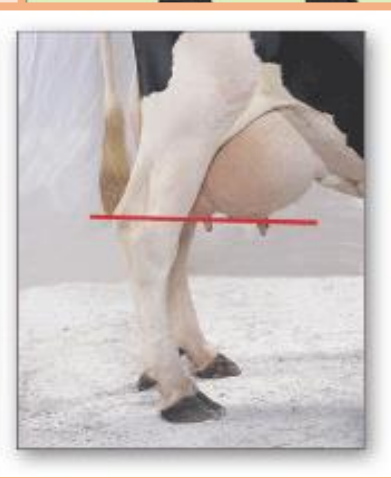
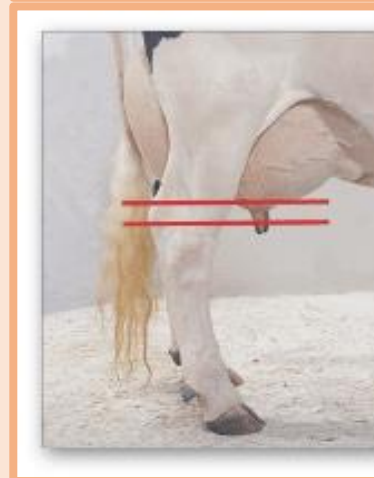
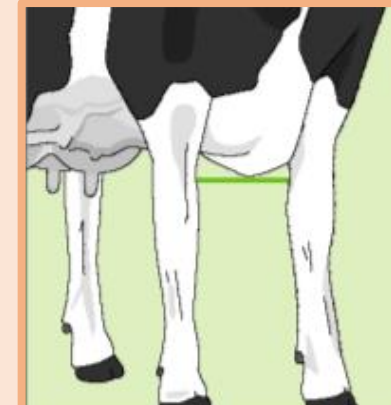
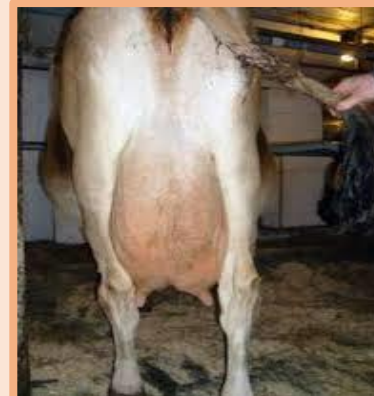


CONFORMATION, TYPE CLASSIFICATION AND JUDGING (Level 3)

| Topic | Training & information Content |
|-------|--|
| 5.1 | Dairy Cattle Breeds and Breeding |
| 5.2 | Breeding program for a dairy farm (medium & large) |
| 5.3 | Conformation, Type classification and judging |
| 5.4 | Cow handling |
| 5.5 | Milk production recording |
| 5.6 | Heat Detection |
| 5.7 | Artificial Insemination |
| 5.8 | Pregnancy Diagnosis |
| 5.9 | Fertility Management |
| 5.10 | Cows with abnormal discharge |
| 5.11 | Fertility disease recording |
| 5.12 | Calving recording |
| 5.13 | Use of Key Performance Indicators |



1. You will learn about (learning objectives):

- Importance of body parts of a cow in judging cattle
- Key body parts to evaluate when judging cattle and how to score them
- Type classification report



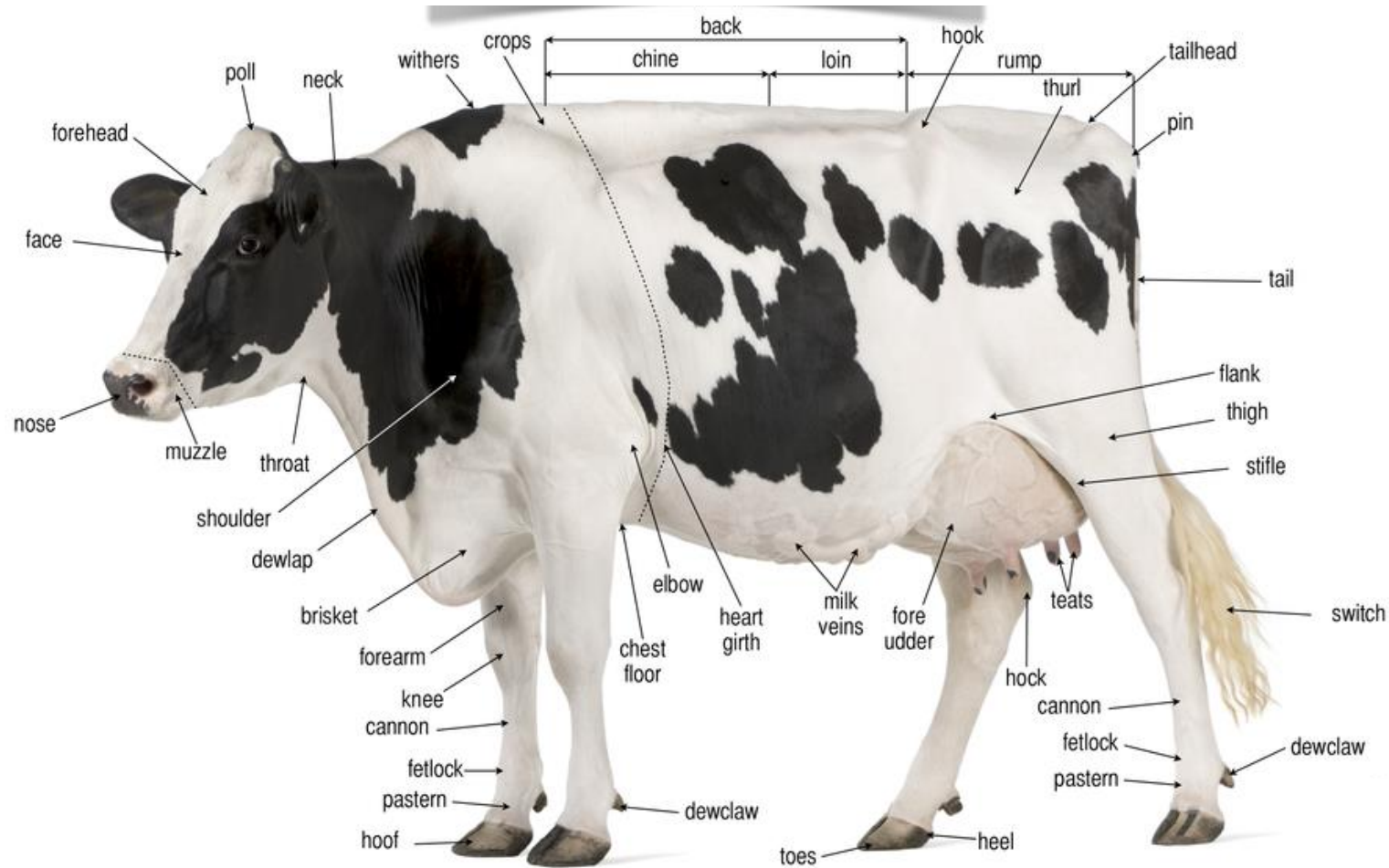
2. Background

- The exterior look (conformation) of the cow is for many farmers, not the most important part to emphasize when it comes to cattle judging.
- Cattle judging is important in influencing decision making e.g. during selection. Judging entails evaluating and ranking/scoring cattle based on their closeness to 'ideal' dairy conformation.
- Of course, breeding values are much more reliable, but in case breeding values are not available more emphasis should be given to linear traits of the cow and bull.



3. Parts of a dairy cow

- Familiarizing with (thorough knowledge of) the body parts of a cow is a key step in successful cattle judging.



