Judging Dairy Cattle

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Introduction

Judging dairy cattle is a comparative evaluation of cattle in which animals are ranked based on their closeness to "ideal" dairy conformation. Desirable dairy conformation involves functional traits associated with high milk production over a long, troublefree productive life. Inaddition to learning how to judge cattle, many life skills are gained through the dairy judging experience. These include observation, decision-making, and public speaking skills.

In order to judge dairy cattle, you must begin with the fundamentals. Learning the parts of a cow, ideal dairy conformation, and how to describe differences between animals will provide you with the necessary tools to place classes. This fact sheet is intended to provide you with those fundamentals. Inaddition, good judges of dairy cattle need a definite mental image of the ideal animal for the breed being judged. This image can be developed by observing cattle at shows, visiting outstanding herds, studying breed journals, and observing personally-owned dairy cattle closely.
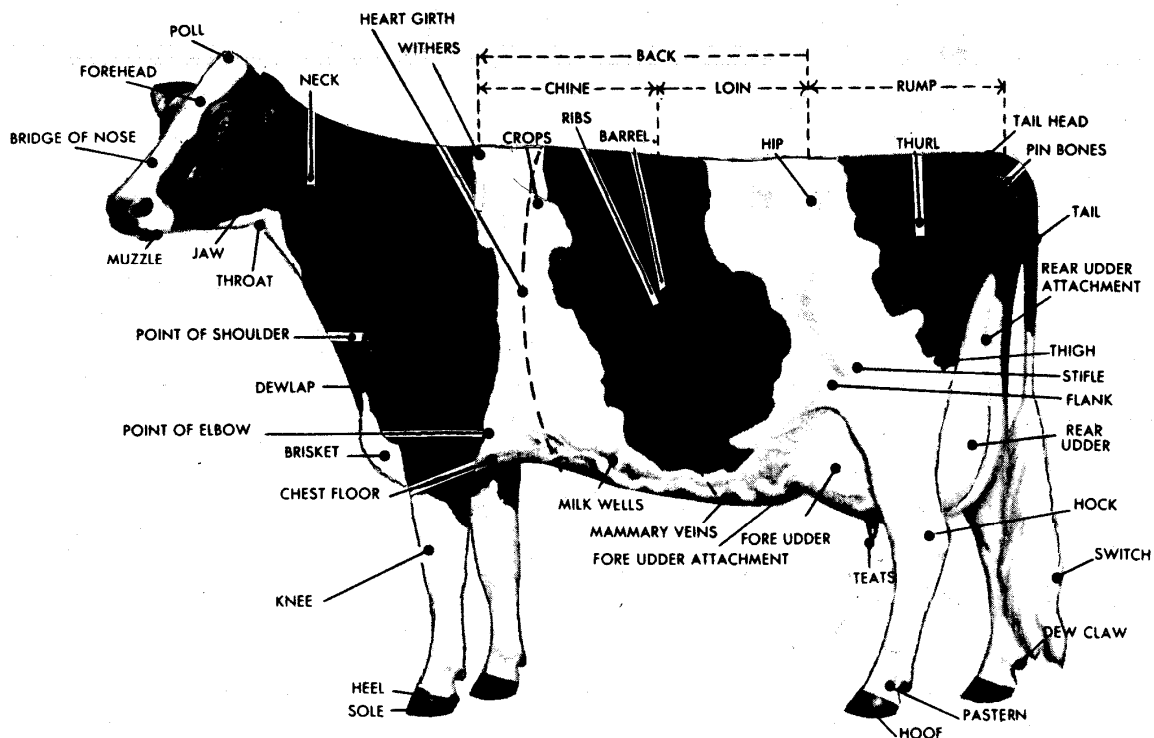
Parts of the Dairy Cow

Before beginning to judge dairy cattle, judges should become familiar with the parts of the dairy cow. Figure 1 has the location and name of the body parts of the dairy cow. Learning and using these terms is essential.

Score Card

The Purebred Dairy Cattle Association (PDCA) developed a score card (figure 2) that describes ideal dairy conformation. Five major categories are defined: frame, dairy character, body capacity, feet and legs, and udder. Whether consciously or not, the score card is referred to when placing a class of dairy cattle. Figure 3 illustrates a few of the traits referred to on the score card.

Figure 1. Parts of the Dairy Cow

- Diagram courtesy of the Holstein Association USA, Inc.

Figure 2. Dairy Cow Score Card

Dairy Cow Unified Score Card

*All traits are listed in priority order.

