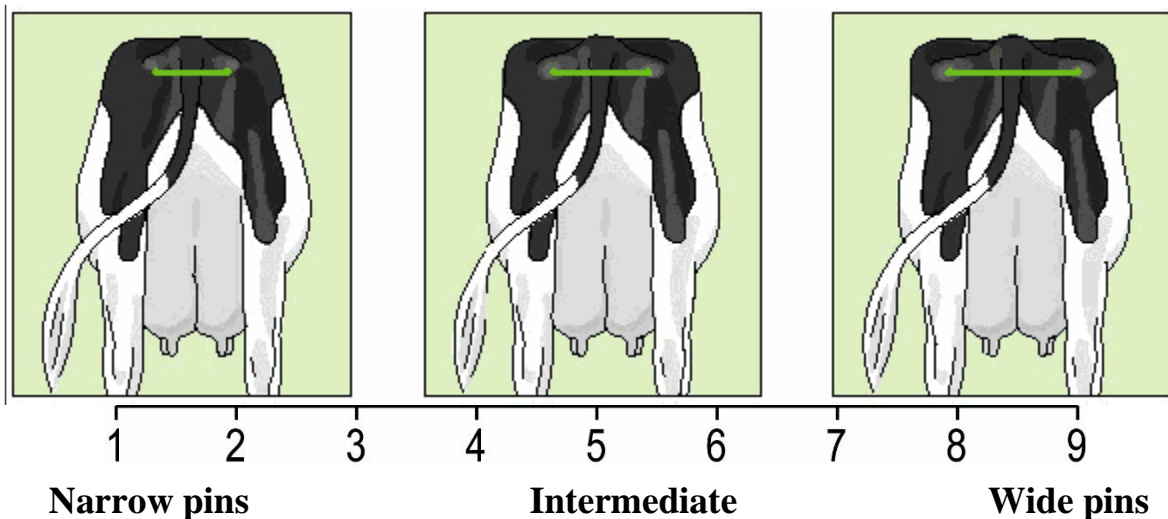
## Top Line



The top line includes withers, back and loin. An even and straight back receives score 7. A back bent upwards is given score 9, while the weak and low back obtains score 1.

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## Rump Width



Rump width is measured as the distance between the most posterior point of pin bones. A very wide rump (large distance between the pin bones) receives score 9, while the extremely narrow rump receives score 1.

Holstein and Red breeds:

Score 1: very narrow pins, approx. 10 cm

Score 5: intermediate pins, approx. 18 cm

Score 9: very wide pins, approx. 26 cm.

Jersey:

Score 1: very narrow pins, approx. 8 cm

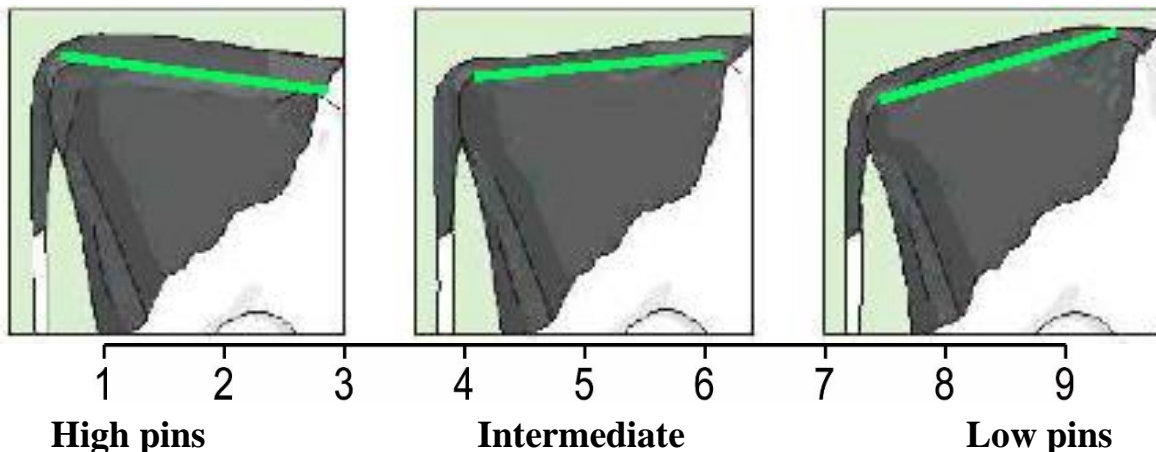
Score 5: intermediate pins, approx. 14 cm

Score 9: very wide pins, approx. 20 cm

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## Rump Angle



Rump angle is classified as the angle of the rump structure from hips to pins, from side of the cow. If pins are much higher than hips, cow receives score 1. If hips and pins are on the same level, score 3 is given. Score 5 describes hips 4 cm higher than the pins. If the pins are very much lower than the hips, score 9 is given.