4. Classification of body parts

- The judging exercise can be broken down into major classes that entail specific body parts to be evaluated and ranked/scored namely;

Udder. = Tilted, Nice texture, Slightly deep

Fertility. = Steep rump angle, strong loin.

Capacity. = Wide and Deep, low stature.

Feet & **L**egs. = Straight and coarse

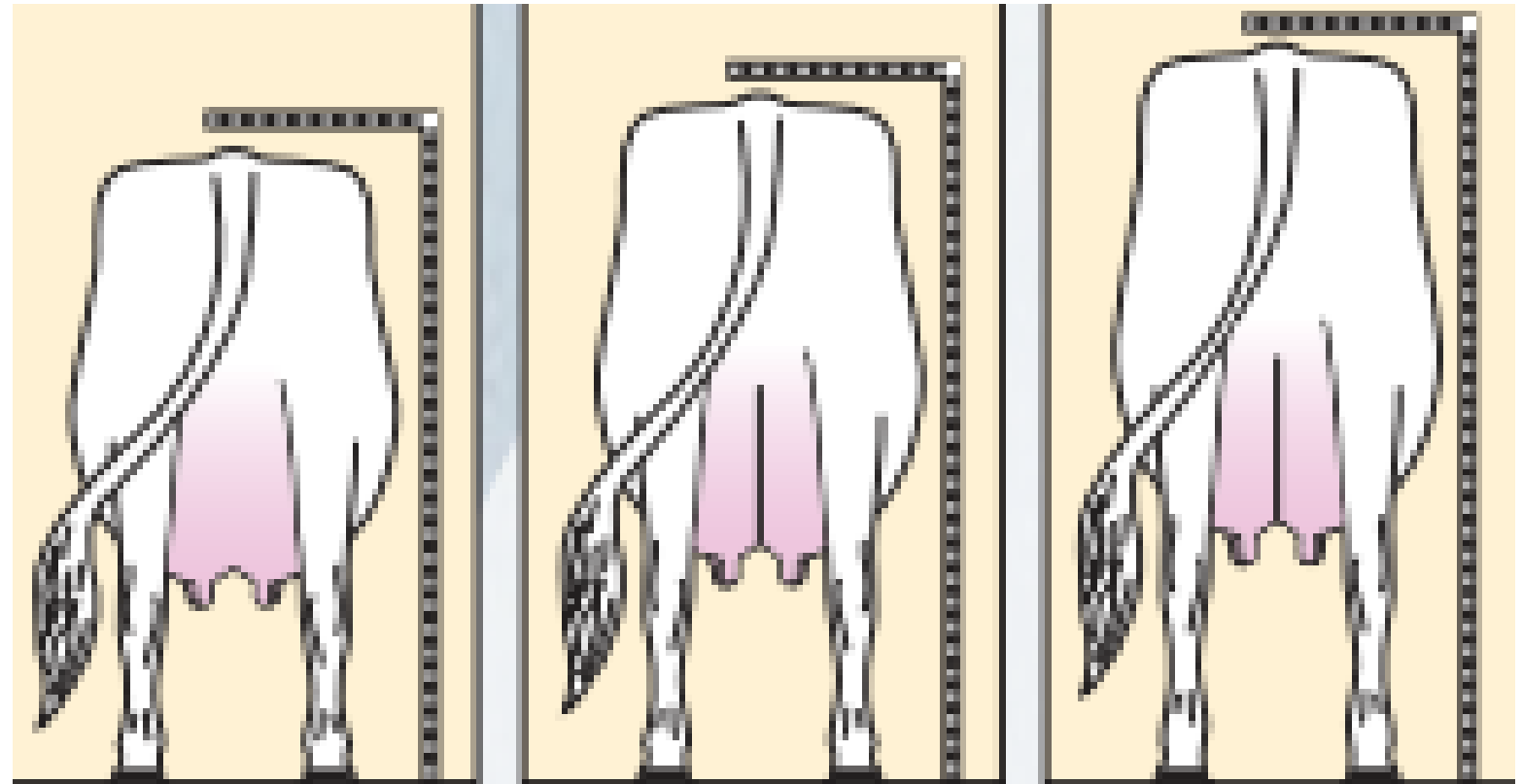


5. Body frame

- It is important to have an impression of the body of the cow. This is done by assessing the [Rump height](#).
- Rump height is:
 - Variable per breed.
 - Variable within breed.

00

Scores (1, 5 and 9)



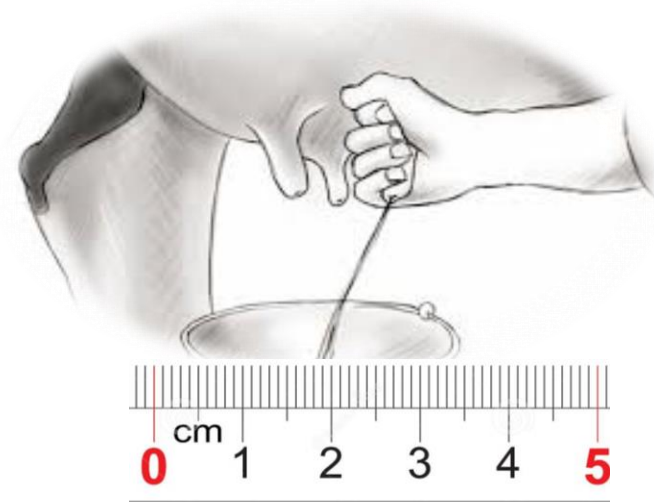
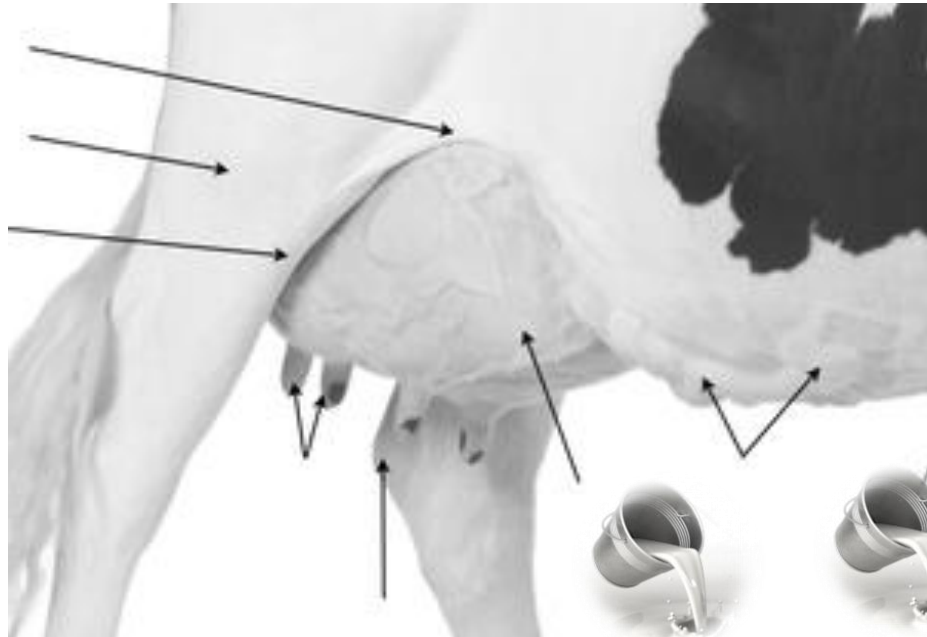
1; **Short.**

5; **Intermediate.**

9; **Tall.**

6. Udder

- Major consideration is given to the traits that contribute to high milk yield and a long productive life.



