



CANADA
4-H Manitoba

Judging Dairy Cattle

The primary function of the dairy cow is the economical production of milk. It has been proven that quality type or form is directly related to function. In other words, a dairy cow with good quality type has the potential to efficiently and economically produce milk.

Your task, as a producer of dairy cows, is to breed good quality cows. In this leaflet we will work towards these objectives to help you accomplish your task.

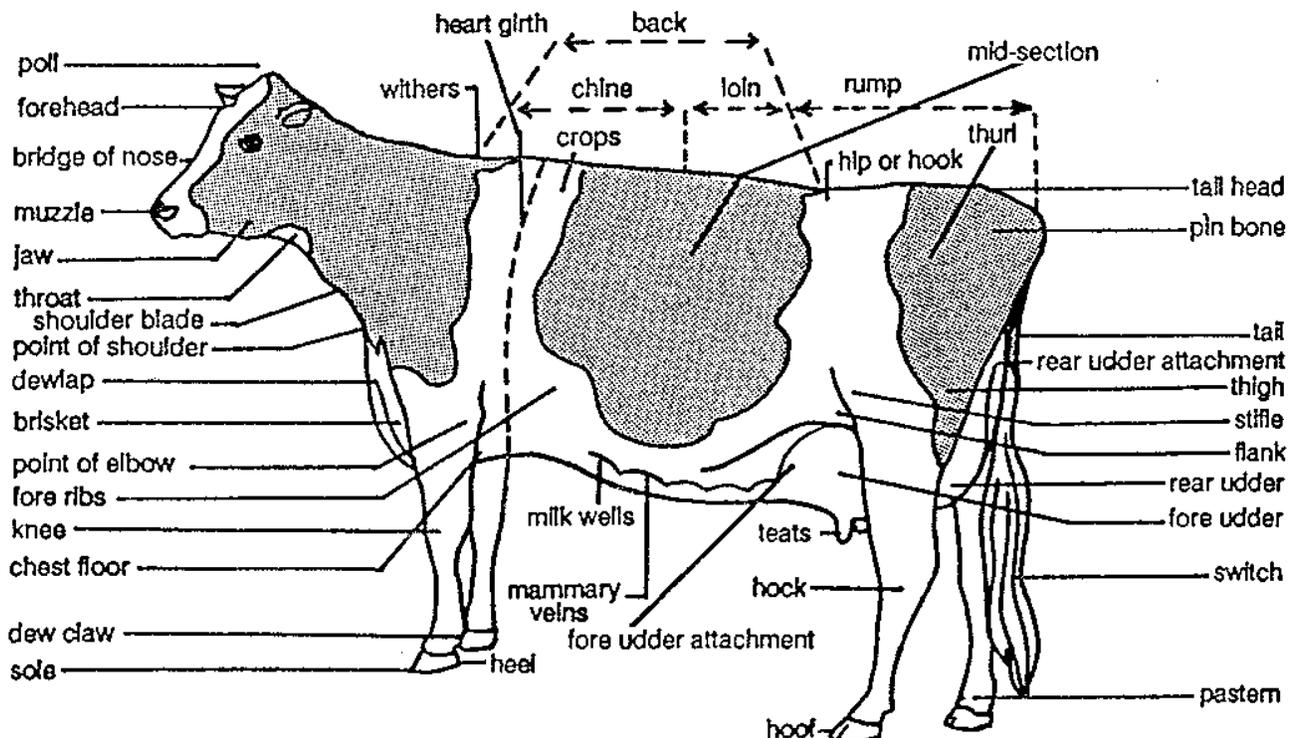
Learn the desirable points of conformation in a quality dairy cow and heifer.

Show you how to determine if a particular animal possesses these desirable points.

The first step is to learn the parts of the dairy animal.

Parts of the Dairy Cow

Judging the Dairy Cow



Once you know the parts of the body, the next step to becoming a successful dairy judge is to learn what the ideal animal looks like. In this section, we will work through the parts of a dairy cow and learn the desirable and undesirable characteristics.

Holstein Canada has developed a scorecard which places relative emphasis on the six areas of importance in the dairy cow. This scorecard is used by all dairy breeds in Canada.

The Holstein Cow Scorecard uses these six areas:

1. Frame / Capacity
2. Rump
3. Feet and Legs
4. Mammary System
5. Dairy Character

When you judge, do not assign numerical scores. Use the card for relative emphasis only.

When cows are classified by the official breed classifiers, classifications and absolute scores are assigned.