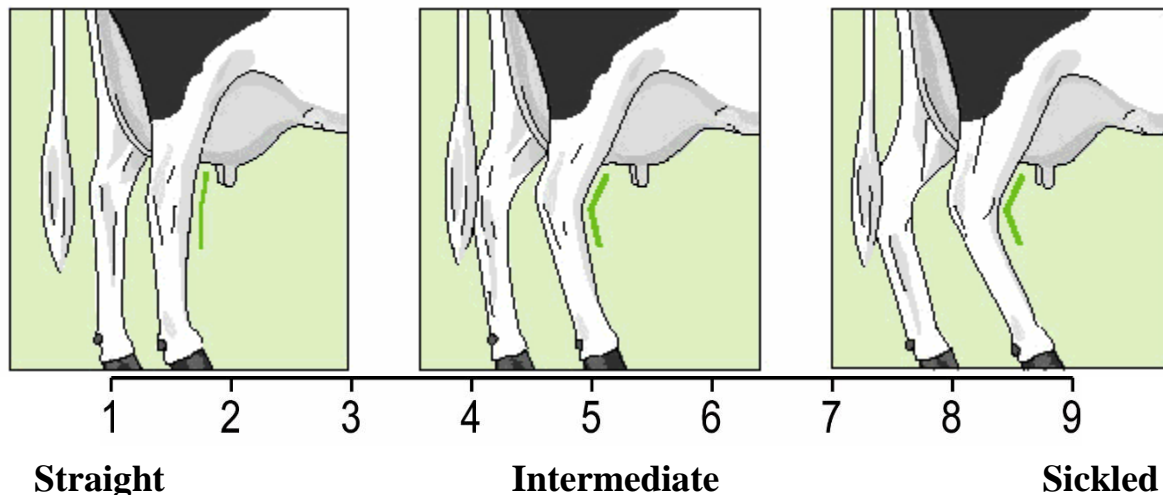
- Score 1: pins are 4 cm higher than hips
- Score 3: pins and hips are at the same level
- Score 5: pins are 4 cm lower than hips
- Score 7: pins are 8 cm lower than hips
- Score 9: pins are 12 cm lower than hips

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## Feet & legs

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### Rear Leg Side View



The rear leg set is always classified from the side. The optimal angle at the hocks measures 150 to 155 degrees. A bigger angle means straight rear legs and a lower angle sickled rear legs. Score 9 describes an extremely sickled leg, while score 1 describes a very straight rear leg as seen from the side.

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## Rear Leg Rear View



1                      2                      3                      4                      5                      6                      7                      8                      9

**Toes out**

**Intermediate**

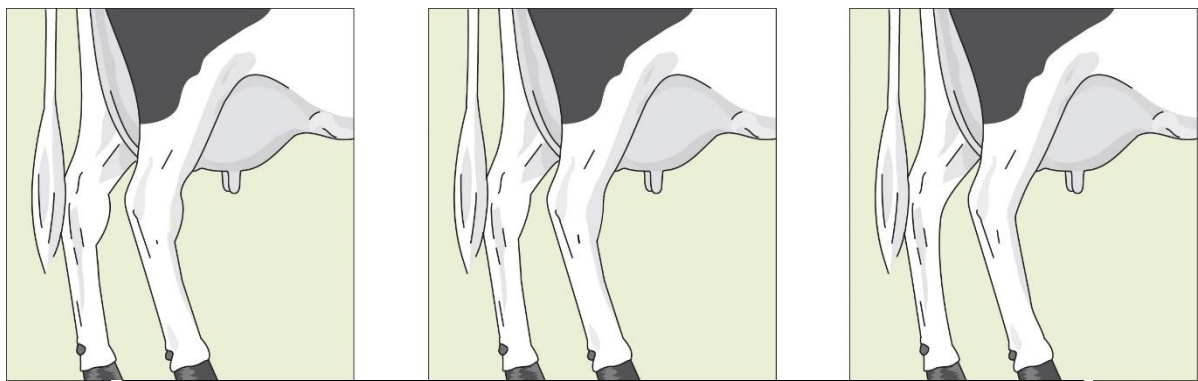
**Parallel Bow-legged**

Rear legs rear view is assessed as direction of the rear feet when view from rear.