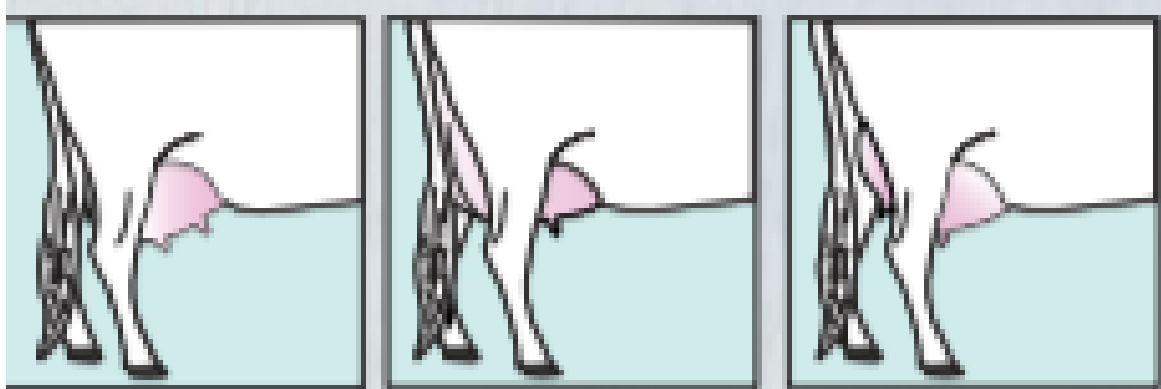
(Fore) udder should be firmly attached with moderate length and ample capacity

Udder



6.1 Udder cont'd: Floor and depth

1



1; **Tilt.**

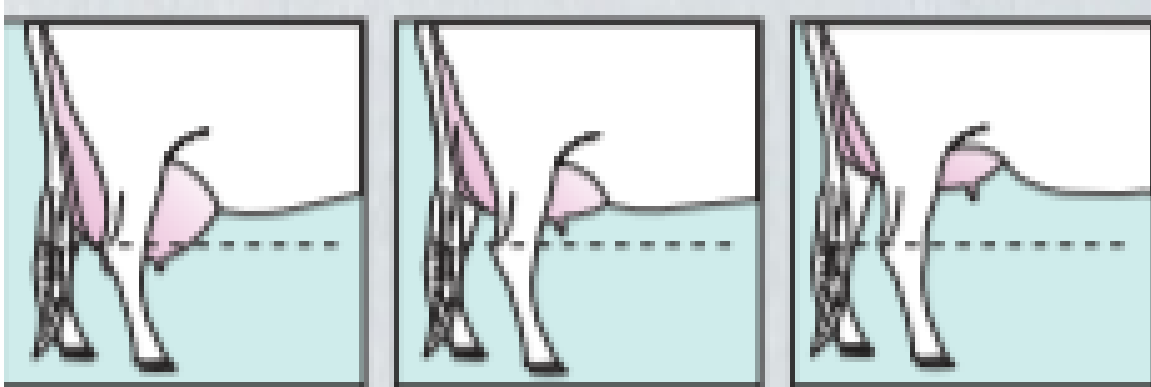
5; **Intermediate.**

9; **Reverse Tilt**

Udder Floor.

- The balance in the udder is your assessment criteria.
- Score 9 is desired in first calvers.
- Low score usually has much more milk in the rear quarters.

2



1; **Deep.**

5; **Intermediate.**

9; **Shallow.**

Udder Depth.

- Draw a horizontal line from the centre of the hock.
- Judge according to age.
- 1st and 2nd lactation should be above score 5.

6.2 Udder cont'd: Suspensory ligament and Udder attachment

3



1; **Weak.**

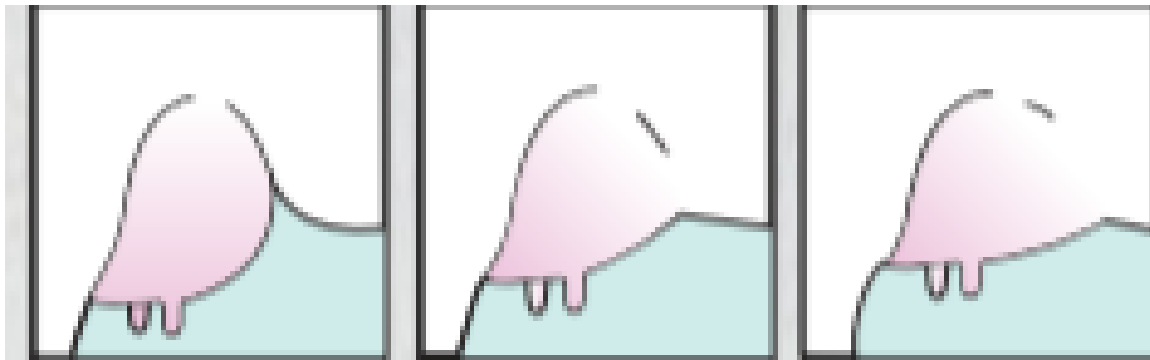
5; **Intermediate.**

9; **Strong.**

Median Suspensory Ligament.

- Is the depth of the cleft in the rear and fore udder.
- Has a big influence on cow's longevity.

4



1; **Weak**

5; **Intermediate.**

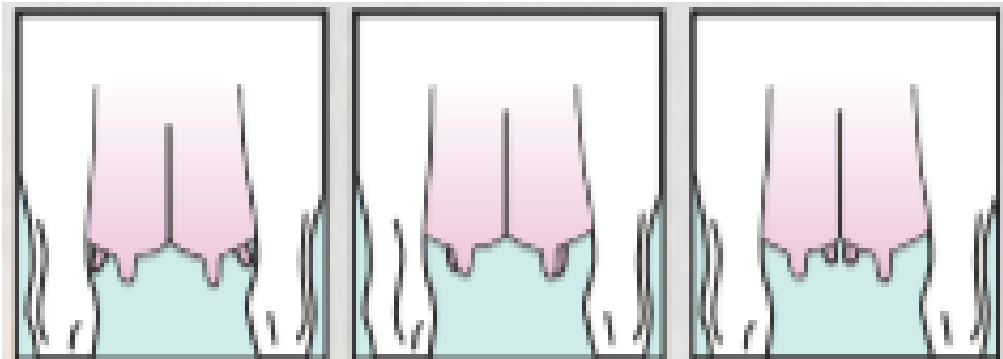
9; **Strong**

Fore Udder Attachment.

- The attachment to the abdominal wall, angle between udder and trunk $> 145^\circ$.
- Low scores means very sensitive for mastitis.

6.3: Udder cont'd: Front and rear teats placement

5



1; **Wide**

5; **Centre.**

9; **Close**

Front Teat Placement.

- Is the teat placement from centre of quarter.
- This is one of the most important reasons for culling, especially in case of machine milking.

6



1; **Wide**

5; **Centre.**

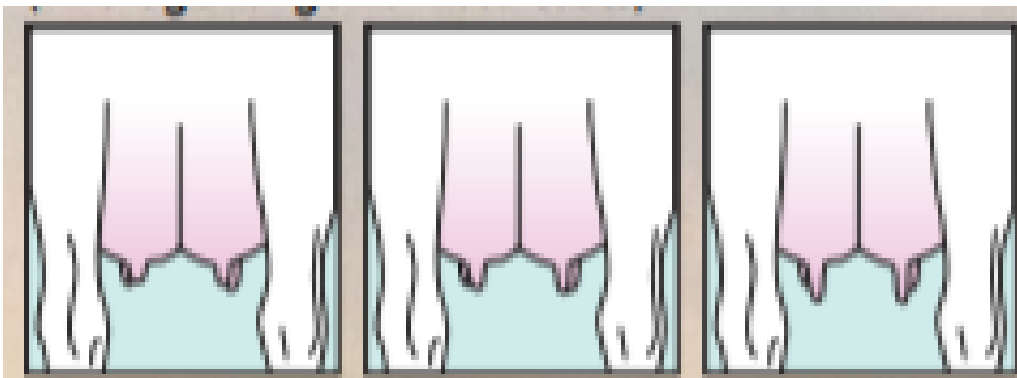
9; **Close**

Rear Teat Placement.