1. **Frame- 15%**
The skeletal parts of the cow, with the exception of feet and legs, are evaluated.

   Rump- long and wide throughout with pin bones slightly lower than hip bones. Thurls need to be wide apart and centrally placed between hip bones and pin bones. The tailhead is set slightly above and neatly between pin bones, and the tail is free from coarseness. The vulva is nearly vertical. **Stature**- height, including length in the leg bones. A long bone pattern throughout the body structure is desirable. Height at the withers and hips should be relatively proportionate. **Front End**- adequate constitution with front legs straight, wide apart and squarely placed. Shoulder blades and elbows need to be firmly set against the chest wall. The crops should have adequate fullness. **Back**- Straight and strong; the loin- broad, strong, and nearly level. **Breed Characteristics**- overall style and balance. Head should be feminine, clean-cut, slightly dished with broad muzzle, large open nostrils, and a strong jaw is desirable.

   Rump, Stature, and Front End receive primary consideration when evaluating Frame.

2. **Dairy Character- 20%**
The physical evidence of milking ability is evaluated. Major consideration is given to general openness and angularity while maintaining strength, flatness of bone and freedom from coarseness. Consideration is given to stage of lactation.

   Ribs- wide apart. Rib bones are wide, flat, deep, and slanted toward the rear. **Thighs**- lean, incurving to flat, and wide apart from the rear. **Withers**- Sharp with the chine prominent. **Neck**- long, lean, and blending smoothly into shoulders. A clean-cut throat, dewlap, and brisket are desirable. **Skin**- thin, loose, and pliable.

3. **Body Capacity- 10%**
The volumetric measurement of the capacity of the cow is evaluated with age taken into consideration.

   Barrel- long, deep, and wide. Depth and spring of rib increase toward the rear with a deep flank.
   Chest- deep and wide floor with well-sprung fore ribs blending into the shoulders.

   The barrel receives primary consideration when evaluating Body capacity.

4. **Feet and Legs-15%**
Feet and rear legs are evaluated. Evidence of mobility is given major consideration.

   Feet- steep angle and deep heal with short, well-rounded closed toes. **Rear Legs: Rear View**- straight, wide apart with feet squarely placed. **Side View**- a moderate set (angle) to the hock. **Hocks**- cleanly molded, free from coarseness and puffiness with adequate flexibility. **Pasterns**- short and strong with some flexibility.

   Slightly more emphasis placed on Feet than on Rear Legs when evaluating this breakdown.

5. **Udder- 40%**
The udder traits are the most heavily weighted. Major consideration is given to the traits that contribute to high milk yield and a long productive life.

   Udder Depth- moderate depth relative to the hock with adequate capacity and clearance. Consideration is given to lactation number and age. **Teat Placement**- squarely placed under each quarter, plumb and properly spaced from side and rear views. **Rear Udder**- wide and high, firmly attached with uniform width from top to bottom and slightly rounded to udder floor. **Udder Cleft**- evidence of a strong suspensory ligament indicated by adequately defined halving. **Fore Udder**- firmly attached with moderate length and ample capacity. **Teats**- cylindrical shape and uniform size with medium length and diameter. **Udder Balance and Texture**- should exhibit an udder floor that is level as viewed from the side. Quarters should be evenly balanced; soft, pliable and well collapsed after milking.

Figure 3. Key Traits from the Scorecard (illustrations from the Linear Classification System of the Holstein Association USA, Inc.)

Frame, Rump Angle

Pins higher than hooks | Slight slope from hips to pins | Extreme slope from hips to pins

Pin bones should be slightly lower than hip bones. A slight to moderate slope from hips to pins is associated with less calving difficulty, fewer reproductive problems, and greater longevity. Pins higher than hooks is often, but not always, caused by the thurl placement being too far back. Cows with extreme slope to the rump sometimes also have undesirable set to the hock or are awkward in their hind leg movement.

Dairy Character, Ribs

Tight Rib | Intermediate | Extremely open

Ribs should be wide apart and slanted toward the rear. This characteristic is also referred to as openness and sweep to the rib. Rib bones should have adequate depth. Also, note in the above diagram that the neck should be long and lean. The brisket should be free of excess fat. The throat should be clean-cut, however, a little bit of extra loose, pliable skin in the throat area is not a serious fault.

Body Capacity, Barrel

Shallow | Intermediate | Deep

Depth of body is evaluated by looking primarily at the rib cage. Traditional thought has associated an increased body capacity with an increased capacity to consume large amounts of forage and hence produce more milk. However, scientific research has not supported this association. Body capacity receives the least amount of weight on the scorecard.