- 1 = extreme toe-out
- 5 = intermediate, slight toe-out
- 8 = parallel feet
- 9 = bow-legged

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## Hock Quality



1                      2                      3                      4                      5                      6                      7                      8                      9

**Filled**

**Intermediate**

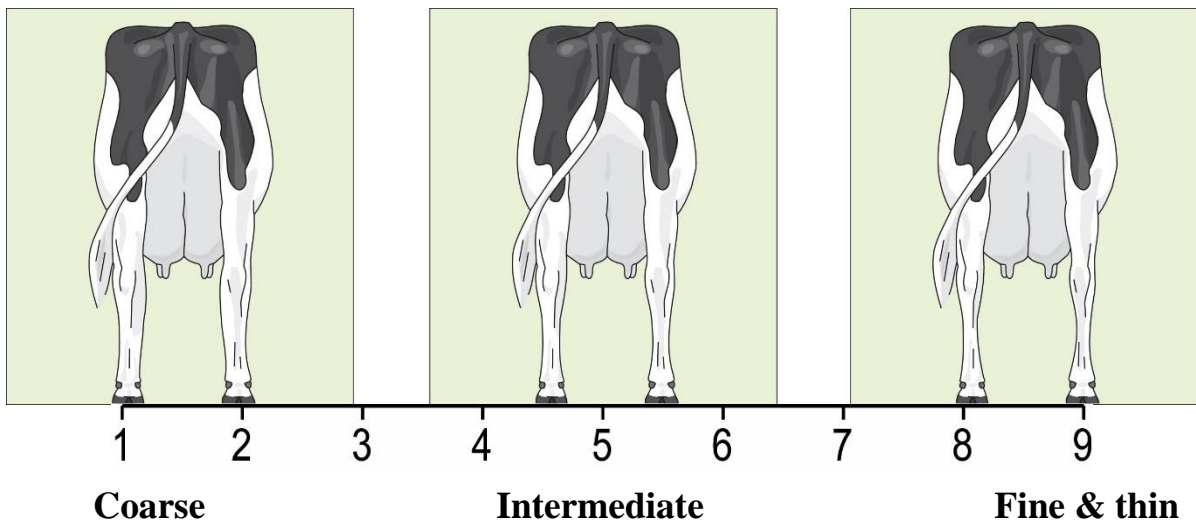
**Dry**

The quality of the hocks is assessed from the back as well as from the side of the cow. The bone structure is not part of the assessment. The completely 'clean and dry' hock without any fluid receives score 9. If some fluid can be assumed in the hock, the score will be lower than 9. A hock filled with a lot of fluid receives score 1.

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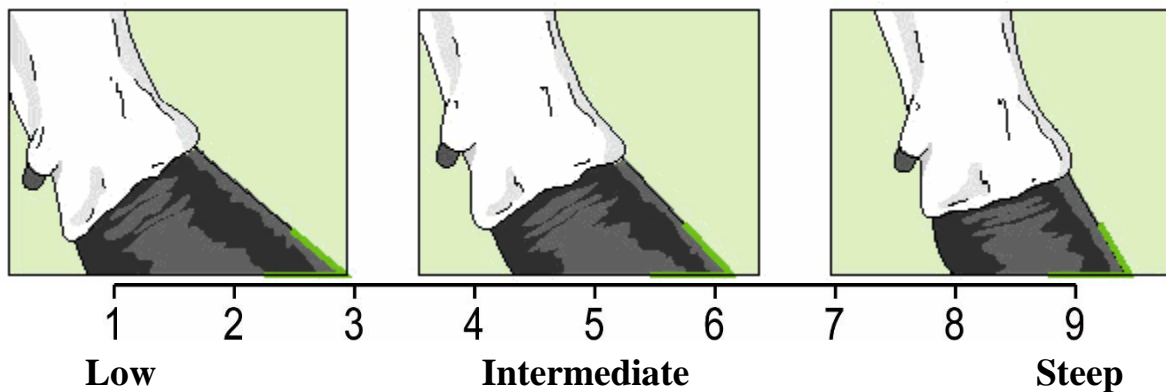
## Bone Structure



The bone structure is assessed by looking at the rear legs. The thickness and width of the bone structure itself is assessed by both examining the rear leg from the rear and from the side, especially by viewing the cannon bone. The very fine and thin bones receive score 9. Very coarse bones (broad and thick) receive score 1.

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## Foot Angle



The foot angle describes the angle at front of the rear hoof, measured from the floor to the hairline. If the Foot Angle is difficult to score because of hooftrimming, bedding, manure etc. it is possible to look at the angle of hairline.