HOLSTEIN COW SCORE CARD	
	18
<p>1. FRAME / CAPACITY Attractive individuality indicating vigour, strength, stretch, size and stature with harmonious blending and proportional balance of parts; head indicating femininity with adequate strength, mid-section relatively large providing ample capacity. HEAD – broad muzzle with large, open nostrils; jaws meeting properly; strong lower jaw; broad forehead SHOULDER BLADES – set smoothly against chest wall and withers, forming neat junction with the body CHEST – wide floor, resulting in ample width between legs HEART GIRTH – large and deep, full at elbows with well sprung fore ribs blending smoothly into the shoulders CROPS – well filled BACK – strong and straight, with vertebrae well defined LOIN – broad and slightly arched; vertebrae well defined, attachment to hip bones high and wide MID-SECTION – long ribs highly and widely sprung, with depth and width to increase toward rear</p>	10
<p>2. RUMP Long, wide and clean cut, blending desirably with the loin. HIPS – wide but not prominent, slightly higher with the pins PINS – wide apart and free from patchiness THURLS – high and wide apart, giving consideration to stage of lactation TAIL-HEAD – refined, carrying out level with backline and set slightly higher than pins TAIL – long and slender</p>	20
<p>3. FEET AND LEGS Clean and strong boned, with shape and movement of feet and legs resulting in proper carriage of the animal. FEET – short and well rounded, with deep heel; toes slightly spaced LEGS - Pasterns strong of medium length, and flexible - Fore legs straight and wide apart with feet squarely placed - Hind legs nearly perpendicular from hock to pastern from the side view, straight and wide apart from the rear view; hocks cleanly moulded - Bone flat, strong and flinty, with tendons well defined</p>	40
<p>4. MAMMARY SYSTEM A strong attached, well balanced, level udder of fine texture indicating heavy production and a long period of usefulness. UDDER – symmetrical. Of moderate length, width, and depth; slight quartering on sides MEDIAN SUSPENSORY LIGAMENT – strong, showing definite cleavage between halves UDDER TEXTURE – soft, pliable, elastic and well collapsed after milking FORE UDDER – firm and smooth attachment to body wall; of moderate length; quarters evenly balanced REAR UDDER – attached high, wide and strong; slightly rounded; uniform width from top to floor; quarters evenly balanced. TEATS – uniform size of medium length and diameter, cylindrical, and plumb; from side view teats placed in centre of each quarter, and from rear view teats slightly closer to inside than outside of each quarter MAMMARY VEINS – long, tortuous and branching. Udder veining is desirable</p>	12
<p>5. DAIRY CHARACTER Evidence of milking ability, angularity and general openness, without weakness; freedom from coarseness, giving due regard to stage of lactation. HEAD – clean cut; eyes large and bright; ears carried alertly; head with Holstein Breed Character NECK – long and lean, blending smoothly into shoulder; clean cut about the throat, dewlap and brisket WITHERS – well defined and wedge-shaped with the dorsal process of the vertebrae rising slightly above the shoulder blades RIBS – wide apart; rib bones wide, flat and long FLANKS – deep and refined THIGHS – incurving to flat from side view; from the rear view, wide apart, providing ample room from the udder and its rear attachment SKIN – loose and pliable. Hair fine UDDER – soft and pliable, free from excess tissue or edema BONE – flat, strong and clean out</p>	100 Points
TOTAL	100 Points

Let's examine the general appearance of a dairy cow before we consider each of the five areas in depth. As we discuss the desirable or ideal qualities we will include the commonly found undesirable qualities or faults.

General Appearance

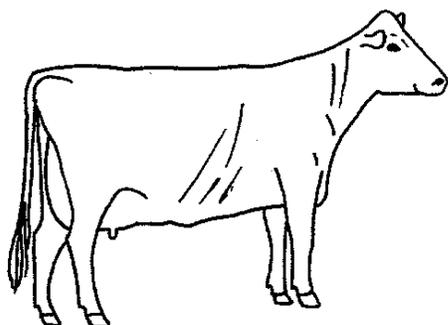
“Attractive individuality indicating femininity, vigor, strength, stretch, size and stature, with harmonious blending and proportional balance of all parts, and impressive carriage. Consider all parts of a cow in evaluating general appearance.”

As a dairy judge, you should look for a cow with parts that blend together smoothly and are proportional. If the cow has these traits, she will be more appealing to the eye.