Feet & Legs, Foot Angle

Low | Intermediate | Steep

Cows that have a steep foot angle require less hoof trimming, have better mobility, and greater longevity. A 45° angle, as illustrated in the middle illustration, is the minimum angle desired. A foot angle steeper than the illustration on the right might interfere with the proper cushioning effect of the pastern and could put undue stress on the joints. This seldom occurs.

Feet & Legs, Rear View
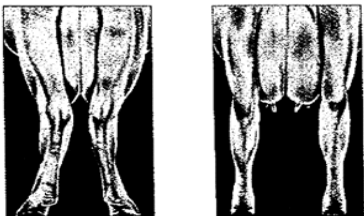
Hocked-in | Correct

Cows that hock-in and toe-out have increased stress on their feet and legs and may have increased trauma to the rear udder as they walk.

Feet & Legs, Side View

Posty | Intermediate set | Sickle

The average cow has more than the desired set to the hock, putting too much stress on leg muscles and tendons. The most desirable set is somewhere between the posty and intermediate set illustrated above. Posty-legged cows lack flex to the hind legs which may cause swelling in the hock or stifle and may cause them to be uncomfortable on their legs. If a straight legged cow moves with ease and flex to the hock with no evidence of swelling in the joints, her legs probably are not too straight.

Figure 3. Key Traits from the Scorecard (continued)

Rear Udder Height

Low   Intermediate   High

The distance between the bottom of the vulva and top of the milk secreting tissue determines rear udder height. A high rear udder attachment is thought to be an indicator of more udder capacity.

Rear Udder Width

Narrow   Intermediate   Wide

Rear udder width is evaluated at the point of attachment. Like rear udder height, rear udder width is an indicator of udder capacity.

Udder Depth

Deep Udder below hocks   Udder floor above hocks   Udder well above hocks

Udder depth is the most important physical trait of the udder. It is evaluated as the relationship of the udder floor relative to the hocks. Higher udders are related with less mastitis, less udder injury, and greater longevity. When evaluating udder depth, the age of the cow needs to be taken into account. Udders below the hock are a serious fault.

Udder Cleft
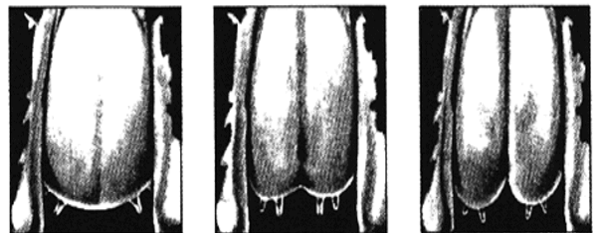
Weak   Intermediate   Strong

A deep udder cleft is an indicator of a strong median suspensory ligament. This is an elastic ligament, up the center of the udder, that provides 60% of the udder's support. Occasionally, you may see cows, especially in the Brown Swiss breed, that are relatively flat on the bottom of the udder but still have a strong median suspensory ligament.

Teat Placement

Wide placement on quarter   Centrally placed on quarter   Inside placement on quarter

Teat placement is the second most important physical trait of the udder. A serious fault is front teats that are placed on the outside of the quarters causing liner slippage and squawking during milk. Rear teats can be placed too close making teat cup attachment difficult but this is seldom a serious problem. Distances between teats often increase with succeeding lactations.

Fore Udder Attachment

Loose   Intermediate   Strong

Fore udder attachment is an evaluation of the strength of the fore udder attachment to the body wall by the lateral ligaments. It is the third most important physical trait of the udder when predicting herd life. Moderate amount of bulge to the fore udder is expected in high producing dairy cows.

Additional Factors to Evaluate

Horns
No discrimination

Eyes
1. Blindness in one eye: *slight* discrimination
2. Cross or bulging eyes: *slight discrimination*
3. Evidence of blindness: *slight-serious discrimination*
4. Total blindness: *disqualification*

Wry Face
Slight-serious discrimination

Parrot Jaw
Slight-serious discrimination

Shoulders
Winged: slight-serious discrimination

Tail Setting
Wry tail or other abnormal tail settings: slight-serious discrimination

Capped Hip
No discrimination unless effects mobility

Legs and Feet
1. Lameness-apparently permanent and interfering with normal function: *disqualification*. Lameness-apparently temporary and not affecting normal function: *slight discrimination*
2. Evidence of crampy hind legs: *serious discrimination*
3. Evidence of fluid in hocks: *slight discrimination*
4. Weak pasterns: *slight-serious discrimination*
5. Toe out: *Slight discrimination*