- Is the teat placement from centre of quarter.
- Close placement means very uncomfortable for any type of milking system.

6.4 Udder cont'd: Teat length and Udder texture

7

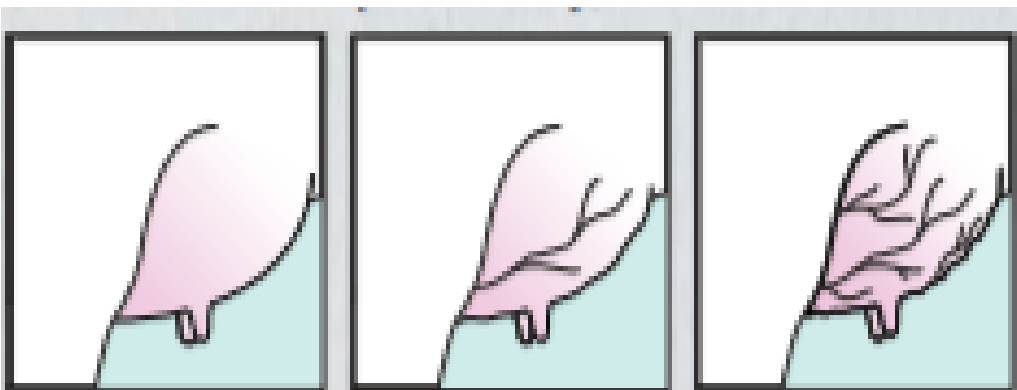


1; **Short.**

5; **Intermediate.**

9; **Long.**

8



1; **Fleshy.**

5; **Intermediate.**

9; **Soft**

Teat Length.

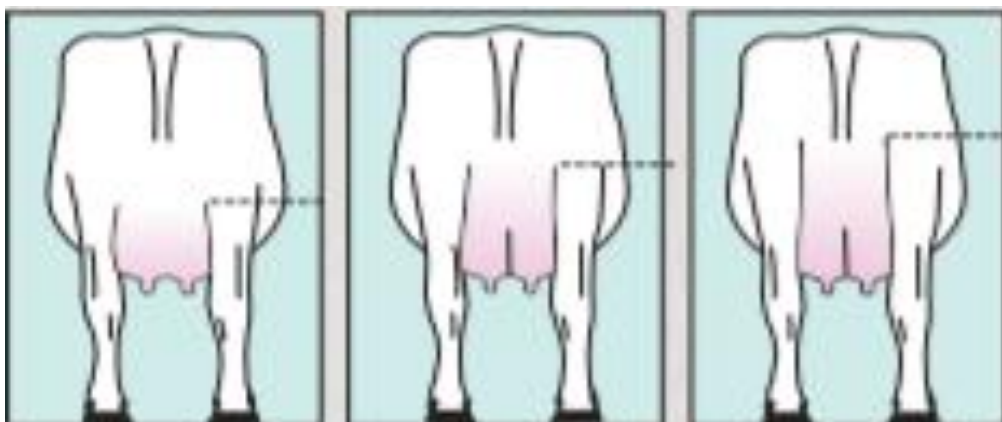
- Measure length in centimetres (cm's).
 - Intermediate = 4,5- 5cm's
 - Score 9 = ≥9cm's
 - Score 1 = < 1.5 cm's.

Udder Texture.

- The softness and expandability of the udder tissue in combination with visible veins.

6.5 Udder cont'd: Rear udder height and width

9



1; Low

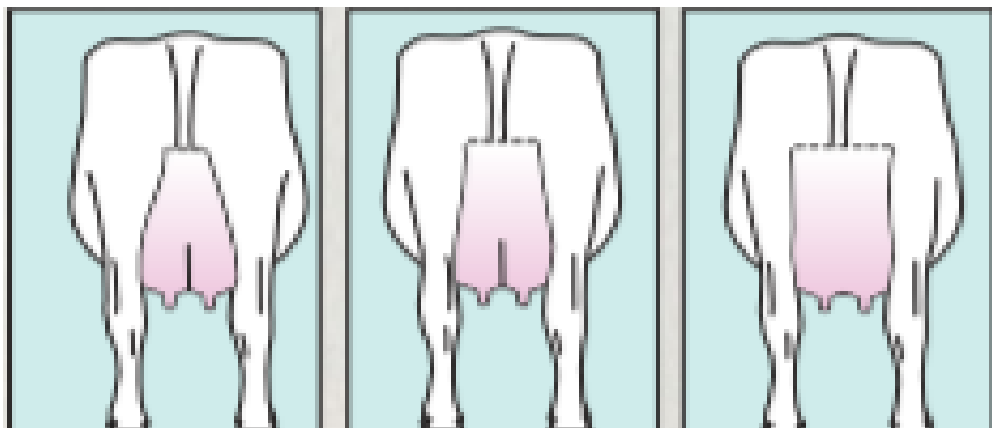
5; Intermediate.

9; High

Rear Udder Hight.

- Is the distance from the milk secreting tissue to the vulva/centre hock.
- Has positive correlation with udder balance.

10



1; Narrow

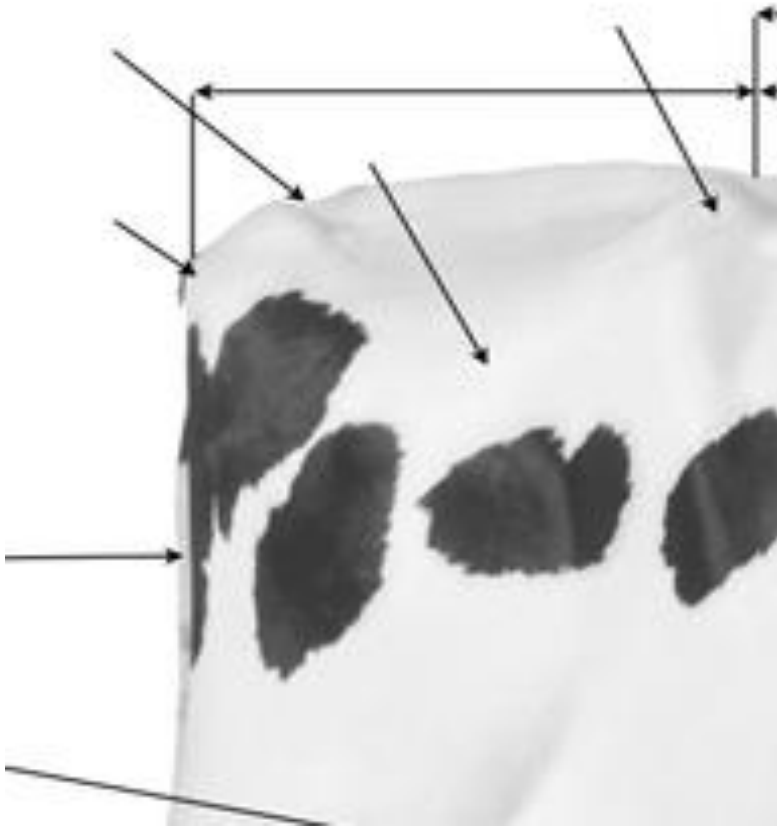
5; Intermediate.