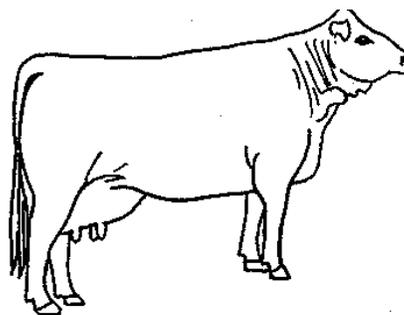
The best method of determining general appearance or eye appeal is to stand back from the cow and get a good side view. Examine the outline of the cow, looking for a straight topline, level rump, correct set to the legs, and adequate height for the breed. Femininity, balance and strength are also desired.

Femininity

Femininity is desired in the dairy cow. A feminine cow will be sharp and clean fronted, with a lean neck and long, smooth muscling. Femininity in the cow is related to dairy character.



Feminine cow



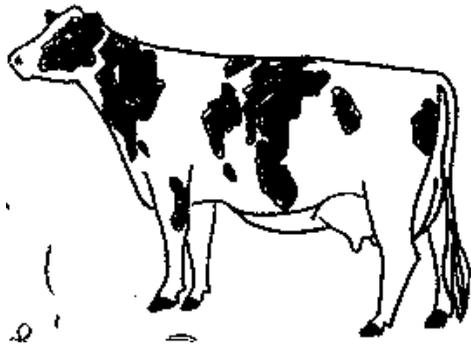
Non-feminine cow

Balance

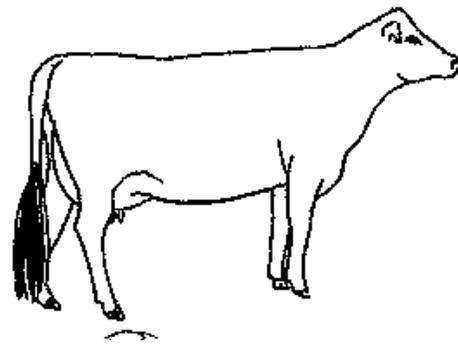
With a smooth blending of body parts, the cow will appear symmetrical and balanced. If the cow is well balanced, her body parts will blend smoothly, giving a more attractive appearance.

Size

The dairy cow should be an appropriate size for the breed. No matter what breed, the cow should show stature and quality of appearance and upstandingness and stretch. Know the characteristics and standards for the breeds.



Mature Holstein Cow
Height – 1.4 meters (Approx. 55 inches)
Weight – 680 kg (1496 lbs)



Mature Jersey Cow
Height – 1.2 meters (Approx. 47 inches)
Weight – 450 kg (990 lbs)

I. Frame/Capacity

“Attractive individuality indicating vigour, strength, size and stature with harmonious blending and proportional balance of parts; head indicating femininity with adequate strength, mid-section relatively large providing ample capacity.”

Head

- broad muzzle with large, open nostrils
- jaws meet properly without overlap
- strong lower jaw
- broad forehead

Shoulder

- set smoothly against the chest wall and withers

Blades

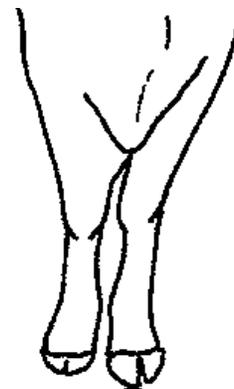
- forming neat junction with the body

Chest

- wide floor, resulting in ample width between the legs



Desirable width and power through chest



Narrow and pinched through the chest

Heart Girth

- large and deep
- full at the elbows with well sprung fore ribs
- fore ribs blend smoothly into the shoulders

Crops

- well filled

Back

- strong and straight
- vertebrae are well defined

Loin

- broad and slightly arched
- vertebrae are well defined
- attachment to hip bones is high and wide

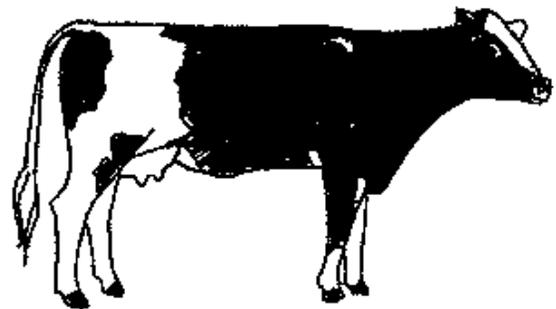
Mid-section

- long ribs highly and widely sprung
- depth of ribs tending to increase towards the rear



Desirable Body Capacity

- deep through the heart
- back strong and straight
- broad, strong loin
- ribs high and wide



Undesirable Body Capacity

- shallow through the heart
- back fleshed
- weak over the loin
- narrow ribbed

Look at body capacity as being three dimensional. Always consider the length, depth and width of the dairy animal.