- 1 – 3: Very low angle
- 4 – 6: Intermediate angle
- 7 – 9: Very steep

1 = 15 degrees, 5 = 45 degrees, 9 = 65 degrees

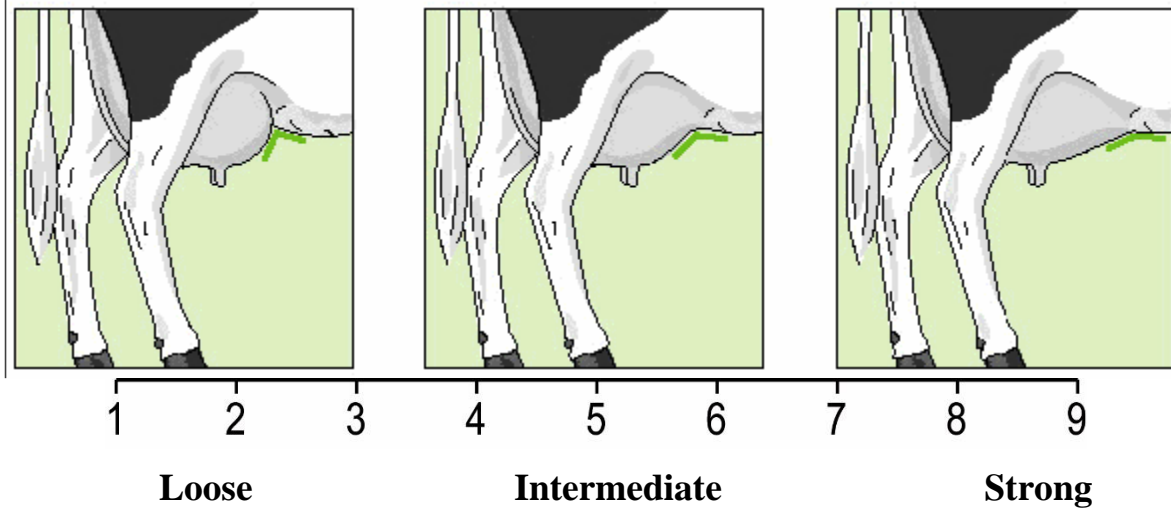
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## Mammary system

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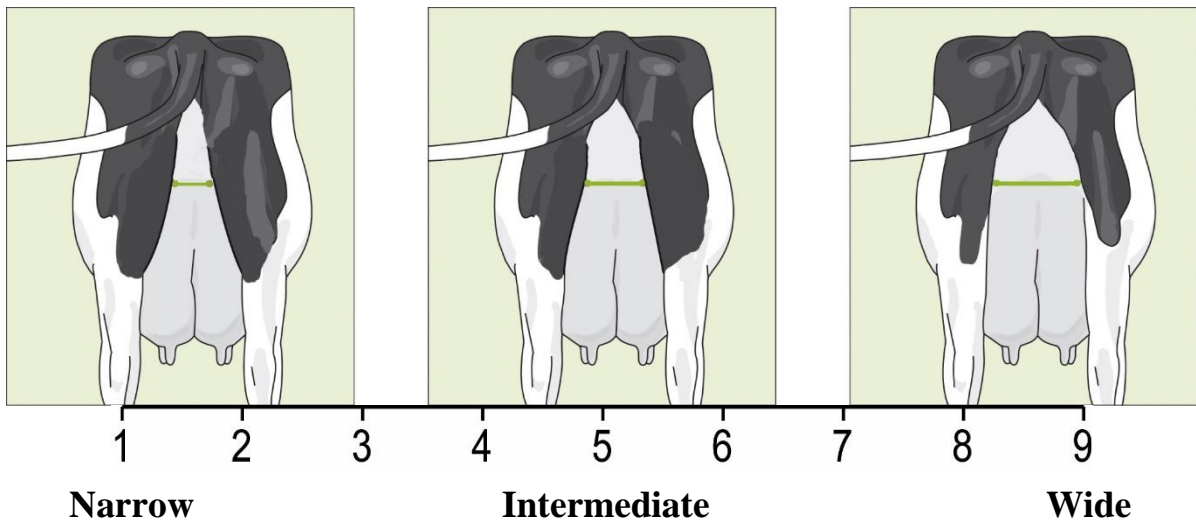
### Fore Udder Attachment



Fore udder attachment describes the strength of attachment of the fore udder to the abdominal wall. A completely even attachment between udder and body and an udder which is attached over the whole width, receive score 9. A loose and narrow attachment between udder and body receives score 1.

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### Rear Udder Width



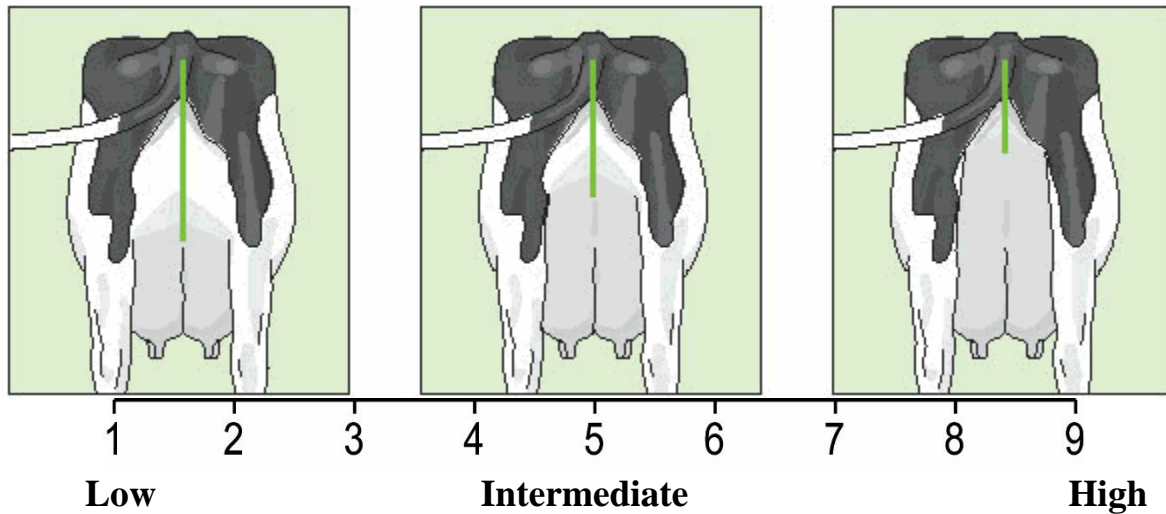
The rear udder width is assessed at the point where the “lines” between the rear udder and the thighs stops. The very wide attached rear udder scores 9, and the very narrow attached rear udder scores 1.