Udder
1. Udder definitely broken away in attachment*: serious discrimination*
2. A weak udder attachment: *slight-serious discrimination*
3. Blind quarter: *disqualification*
4. One or more light quarters, hard spots in udder, obstruction in teat (spider): *slight-serious discrimination*
5. Side leak: *slight discrimination*
6. Abnormal milk (bloody, clotted, watery): *possible discrimination*

Lack of Size
Slight-serious discrimination

Evidence of Sharp Practice
1. Animals showing signs of having been tampered with to conceal faults in conformation and to misrepresent the animals soundness: *disqualification*
2. Uncalved heifers showing evidence of having been milked: *slight-serious discrimination*

Temporary or Minor Injuries
Blemishes or injuries of a temporary character not affecting animal's usefulness: *slight-serious discrimination*

Overconditioned
Slight-serious discrimination

Freemartin Heifer
Disqualification

Breed Characteristics
-Unique breed characteristics should be considered when using the score card. Consider the following points for the six major dairy breeds:

Ayrshire: Strong and robust, showing constitution and vigor, symmetry, style, and balance throughout, and characterized by strongly attached, evenly balanced, well-shaped udders. Color- Cherry red, mahogany, or a combination of those colors with white or white alone.

Holstein: Rugged, feminine, qualities in an alert cow possessing Holstein size (mature cow- 1500 lbs.) and vigor. Color- Black and white or red and white markings clearly defined.

Guernsey: Femininity, refinement, with increasing emphasis on size (mature cow- 1150 lbs.) and strength. Color- a shade of fawn with white markings throughout clearly defined.

Brown Swiss: Strong and vigorous, but not coarse. Size (mature cow- 1500 lbs.), ruggedness and correct legs are desired. Extreme refinement undesirable. Color- solid brown varying from very light to dark. Muzzle is black encircled by a mealy colored ring and the switch and hooves are black.

Jersey: Sharpness with strength indicating productive efficiency. Color- some shade of fawn with or without white markings. Muzzle is black encircled by a light colored ring, and the tongue and switch may be either white or black.

Milking Shorthorn: Strong and vigorous, but not coarse. Color- red, white or any combination (No black markings allowed).

Judging Procedures
The first impression of an animal is often quite valuable. Stick with it unless further inspection gives good reason to change. If a class of animals has an easy top, bottom or middle placing, recognize this and spend more time on closer placings in the class.

Observe walking animals for ease of movement, and set to the rear legs and strength of pasterns. Also, check for strength of loin and firmness of udder attachments. A front view of the animal shows width of chest. A rear view aids in evaluating sharpness of withers, spring of rib, width of rump, width of rear udder and amount of udder cleft. The udder is 40% of the scorecard and often becomes the deciding factor in close placings. Milking cows at the peak of lactation are given an advantage over dry cows or stale cows of equal merit.

Attempting to justify decisions while placing classes helps to avoid bad placings. Develop a good system to evaluate classes for ranking each cow in a class for each major category on the score card.

Judging Dairy Heifers
The judging of dairy heifers differs from judging cows in that very little emphasis is placed on a heifer's udder unless it contains excess fatty tissue or has the appearance of being suckled. A heifer's udder conformation is not very predictive of what the udder will look like once the heifer freshens. Less emphasis is placed on body capacity when

judging young calves because shallow calves usually body down as they mature. It is important to remember that bred heifers are expected to carry some additional condition as they get close to calving.

Oral Reasons

An important part of judging is justifying your placing to the audience, exhibitors, or contest officials. Whether it is at a judging contest or a dairy show, a judge must be able to explain his or her decisions. This takes practice in using proper terms in an organized and interesting style.

Clear, accurate, and comparative notes will help to reconstruct a mental picture of individual animals in judging contests. Figure 4 shows one method of taking notes. Select and develop a workable method of taking notes that includes:

● A brief description (black, small, horned, fancy, thick, low-set, speckled, etc.) of each animal to aid mental recall,

● Several distinct differences for each placing that will be used in the reasons,

● A list of grants (areas in which the lower placed animal holds an advantage).