2. Rump

“Long, wide and clean cut, blending desirably with the loin.”

Hook Bones

- wide, but not prominent
- slightly higher than the pins

Pin Bones

- wide apart and free from patchiness
- slightly lower set than hooks

Thurls

- high and wide apart
- give consideration to the stage of lactation

Tailhead

- refined
- carrying out level with the backline
- set slightly higher than the pins

Tail

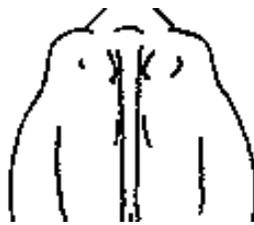
- long and slender

Pelvic Angle

- moderately sloped with pins set slightly lower than the hooks



Extremely Narrow Rump



Intermediate Width of Rump



Extreme Width of Rump



Pins set higher than hocks
-undesirable



Nearly level pelvic angle
-pins slightly lower
than hocks



Severe slope
-pins set extremely
below hocks

3. Feet and Legs

“Clean and strong boned, with shape and movement of feet and legs resulting in proper carriage of the animal.”

Feet

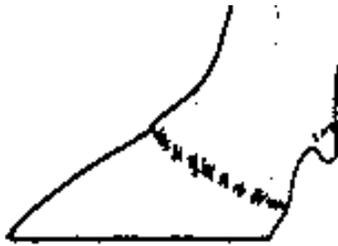
- short and well rounded, with deep heel
- toes slightly spaced
- correct angle, durable

Legs

- Pasterns
 - strong
 - of medium length
 - flexible



Short, strong pasterns
Good depth of heel
Proper angle



Long, weak pasterns
Shallow heel
Low angle



Extremely steep angle

- Fore legs
 - straight and wide apart
 - feet squarely placed
- Hind legs
 - side-nearly perpendicular from hock to pastern
 - rear-straight and wide apart
 - hocks cleanly molded



Ideal Rear Legs



Sickle Hocked



Post Legged



Cow Hocked

- Bone
 - flat, strong and flinty
 - tendons well defined

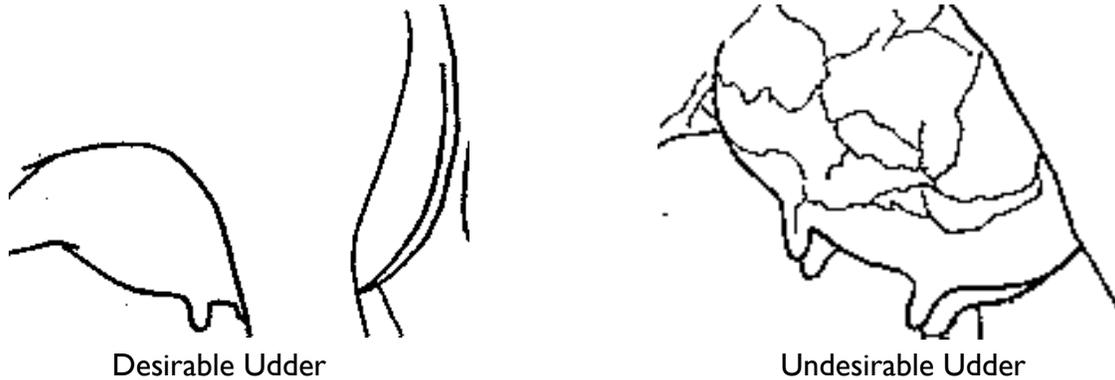
4. The Mammary System

“A strongly attached, well balanced, level udder of fine texture indicating heavy production and a long period of usefulness.”