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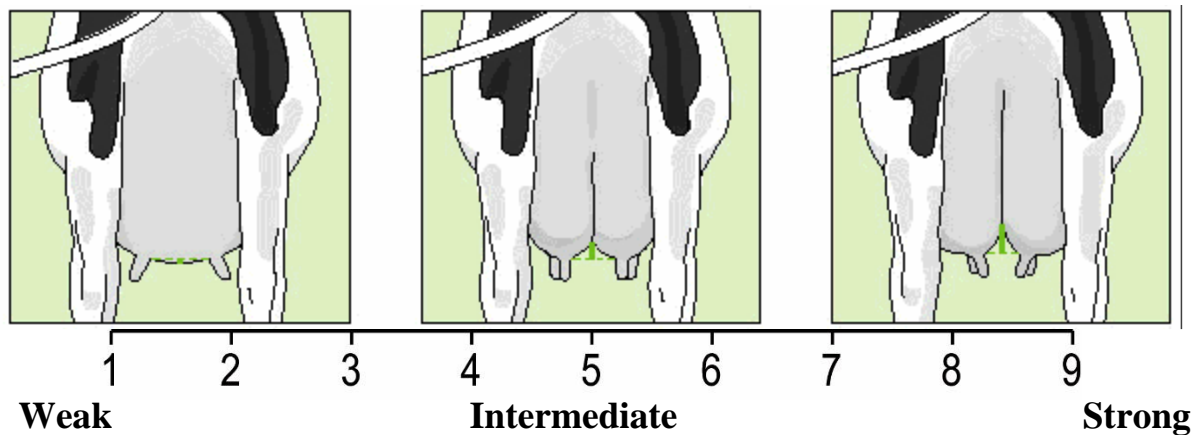
## Rear Udder Height



When classifying the rear udder height, the point of the milk secreting tissue has to be found. This point is assessed in relation to the distance between pins and hocks, in relation to the height of the animal. If the point where milk secreting tissue ends is in the middle, the score 4 is given. If the point is much higher, the score 9 is given, while a very low one receives score 1.

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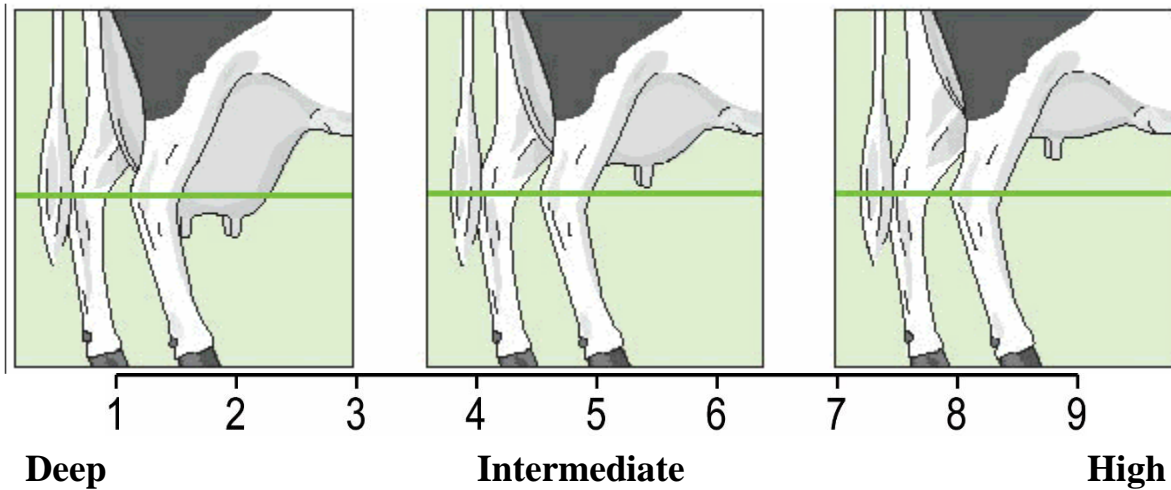
## Udder Support



The depth of the cleft is measured at the base of the rear udder, between rear teats. The ligament forming a clear and very deep cleft between the rear quarters, receives score 9. If the ligament cannot be seen, the ligament is called broken and receives score 1.