Figure 4. Sample Notes

Class Holstein 3 yr. Olds	Placing 4-1-3-2
Open statement: 4 excelled the class in udder	
1. horned tallest longest angular	Top (4/1 because) -high & wide RU -bloom to U -strength Recognizing 1: taller & longer
2. easy bottom speckled angular weak loin funnel teats	Middle (1/3 because) -sharper @ pt of withers -defined hips & pins -taller -longer Granted 3: width of chest & spring of rib
3. strong straight-lined black	Bottom (3/2 because) -teat shape -firmer FU attachment -stronger loin -neater tail head setting Concede 2: longer, leaner neck & angularity
4. best U powerful shortest	Last (2 because) **admire**: angularity **However**: lacks straightness of lines & strength to U attachments

Major differences should be emphasized in reasons, and all differences mentioned must be real. Most contest officials are sensitive to inaccurate comments. A clear and accurate set of reasons emphasizing the main points will outscore a fancy set that contains a few untrue statements.

When giving reasons for two-way traits, remember two-way traits require a clarifying statement. There are at least four traits that fall into the two-way classification. They are rump angle, leg set, levelness of udder floor, and teat size. To avoid repetition and to add variety to the terms used, try to expand your terminology to indicate the degree of criticism or fault. Use "noting" or "recognizing" to clarify a two-way trait if the criticism of the fault is minimal or if it is part of the discussion of the top pair. For more serious faults, emphasis can be given to the problem by using "faulting" or "criticizing" to clarify.

Basic points for presenting oral reasons in judging contests are:

● Reasons should be 1½ to 2 minutes in length. Contestants need to learn to give oral reasons without referring to their notes early in their judging careers. Beginning contestants should start with a shorter more concise set of reasons that they feel comfortable giving without reference to notes. As they gain experience and confidence, the reasons can be expanded.

● **Organize** reasons in the following order:
  1. State the class (age and breed)
  2. Your placing
  3. Placing comparisons with at least one grant for each placing
  4. Re-state the class and placing
  5. Optionally opening and closing statements can be added to reasons as contestants gain experience in oral reasons.

● **Accuracy** is critical. Do not lie, make up points, or generalize.

● **Comparative** terms (Figure 5) should be used instead of descriptive terms. Judges should compare each animal to the one placed below or above it. Descriptive terms should only be used to help others visualize exactly what cow you are referring to.

● **Terms** must be used correctly. Strong and positive statements are preferred. Avoid, "I think," "I guess," "I felt," or "maybe." Always use present tense.

● **Delivery**: Use a conversational, pleasant, and enthusiastic tone. Speaking in a bold voice will tell the official that you are confident in your placing, but do not shout. A couple of common faults for contestants are to talk too softly or too fast.

● **Appearance** includes frequent eye contact, conveying confidence, standing squarely about 6 feet from the official, and limiting gestures, which are distracting.

Figure 6 shows an example set of reasons.

Figure 5. A List of Comparative Terms

Frame
Style:
 More style and balance
 A more youthful appearance
 Straighter lined individual
 More stylish from head to tail
 Moves with more style and grace
Stature:
 Taller and longer
 More upstanding
 Greater size and scale
 Towers over 3 from front to rear
 Stands taller at the withers
 Walks more uphill
 Shows more length from head to tail
 Stretchier from end to end
 Growthier (heifers)
 More altitude at the point of withers
Head:
 A more feminine head
 More breed character about the head
 More alert about the head
Shoulders:
 Blends more smoothly from neck to shoulder and from shoulder
   to barrel
 Blends more smoothly from part to part
 Tighter in the shoulder
 Tighter at the point of elbow
Back:
 Straighter throughout
 Stronger in the chine region
 Straighter topline, particularly stronger loined
 Stronger topped
 Harder topped
Rump:
 Longer and more nearly level from hips to pins
 More length and levelness from hips to pins
 A tailhead that sits more neatly between a wider set of pin bones
 More width of rump
 Slopes less from hips to pins
 More nearly level over the rump
 More slope to the rump
 Thurls more centrally located between the hips and pins
 More moderate slope from hips to pins
 Squarer out over the rump
 Lower pin bone position
Feet and Legs
 Stands with her legs placed more squarely beneath her
 Less sickled in the hock
 More set to the hock
 Stands wider at the hock
 Moving behind the cows, I noticed…
 Viewing the cows on the move, I noticed…
 Moves more freely with more strength of pastern and more
   depth of heel
 Shorter and stronger pasterns
 A deeper heel
 Steeper foot angle
 Tracks more straight froward in the rear legs
 While circling the ring, 3 moves…
 Hocks in less