9; Wide.

Rear Udder Width.

- Is the width at milk secreting tissue
- Must be the same as udder bottom width.

7. Fertility



Assessing
Thurl
placement



Assessing
Rump angle

Fertility relates to
calving with ease
and having
annual calving



Fertility

7.1 Fertility cont'd: Thurl placement and Rump angle

11



1; Back.

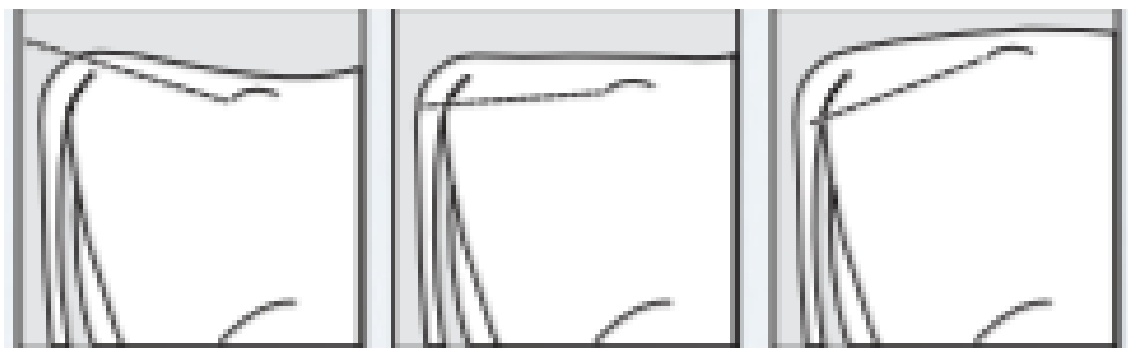
5; Intermediate.

9; Ahead

Thurl Placement.

- Is the horizontal position of thurl between hip (65%) and pin bones (35%).
- Score 1 causes straight rear leg set and high pins.

12



1; High.

5; Intermediate.

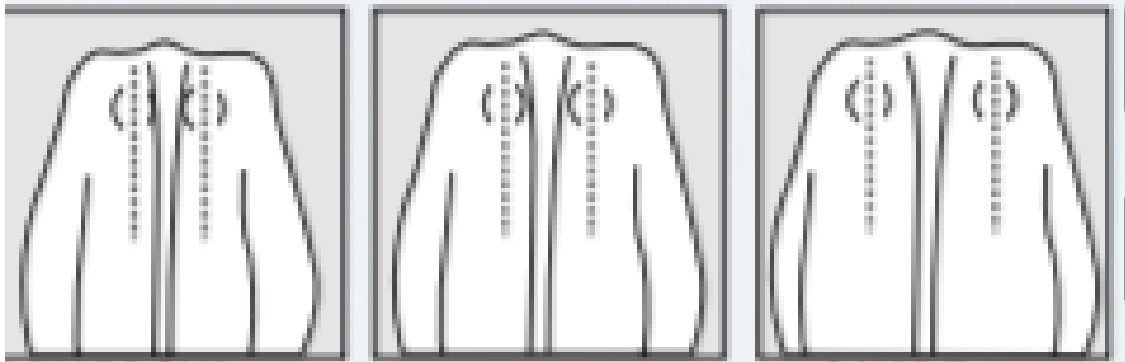
9; Low

Rump Angle.

- Is the height of pin bones relative to height of hip bones.
- Score 5 means pin bone is approximately 4 cm's lower than the hip bone.

7.2 Fertility cont'd: Rump width and Loin strength

13



1; **Narrow.**

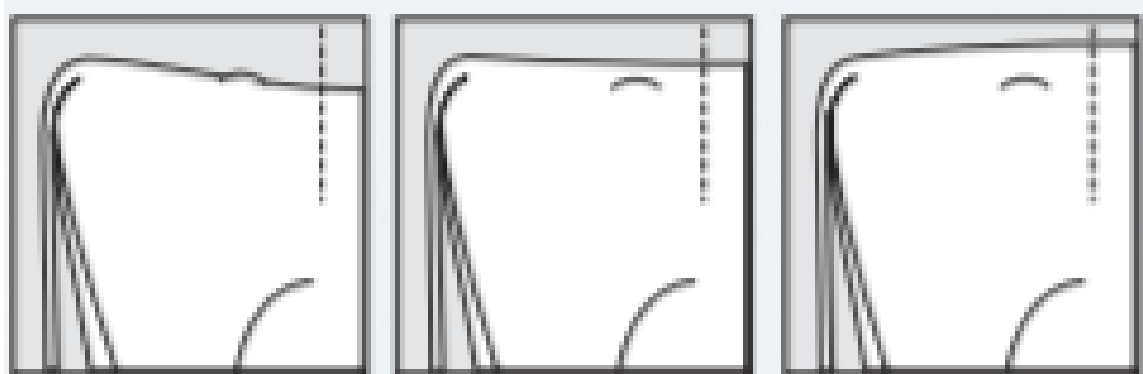
5; **Intermediate.**

9; **Wide.**

Rump Width.

- Is the distance between the two pin bones.
- Two tails between the pin bones means intermediate.

14



1; **Weak.**

5; **Intermediate.**

9; **Strong.**

Loin Strength.

- Refers to the strength of the vertebrae between rump and back.