- Score 1 = round at the bottom of the rear udder
- Score 2 = flat at the bottom of the rear udder
- Score 3 = cleft of 1 cm between the rear teats.
- Score 5 = cleft of 3 cm between the rear teats
- Score 9 = cleft of 7 cm between the rear teats

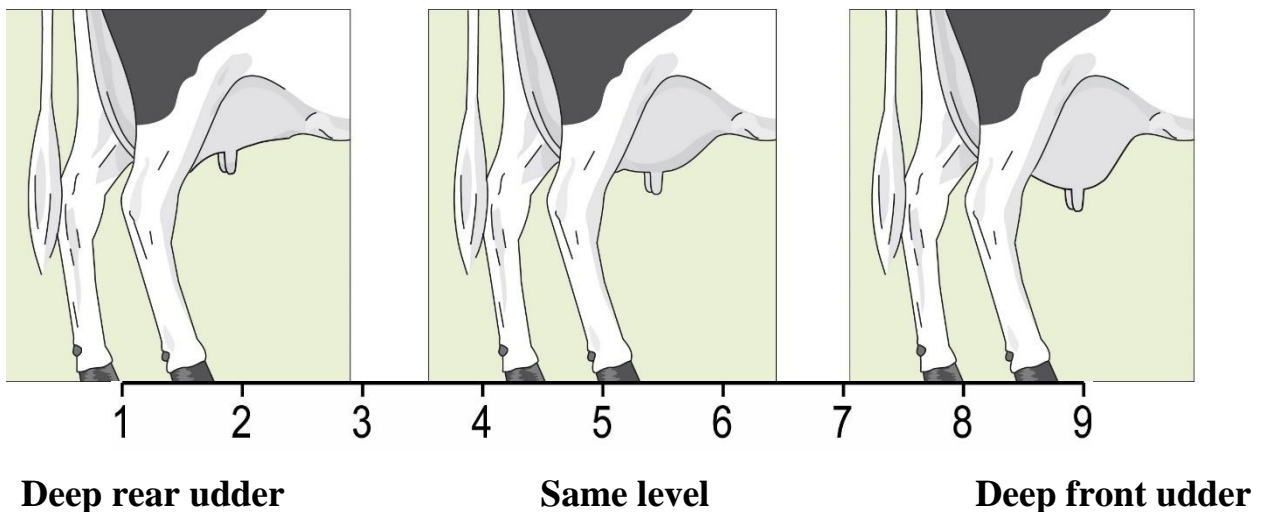
## Udder Depth



Udder depth is measured by comparing the distance between the deepest part of the udder and hock. The scale is 3 cm per point.

- 1 = udder bottom 6 cm below hock level
  - 3 = udder bottom at hock level
  - 5 = udder bottom 6 cm above hock level
  - 9 = udder bottom 18 cm above hock level
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## Udder Balance

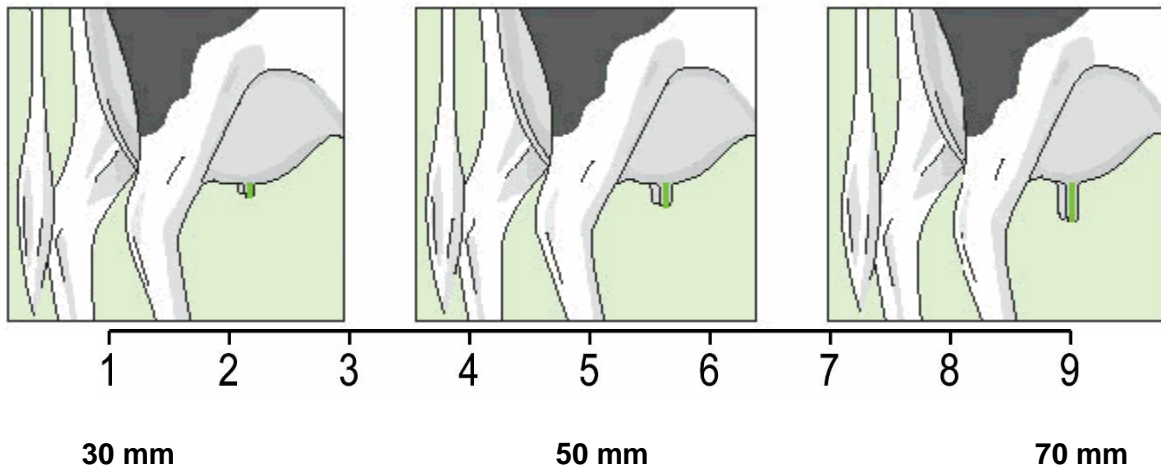


When classifying udder balance the depth of the rear udder is assessed in relation to the depth of the front udder. The trait is assessed from the side where the deepest point of the rear udder is compared with the point where the front teats are located.