 Less set to the rear legs
 Not as posty-legged
 Less spread between the rear toes
 More graceful on the move
 Less coarse about the hock
 Less puffy in the hock
 Cleaner-boned about the hock
 More strength and substance of bone

Dairy Character
 Displays more openness and angularity throughout
 More definition and refinement from end to end
 Cleaner-cut
 More dairy-like
 Carries less excess flesh
 A more milky appearance
 Cleaner-cut about the neck
 A longer and leaner neck
 Trimmer through the neck, throat, and brisket
 Less throaty
 Sharper at the withers
 More definition…
 Showing more flatness and openness of rib
 More open ribbed
 Less patchy about the pin bones
 More incurving in the thighs
 Flatter boned
 More prominent…
Body Capacity
 More powerfully built
 Greater overall capacity
 More rugged and powerful
 More total dimension of body
 Greater strength and substance
 More width of chest
 Toes out less in the front end
 More depth of heart
 Fuller in the crops
 Larger heart girth
 More depth and spring of rib
 Ribs that are more boldly sprung
 Greater spring of fore and/or rear rib
 Greater depth of fore and/or rear rib
 Deeper and longer bodied
 More depth of barrel

Udder
 Snugger in the fore udder attachment
 Firmer fore udder attachment
 Longer fore udder, blending more smoothly into the body wall
 Smoother fore udder attachment
 Less bulgy fore udder
 More length to the fore udder
 More length of udder from front to rear
 Higher (and/or wider) rear udder attachment
 Cuts-in less in the rear udder
 Less pinched in the rear udder
 More fullness to the top of the rear udder
 Showing more balance and symmetry to the udder, noting 2…
 Less quartering on the side of the udder
 Udder shows more balance from front to rear

Figure 5. A List of Comparative Terms (continued)

More width of rear udder
Stronger center support
More definite halving to the udder
Stronger median suspensory ligament, resulting in teats that
    pointed more inward
A deeper crease in the udder
Less pendulous udder
Udder held higher above the hock
Higher held udder
Carried her udder closer to the body
More snugly-held udder
More youthful and snugly attached udder
Teats hanging more plumb to the ground
More desirable teat placement, criticizing 2…
Smaller and shorter teats
Teats placed more squarely on the udder floor
Teats which were more centrally located on the quarter
Teats that hung more perpendicular to the ground
Less width between the front teats
Front teats that strutted less
Teats placed closer to the midline of the udder
Less funnel-shaped teats
Udder showing more bloom
More capacious udder
Less evidence of edema
Less evidence of congestion in the udder
More apparent quality to the udder
Has an advantage in stage of lactation, with more bloom of
    udder today

Connecting terms
Furthermore
Likewise
In addition
To complement this
Moreover
Besides this
Additionally
Another point in 3's favor
2 also had

Transition Statements
4 follows the type pattern set by 2
In my middle placing, 3 went over 2
Moving on to my middle placing, 3 places over 2
Going now to my final placing, of 2 over 4
It is because of this advantage in
In placing 3 over 2,

Grants
However, 3 has
Recognizing, however, that
I do concede
I admit, however, that
Granted! 3 has an advantage in
I realize

Figure 6. Sample Set of Reasons

I placed this class of 3-year-old Holstein cows, 4-1-3-2. 4 excels the class in strength of udder attachments and power.

Because of her advantage in udder, 4 places over 1. 4 has a higher and wider rear udder attachment, and more bloom to the udder today. Also, 4 displays more strength throughout the front end, being wider at the chest floor than 1. A last point in 4's favor is she shows more depth of rear rib than does 1. Recognizing however, that 1 is a taller and longer individual.

1, the horned cow, places over 3 because she is taller at the point of withers and is longer through the barrel and shows more length from hips to pins. To complement this, 1 has a distinct advantage in dairy character, with more sharpness at the withers and more definition of the hips and pins. Granted, 3 is a more powerfully-built cow, displaying more width of chest floor and more boldly sprung ribs.

In my bottom placing, 3 easily places over 2 because of her decided advantage in udder. 3 has a firmer fore udder attachment and more desirable teat shape, criticizing 2's teats for being funnel-shaped. Furthermore, 3 is straighter over the topline than is 2, with a stronger loin and a tail head that sits more neatly between a wider set of pin bones. I do concede 2 has a longer, leaner neck and is more angular throughout.

I admire 2's sharpness, however I feel justified in placing 2 at the bottom of this class because she lacks the straightness of lines and strength of udder attachments to place any higher in this class of Holstein 3-year-olds that I have placed 4-1-3-2.

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