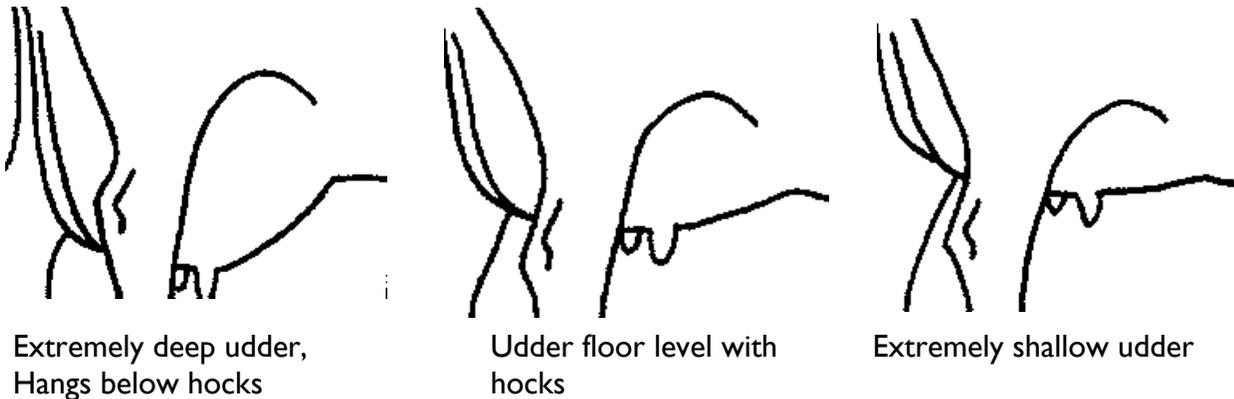
The mammary system accounts for 40% of the relative merit, making it the single most important part of the dairy cow. This should be no surprise as the most important economic function of the dairy cow is milk production.

The mammary system includes all of the parts of the body of the dairy cow which have a role to play in the production of milk. Each individual part has its own function and its own specific desirable qualities.

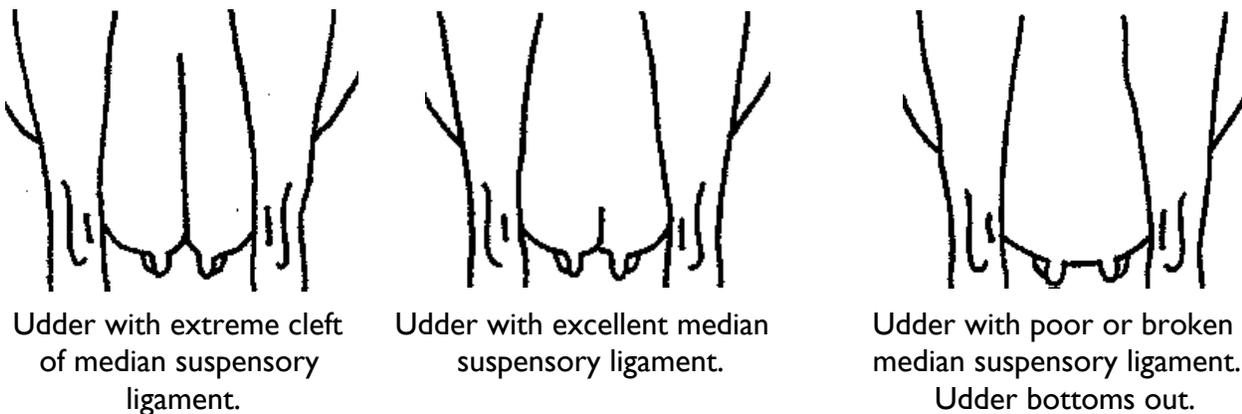
The **Udder** should be symmetrical and well balanced with evenness of all four quarters. It should be securely attached to the body and be capacious, but not necessarily large. This will give the udder a “milky” appearance.



The udder should be of intermediate depth. The udder should never hang below the hocks of a cow of any age. It should be slightly quartered on the sides.



The **Median Suspensory Ligament** is the strong supportive ligament which runs lengthwise through the center of the udder. It should be strong but not overly tight, giving a definite cleavage or crease between the halves of the udder. If this ligament is not strong enough, the floor of the udder will bottom out, causing the udder to weaken and the teats to point outward.



Udder **texture** should always be soft, pliable and elastic. After milking, the udder should be well collapsed.

The **Fore Udder** is composed of the front parts of the udder. Most important here is the moderately long, firm and smooth attachment of the fore udder to the body wall. A longer fore udder attachment provides for more capacious udder. With a well attached fore udder and a strong median suspensory ligament, the quarters will be evenly balanced. A strong fore udder attachment corresponds to a longer lasting dairy cow.