- Score 1: rear udder is 6 cm deeper than the front udder
  - Score 3: rear udder is 3 cm deeper than the front udder
  - Score 5: rear and front udder are on the same level
  - Score 7: front udder is 3 cm deeper than the rear udder
  - Score 9: front udder is 6 cm deeper than the rear udder
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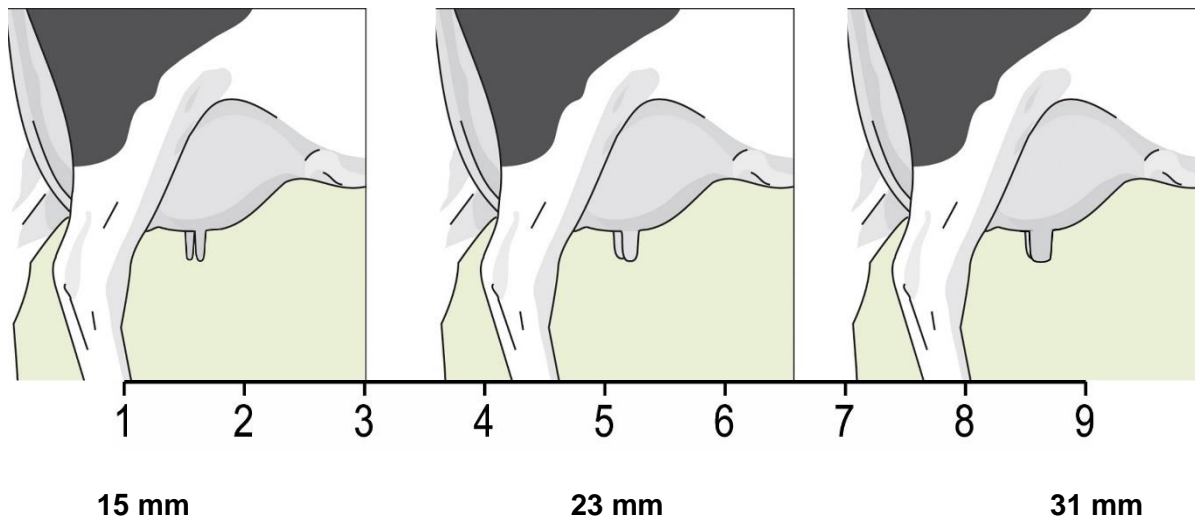
## Teat Length



The distance between the root and the tip of the teat is measured in mm. A teat length of 30 mm or less receives score 1. A teat length of 70 mm or more receives score 9. Score 5 is given when teats are 50 mm long.

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## Teat Thickness

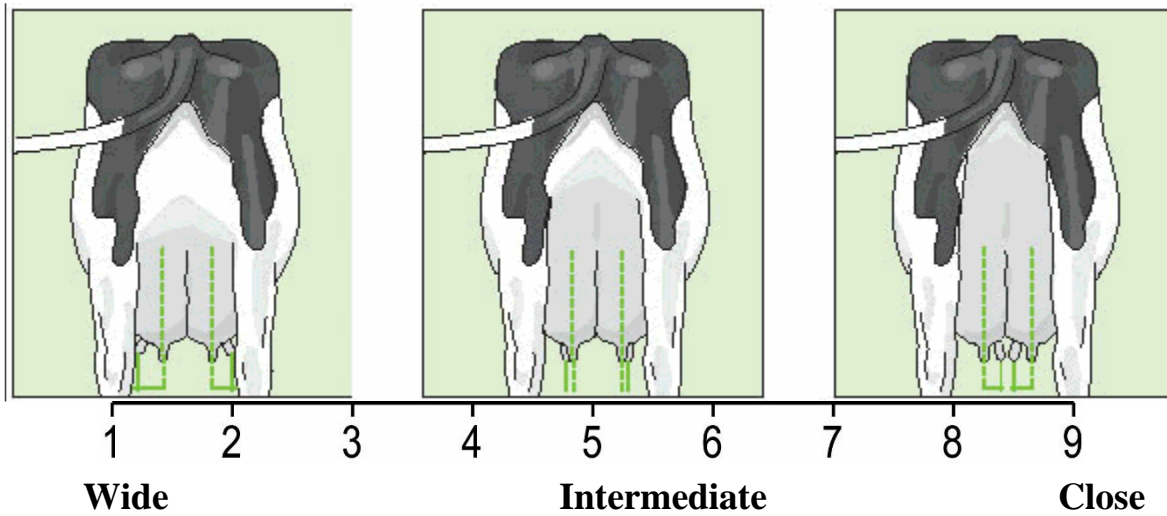


Teat thickness is assessed in the middle of a front teat. A teat thickness of 31 mm or more receives score 9. A teat thickness of 15 mm or less receives score 1. Score 5 is given when teats are 23 mm thick.