8. Capacity



Body depth relates with enough capacity to consume roughages

Capacity

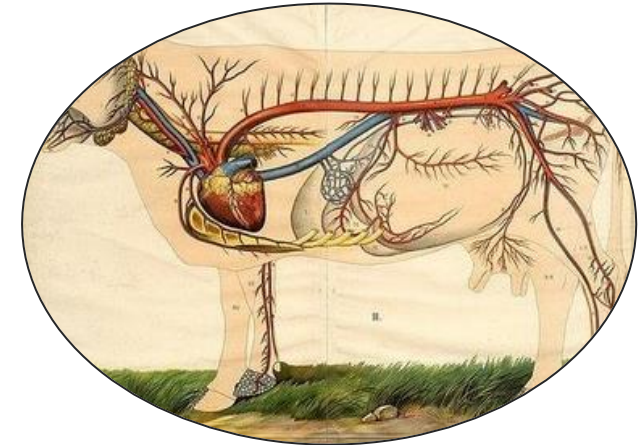


1 litre milk

=



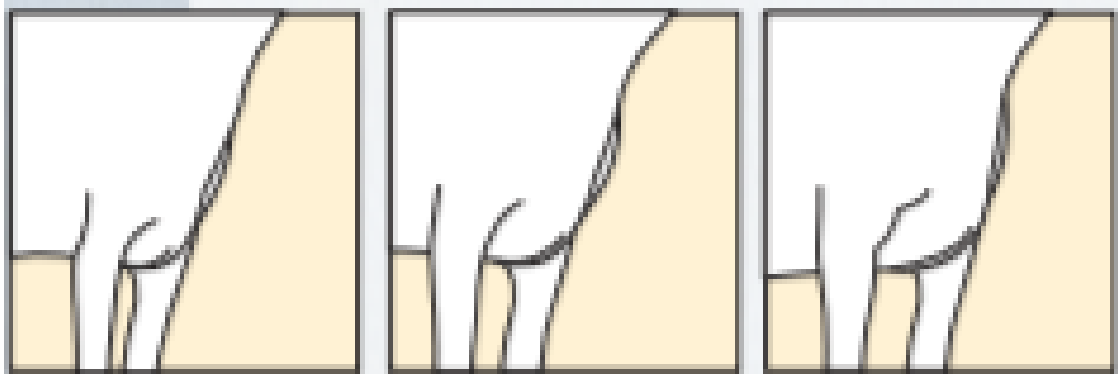
400 litre blood circulation



Chest width relates to enough space for heart and lungs

8.1 Capacity cont'd: Chest width and body depth

15



1; **Narrow.**

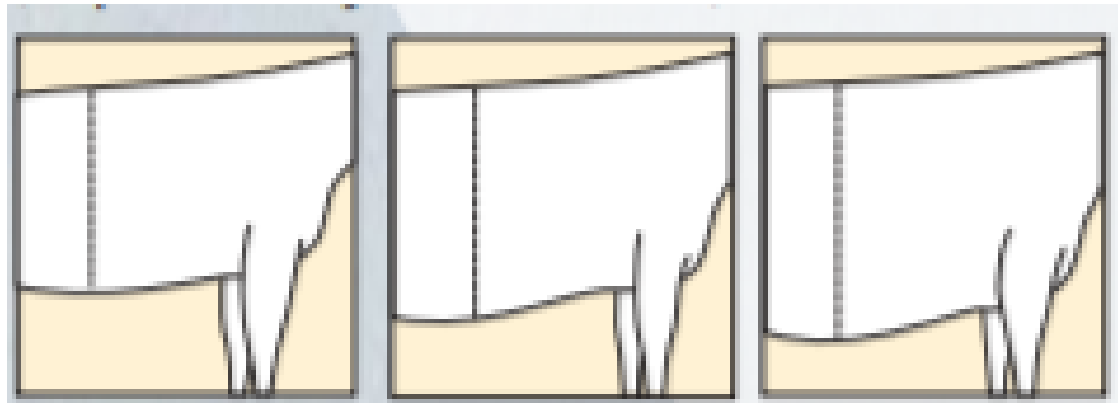
5; **Intermediate.**

9; **Wide.**

Chest Width

- Refers to the width of the chest floor.
- It relates to enough space for heart and lungs.
- Narrow chest means low body depth.

16



1; **Shallow.**

5; **Intermediate.**

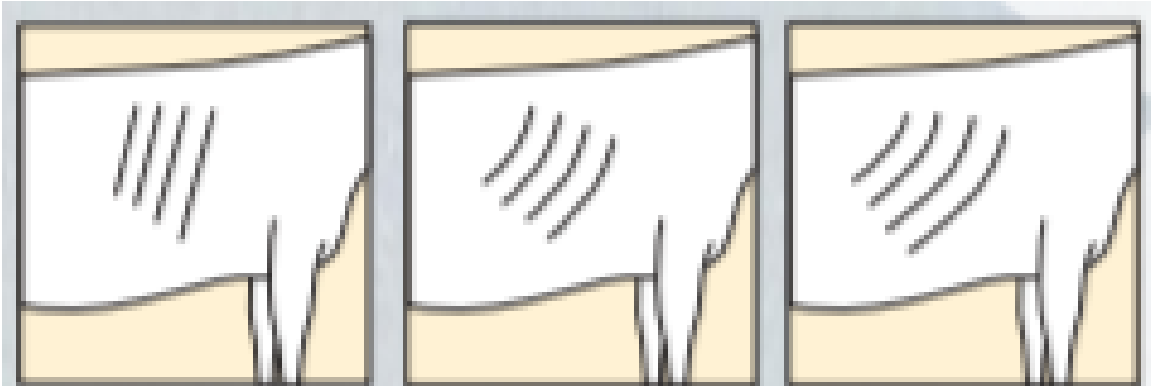
9; **Deep.**

Body Depth.

- Refers to the depth of body at rear rib.
- It relates to enough capacity to consume roughages.

8.2 Capacity cont'd: Angularity and Body Condition Score

17



1; **Non Angular.** 5; **Intermediate.** 9; **Angular.**

Angularity.

- Is the angle and openness of ribs.
- External sign of willingness to produce.

18



1; **Low.** 5; **Intermediate.** 9; **High.**

Body Condition Score.

- Indicates the amount of fat deposition in the tailhead loin and pelvic region.
- In case of management scores
 - 1 means 1.00
 - 5 means 2.75
 - 9 means 5.00

9. Legs and feet



Foot angle and heel depth are evaluated



Locomotion is also given consideration

Legs & **F**eet

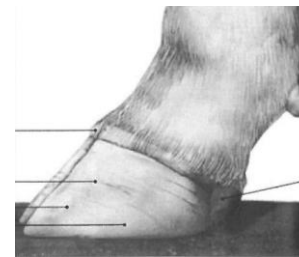
Degree of curvature is considered for Rear Leg Set side view



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0-

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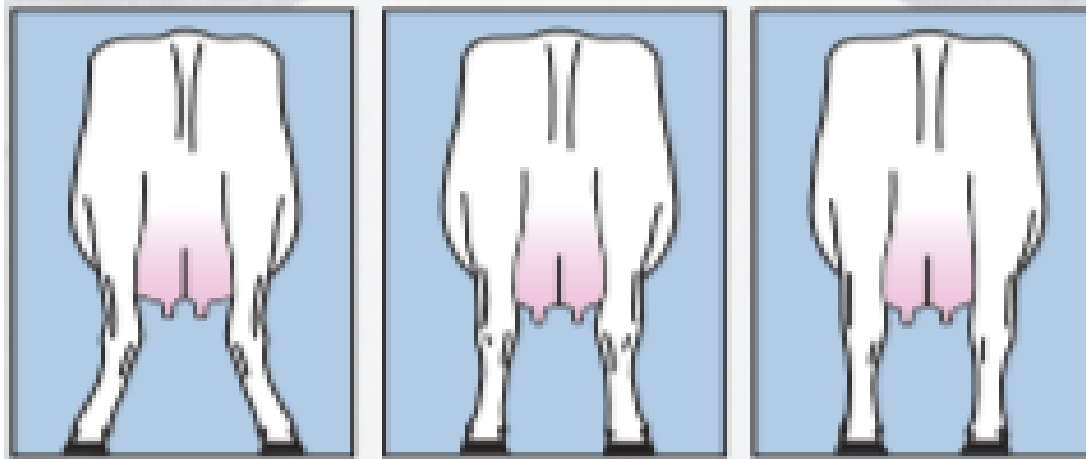
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Desired trait eases locomotion, equals walking in comfortable pair of shoes

9.1 Legs and feet cont'd: Rear leg set view

19



1; **Hocked inn.**

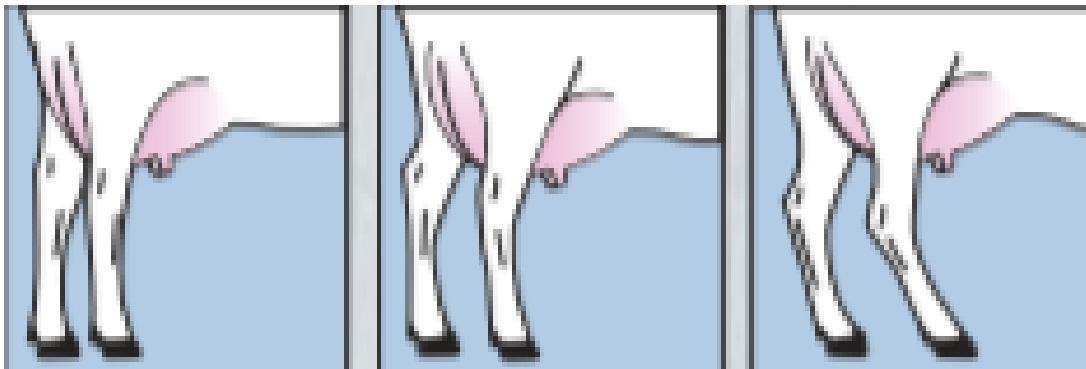
5; **Intermediate.**

9; **Straight.**

Rear Leg Set Hind View.