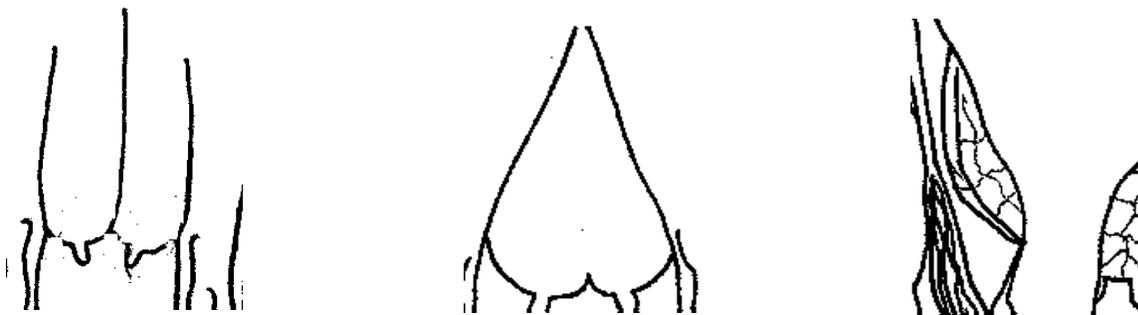


Desirable fore udder

Short fore udder

Bulgy, loose fore udder attachment

The **Rear Udder** is composed of the hind parts of the udder. Most important here is the high, wide and firm attachment of the rear udder. It should be balanced in proportion to the fore udder attachment. The rear udder should have a slightly rounded appearance and be uniform in width from the top of the attachment to the floor of the udder with even balance of the quarters.



Desirable Rear Udder with high, wide rear attachment

Low, narrow rear udder attachment

Rear udder tucked inward limiting rear udder capacity

There should be four fully functional **Teats** of uniform size and medium length and diameter. The teats should be cylindrical and plumb and should hang perpendicular to the floor of the udder. From a side view, the teats are placed in center of each quarter. From a rear view, the teats are slightly closer to the inside than the outside of each quarter.



Ideal Udder with 4 evenly placed teats



Teats too long

The **Mammary Veins** should be long, tortuous and branching. Prominent udder veining, although it is attractive, is not associated with higher milking ability.

5. Dairy Character

“Evidence of milking ability, angularity, and general openness, without weakness; freedom from coarseness, giving due regard to stage of lactation.”



Desirable dairy character
(side and top view)



undesirable dairy character
(side and top view)

Head

- clean cut and feminine
- eyes large and bright
- ears carried alertly
- resulting in a head with character appropriate for the breed



Ideal dairy head – with smooth blending of head, neck and shoulders

Neck

- long, lean and clean
- blending smoothly into the shoulder
- clean about the throat, dewlap and brisket
- refined and feminine



Ideal dairy neck and shoulders



Coarse shoulders, throaty



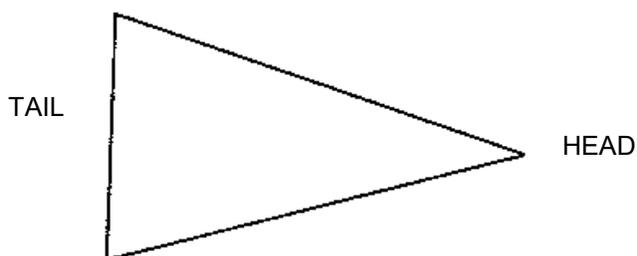
Winged shoulders

Strength

- large enough body capacity to consume necessary feed to meet nutritional requirements

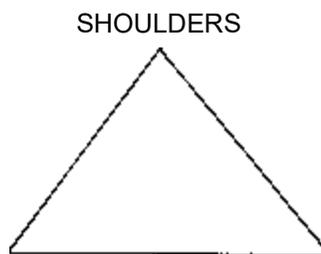
Angularity

- one of the best indicators of dairy character
- straight and structured rather than rounded
- use the following triangles as a guide to help you to select an angular dairy cow



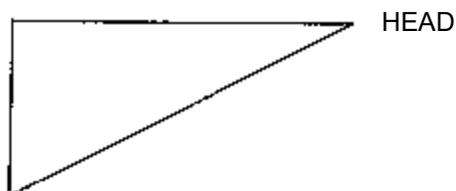
Top View

long capacious body, sharp at the shoulder and wide in the rump



Front View

sharp over shoulders with good spring of rib, wide set legs



Side View

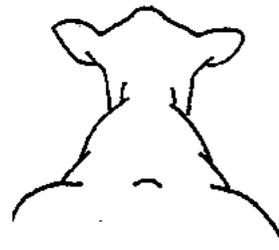
long in the body, straight topline, with adequate set to legs, a capacious udder

Withers

- sharp, clean and free from excess flesh
- well defined, prominent and wedge shaped
- dorsal process of vertebrae rise sharply above shoulder blades



Desirable Withers
Well defined



Undesirable Withers
Overconditioned

Ribs

- wide spaced, exhibiting openness and sweep
- rib bones are wide, flat and long

Flanks

- deep through rib and flank
- good spring of rib

Thighs

- generally clean, incurving and refined
- side view – incurving to flat
- rear view – wide apart, but not fleshy
- provide ample room for the udder and its rear attachment

Skin

- loose and pliable
- hair fine

Udder

- soft and pliable in texture
- free from excess tissue or edema (hardness or swelling in the udder)

Bone

- flat, strong and clean cut

Be Aware That...