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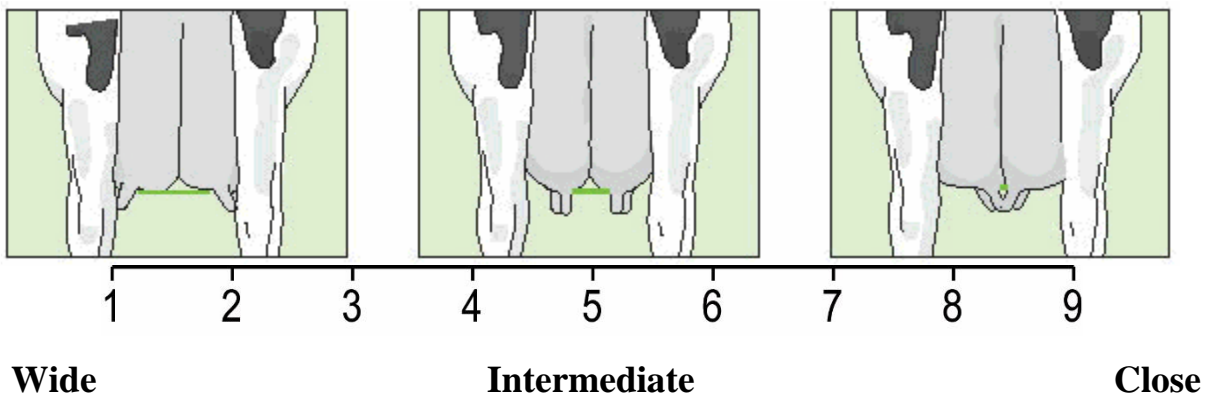
## Front Teat Placement Rear View



The front teat position is assessed by looking from the rear. Front teats which are placed at the inner side of the quarter receive score 9. Front teats placed on the outside of the quarter obtain score 1. Front teats placed in the middle of the quarter receive score 5.

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## Rear Teat Placement Rear View



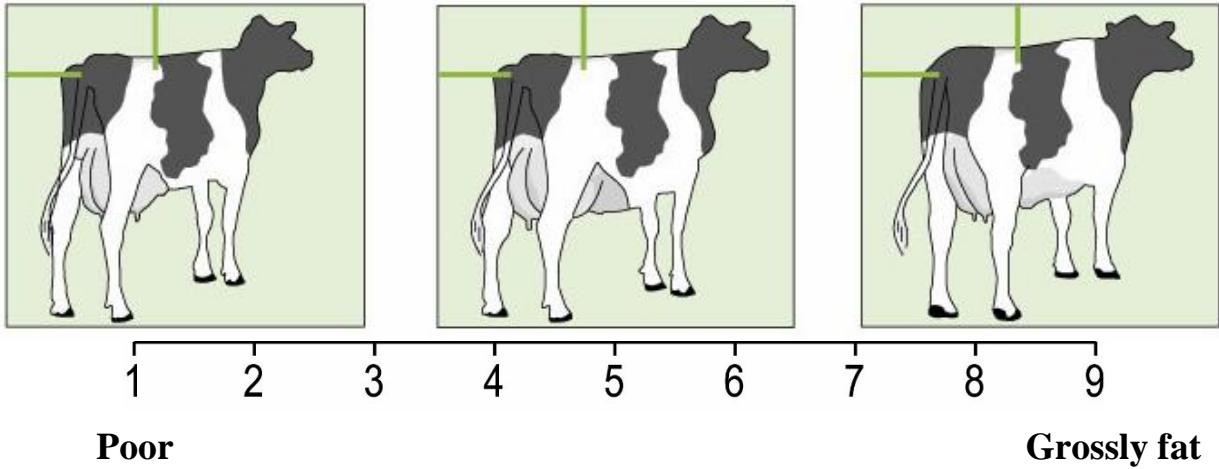
Rear teat position is assessed from the rear. Rear teats which are very close and are placed inside the quarter close to the ligament, obtain score 9. If they are placed in the middle of the quarter, score 4 is given, while rear teats placed far and on the outside of the quarter, receive score 1.

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## Body Condition Score

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The covering of fat over the tail head & rump

If the triangle between pin, thurl and hips, seen from the side, is sharp and formed as a "V" the score is 1-4. If the triangle is rounded by the covering fat, and formed as a "U" the score is 6-9. If the triangle is formed neither as a "V" nor as a "U" the score is 5

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