- Refers to the turn from hock when viewed from the rear.
- Low scores are usually caused by hoof health issues.

20



1; **Straight.**

5; **Intermediate.**

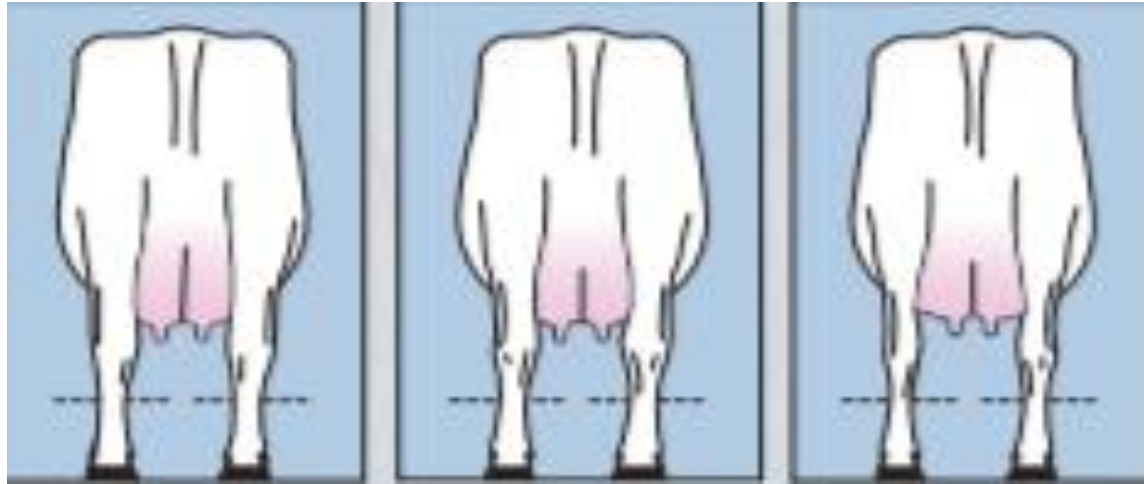
9; **Sickled.**

Rear Leg Set Side View.

- Is the degree of curvature of the rear leg
- Score 1 may cause severe leg problems

9.2 Legs and feet cont'd: Bone quality and locomotion

21

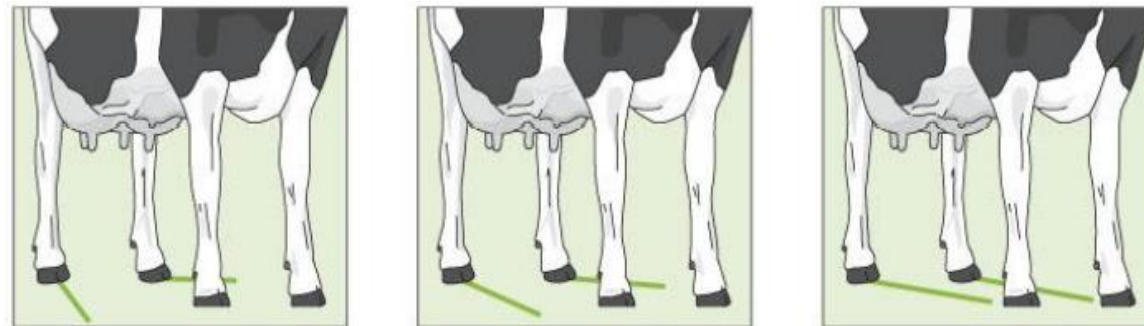


1; Coarse.

5; Intermediate.

9; Flat.

22



1; Severe abduction short stride.

5; Intermediate.

9; No abduction long stride.

Bone Quality.

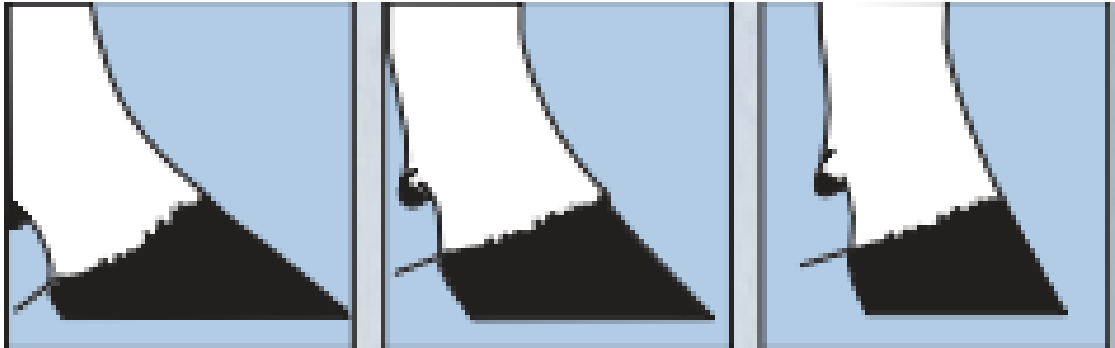
- Refers to the flatness of the bones especially in the hock (joint) area.
- Coarseness causes joint infections, especially when cows are kept inside (not free grazing).

Locomotion.

- Refers to the way of walking.
- Any deviation affects locomotion.
- Abnormal locomotion requires hoof trimming.

9.3 Legs and feet cont'd: Foot angle and heel depth

23



1; **Low.**

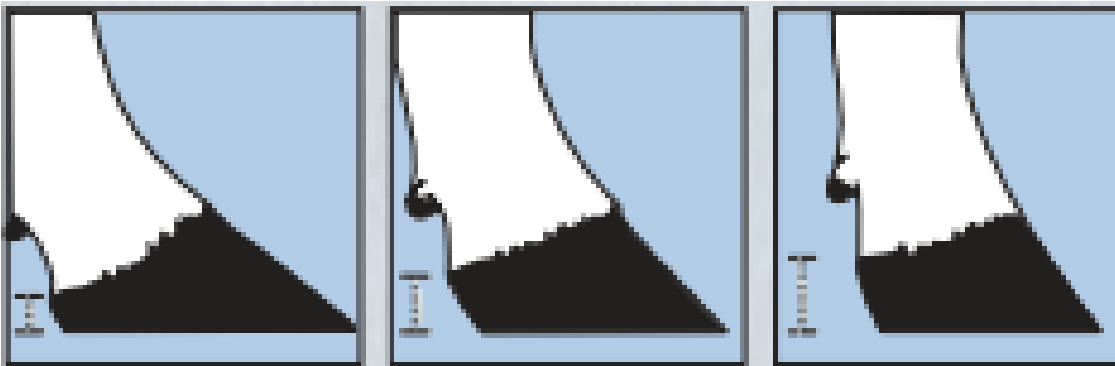
5; **Intermediate**

9; **Steep.**

Foot Angle.

- Refers to the angle of hairline in the (outer) hind hooves.
- Score 5 is desirable for correct weight distribution.

24



1; **Shallow.**

5; **Intermediate.**

9; **Steep.**

Heel Depth.

- Refers to the depth of heel on (outer) hind claw.