Stage of lactation affects a cow's daily character or appearance. A cow which has freshened two months prior will show more dairy character than a similar cow which has been milking for nine months. As the cow progresses in her lactation, she will carry more body conditioning. Take this into consideration when you are judging dairy cattle.

Cows which are too dairy may be frail. There is a point where a cow lacks the strength to produce. A cow with desirable dairy character will also be strong.

Body Condition Scoring of Dairy Cattle

Body condition scoring (BCS) is an indicator of the amount of stored energy reserves (or fat) an animal has and the changes that occur during different stages of lactation.

BCS is a hands-on technique used to assign a numerical rating to each degree of body condition. This is done by appraising the amount of fat cover on the basis of visual appearance and palpation of a cow's topline, loin, hip bone, rump and tail head area.

Body Condition Score #1	-	is emaciated
Body Condition Score #2	-	is thin
Body Condition Score #3	-	is average / good
Body Condition Score #4	-	is heavy condition
Body Condition Score #5	-	is fat / obese

Dairy farmers should regularly evaluate the body condition of their cows and heifers so they can make adjustments to their feeding and management practices.

Adequate body reserves are necessary to maintain health, production and reproduction efficiency.

Under-conditioned cows are prone to:

- reduced milk production;
- reduced conception rates;
- more breeding services due to poor conception;
- silent or missed heat cycles; and
- prolonged calving interval.

Over-conditioned cows are prone to:

- more calving difficulties;
- impaired reproduction; and
- fat cow syndrome problems. For example, retained placenta, metritis and mastitis.

Desired Body Condition Scores:

- Mature cow prior to calving – 3.5 to 4.0
- Mature cow at breeding – 2.5 to 3.5

This score indicates adequate condition for good reproductive efficiency.

Mature cows in mid-lactation:

- 3 for high producing cows,
- 3.5 for average producing cows.

Mature cows in late lactation – 3.5

Note: The ideal condition score for the heifer calving for the first time is 3. Heifers freshening with condition scores in excess of 3 tend to experience more calving difficulties.

The Body Condition Score of a cow at the beginning of lactation can have a significant impact on the level of peak milk production, as well as total milk produced over lactation.

Cows that calve in good condition produce more milk than cows in thinner condition.

Evaluation of Cow Defects or Faults

There are faults which should be identified and discriminated against when judging dairy cattle. Some are more serious than others. The following list separates the faults into slight, moderate and serious discriminations. Be aware of the seriousness of these faults when judging dairy cattle.

Slight Discrimination:

- injured teat (affecting utility)
- temporary udder swelling due to recent calving
- side leak
- capped hip – cow has knocked the hip bone and sheered the top off – animal looks lopsided
- lameness – apparently temporary and not affecting the normal function of the feet and legs
- blemishes or injuries of a temporary character not affecting the animal's usefulness

Moderate Discrimination:

- light quarter
- lack of stature
- lack of size
- overconditioning
- winged shoulders
- wry tail, advanced tail setting or other abnormal tail settings (ie. High or coarse)
- fluid in hocks

Serious Discrimination:

- blind quarter
- two light quarters or obvious unbalanced udder
- significant udder edema
- webbed teat
- evidence of arthritis or crampiness
- lameness apparently permanent and interfering with normal function
- wry face
- parrot jaw
- protruding lower jaw
- freemartin heifers

It is your responsibility as a judge to be able to identify these faults.

Judging the Dairy Heifer

A dairy heifer is a young dairy female, usually under the age of two years, which has not yet calved.

When judging dairy heifers, look for structurally correct, clean-cut, open-ribbed, stylish animals with adequate size for their age.

The same points are desired in the dairy heifer as in the dairy cow. The emphasis you should place on each of these areas is:

	Relative Emphasis
Dairy Character.....	20
Frame / Capacity.....	30
Feet and Legs.....	35
Rump.....	15
Total.....	100

Any consideration for development of mammary system should be given under general appearance. Older heifers should show good promise of udder development. Younger heifers will have little or no indication of udder development. Thus, little weight is given to the mammary system on the dairy heifer.

Heifers will generally not show the angularity which is desired in the cow. Older heifers will carry more flesh which will be evident over the rump and at the withers. This fleshiness is tolerated in springing heifers.

An ideal dairy heifer will have these characteristics:

- tall, upstanding and stylish
- adequate strength and capacity
- straight and smooth over the topline
- level and wide in the rump
- smoothly blended and proportioned body parts
- correctly set rear and fore legs
- sharp and clean over shoulders and withers

Judging Dry Cows

Dry cows are those dairy cows which are not currently milking.

When judging any class of dairy cows, you must give consideration to the stage of lactation. Dry cows will normally be carrying extra flesh. They will not show the sharpness and dairyness desired in the milking cow.

The dry udder should be well collapsed, soft and pliable. As the cow nears parturition, the udder will begin to fill and lose its softness. Dry or in milk, the udder should always be uniform and strongly and smoothly attached, both front and rear.

Terminology for Dairy Cattle Judging

General Appearance:

- straighter and stronger over the topline
- wider and stronger over the loin
- more level over the hooks
- freer of excess flesh over the rump
- smoother over the tail head
- longer from the hooks to the pins

- straighter from the withers to the tailhead
- sharper and cleaner at the withers
- moves more easily and strongly
- more correct set to the rear legs
- stronger and more correct in the pasterns
- carries herself with more style

Frame / Capacity:

- taller at the point of the withers
- more depth and openness in the rib
- deeper through the heart
- fuller through the crops and fore rib
- showed more spring of rib
- more capacious through the middle and mid section
- wider through the chest floor
- fuller in the shoulder
- shows more stretch and scale

Rump:

- higher and wider over the thurls
- wider and more level rump
- wider and more level from hooks to pins
- smoother over the tailhead
- tailhead sets neater between the pins

Feet and Legs:

- deeper in the heel
- stands on a stronger, straighter set of legs
- stands more squarely on her legs
- flatter and cleaner bone in the rear leg
- more correct set to the leg
- stronger on her pasterns
- tracks more correctly

The Mammary System:

- stronger attached udder, both fore and rear
- higher, wider, stronger rear udder attachment
- longer, smoother, firmer fore udder attachment
- more level in the udder floor
- more evenly balanced udder
- showed more desirable quality and texture of udder
- teats more uniform in size and shape
- more correct placement of the teats
- more desirable veining in the udder
- carries her udder higher above the hocks
- has a stronger median suspensory ligament

Dairy Character:

- more refined over the withers
- sharper over the withers
- cleaner and flatter down through the rump and the thighs
- longer and leaner neck
- blends more smoothly from neck to shoulders
- cleaner about the brisket and dewlap
- deeper and more refined in the flank
- more feminine head
- wider muzzle and stronger jaw
- more alert and brighter eye
- cleaner through the head and neck
- more substance and angularity
- shows more size and scale as desired by the breed
- shows more desirable breed character about the head
- stronger over the loin

Sample Reasons - Three-Year Old Holstein Cows

I placed this class of three year old Holstein cows 1, 2, 3, 4. This class easily divided itself into two pairs – 1 and 2, 3 and 4.

The top pair has definite advantages in strength, balance and body capacity. Looking more closely, 1 has a slight advantage over 2 in dairyness, is cleaner cut about the head and slightly longer in her neck. 1 also excels over 2 in the mammary system. 1 is higher and wider in the rear udder attachment and has a definite advantage in front teat placement.

Placing 2 over 3 was an easy placing. 2 has advantages in balance, body capacity and strength of front end. 2 is wider in the chest floor, fuller in her crops and fore rib and stands straighter on her front feet than 3. I admit that 3 shows more balance of rear udder, left to right.

In placing 3 over 4, I credit 3 with more substance and angularity throughout. 3 is straighter on top, fuller in the crops and smoother at the point of shoulder than 4. 3 has a big advantage in the mammary system. She is higher and wider in the rear udder, has a more level udder floor and is more correct in teat shape and placement.

These are my reasons for placing this class of three-year old Holsteins 1, 2, 3, 4.

Sections of the Judging Fact Sheets were adapted from the Alberta Judging Dairy Cattle material with the permission of Alberta Agriculture.

4-H Manitoba Contact Information

1129 Queens Avenue Brandon, MB R7A 1L9

Phone: 204-726-6136

Fax: 204-728-9040

Email: learns@4h.mb.ca

www.4h.mb.ca