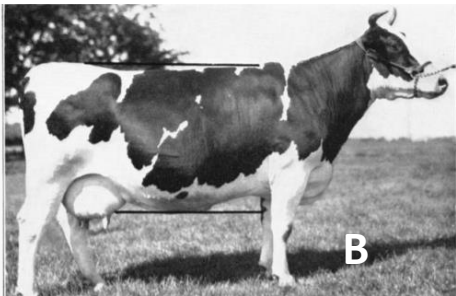
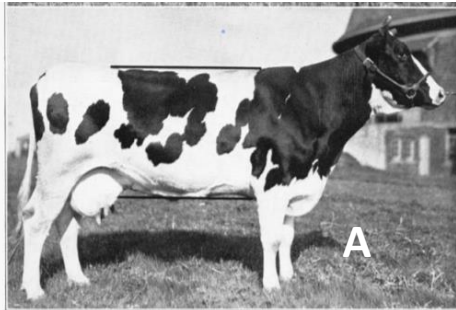
10. Type Classification Report (TCR)

- Is the information is recorded, and when all animals are assessed at the same time (age and lactation stages). The animals can also be easily compared.
- The results/data can be used for;
 1. Bull Selection.
 2. Genetic Evaluation (herd book association)
 3. Comparing cows within the herd.
 4. Visualize improvement of livestock.

| Nu. | Trait | Description | | score cow.... | score cow..... | score cow.... | score cow..... |
|-----|-----------------------|----------------|-----------------|------------------|-------------------|------------------|-------------------|
| 0 | STATURE | HEIGHT IN CM | | | | | |
| 1 | UDDER FLOOR | TILT (1) | REVERSE TILT(9) | | | | |
| 2 | UDDER DEPT | DEEP (1) | SHALLOW(9) | | | | |
| 4 | FORE UDDER ATTACHMENT | LOOSE(1) | STRONG (9) | | | | |
| 5 | FRONT TEAT PLACEMENT | WIDE (1) | CLOSE (9) | | | | |
| 6 | REAR TEAT PLACEMENT | WIDE (1) | NARROW (9) | | | | |
| 7 | TEAT LENGTH | SHORT(1) | LONG (9) | | | | |
| 8 | UDDER TEXTURE | FLESHY(1) | SOFT(9) | | | | |
| 9 | REAR UDDER HEIGHT | LOW(1) | HIGH (9) | | | | |
| 10 | REAR UDDER WIDTH | NARROW (1) | WIDE (9) | | | | |
| 11 | THURL PLACEMENT | BACK (1) | AHEAD (9) | | | | |
| 12 | RUMP ANGLE | HIGH PINS(1) | SLOPED (9) | | | | |
| 13 | RUMP WIDTH | NARROW(1) | WIDE (9) | | | | |
| 14 | LOIN STRENGTH | WEAK (1) | STRONG (9) | | | | |
| 15 | CHEST WIDTH | NARROW(1) | WIDE (9) | | | | |
| 16 | BODY DEPTH | SHALLOW(1) | DEEP (9) | | | | |
| 17 | ANGULARITY | COARSE(1) | OPEN (9) | | | | |
| 18 | BODY CONDITION SCORE | POOR (1) | AMPLE (9) | | | | |
| 19 | REAR LEGS REAR VIEW | HOCKED_INN (1) | STRAIGHT(9) | | | | |
| 20 | REAR LEG SET | STRAIGHT(1) | SICKLED (9) | | | | |
| 21 | BONE QUALITY | COARSE (1) | FLAT(9) | | | | |
| 22 | LOCOMOTION | POOR (1). | STRONG (9) | | | | |
| 23 | FOOT ANGLE | LOW(1) | STEEP (9) | | | | |
| 24 | HEEL DEPTH | SHALLOW(1) | STEEP(9) | | | | |

10.1 Example of a TCR

Remember: A reliable judging cannot take place from pictures.



| Nu. | Trait | Linear trait Description | | score | score | score | score |
|-----|-----------------------|--------------------------|-----------------|----------|-----------|----------|----------|
| | | | | cow....A | cow.....B | cow....C | cow..... |
| 0 | STATURE | HEIGHT IN CM | | 138 | 141 | 133 | |
| 1 | UDDER FLOOR | TILT (1) | REVERSE TILT(9) | 1 | 2 | 4 | |
| 2 | UDDER DEPT | DEEP (1) | SHALLOW(9) | 4 | 4 | 2 | |
| 4 | FORE UDDER ATTACHMENT | LOOSE(1) | STRONG (9) | 1 | 2 | 2 | |
| 5 | FRONT TEAT PLACEMENT | WIDE (1) | CLOSE (9) | 1 | 1 | 3 | |
| 6 | REAR TEAT PLACEMENT | WIDE (1) | NARROW (9) | 4 | 4 | 3 | |
| 7 | TEAT LENGTH | SHORT(1) | LONG (9) | 5 | 4 | 5 | |
| 8 | UDDER TEXTURE | FLESHY(1) | SOFT(9) | 3 | 2 | 2 | |
| 9 | REAR UDDER HEIGHT | LOW(1) | HIGH (9) | | | | |
| 10 | REAR UDDER WIDTH | NARROW (1) | WIDE (9) | | | | |
| 11 | THURL PLACEMENT | BACK (1) | AHEAD (9) | 3 | 4 | 4 | |
| 12 | RUMP ANGLE | HIGH PINS(1) | SLOPED (9) | 5 | 7 | 4 | |
| 13 | RUMP WIDTH | NARROW(1) | WIDE (9) | | | | |
| 14 | LOIN STRENGTH | WEAK (1) | STRONG (9) | 2 | 4 | 6 | |
| 15 | CHEST WIDTH | NARROW(1) | WIDE (9) | 4 | 8 | 9 | |
| 16 | BODY DEPTH | SHALLOW(1) | DEEP (9) | 2 | 8 | 9 | |
| 17 | ANGULARITY | COARSE(1) | OPEN (9) | 3 | 5 | 1 | |
| 18 | BODY CONDITION SCORE | POOR (1) | HIGH (9) | 5 | 7 | 8 | |
| 19 | REAR LEGS REAR VIEW | HOCKED_INN (1) | STRAIGHT(9) | | | | |
| 20 | REAR LEG SET | STRAIGHT(1) | SICKLED (9) | 3 | 2 | 2 | |
| 21 | BONE QUALITY | COARSE (1) | FLAT(9) | 5 | 3 | 1 | |
| 22 | LOCOMOTION | POOR (1). | STRONG (9) | | | | |
| 23 | FOOT ANGLE | LOW(1) | STEEP (9) | | | | |
| 24 | HEEL DEPTH | SHALLOW(1) | STEEP(9) | | | | |

10.2 Type classification cont'd...

- Type classification programmes also include phenotype assessment. These are described as general characteristics or combined traits, which are not linear in a biological sense. i.e.,
 - a. A subjective score is given for the desirability of the cow according to the breeding goal
 - b. Female animals are inspected, classified and assigned grades/scores ranging from 50-97 points.



10.3 Type classification cont'd...

- c. The most common scale for mature cows (second or more lactations) are:
- Excellent: 90 - 97 points
 - Very Good: 85 - 89
 - Good Plus: 80 - 84
 - Good: 79 - 75
 - Fair/Poor/Insufficient: 50 - 74
- d. The awarding of classification grades varies in each country depending upon the breeding goals, and therefore classification scores must be considered in the context of the country of inspection.



10.4 Type classification cont'd...

- e. The final class and score are derived from a breakdown of the main functional areas of the female:
 1. Frame including Rump.
 2. Dairy Strength.
 3. Mammary System.
 4. Legs/Feet.

- f. The weighting of the component breakdown scores should meet the breeding goals in the Country of inspection. It is recommended that for first lactating cows, the range of scores used is 70 - 90 points. The average score is always in the middle of the maximum and minimum a first lactating cow can be awarded.

