

# SMALL RUMINANT PRODUCTION



## BREEDS AND BODY SCORE

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# BREEDS OF GOATS

1. Meat type
2. Dairy goats
3. Hair goat
4. Dual purpose goats – Jamnapari, Beetal
5. Goats with special capabilities

# KATJANG

- The local goats is said to have migrated/ brought in from China through Thailand hundreds of years ago.
- Estimated to be only about 25% of the total goats population in the country. The rest are said to be crossbreds with variable imported breeds.
- The shape and size resemble the goats found in the neighboring countries. eg: Thailand, Burma, Philippine, Indonesia and also resemble the Black Bengal goat of India.

# Characteristics:

- Small body-black in color-face is small and in triangular shape-ears are short and stretched to the side-has straight nose-horned-some are bearded.
- Birth weight: 1-2kg
- Weaning weight: 7kg
- Body weight gain: 40-60g/day
- Weight at 12month: 15-20kg
- Mature weight: 20-25kg
- Carcass: 45-53%
- Reproduction: can be mated early and kid anytime.
- Male: can be mated at 6-8 month of age
- Female: can produce a kid at 12-16 months.
- Gestation: 142-148 days
- Incidence of twinning: 30-49%
- Milk: 0.3 kg/day
- Height of withers: 55-65 cm
- Body length: 100-140 cm.

# Katjang (male)



# Katjang (female)



# Katjang goats



# JAMNAPARI

- Has a bigger and longer built and is taller than Katjang.
- Convex nose
- Horns are curved upward and backward.
- Has long hair at neck and perineal region.
- Hair are ruffled and has variable colors such as grey, black, yellowish.





# Jamnapari



# Peranakan Etawah (Indonesia)



# Boer goat

- Boer goats was developed in South Africa in the early 1900s for meat production. Also found in Kalahari, East Africa, Australia, USA and other countries.
- Has a fast growth rate and excellent carcass qualities, making it one of the most popular breeds of meat goat in world.
- Have high resistance to disease and adapt well to hot, dry semi-deserts.
- They commonly have white bodies and distinctive brown heads.
- They are noted for being docile, fast growth and high fertility rates. Reported to have superior mothering skills as compared to other goats.
- Mature Boer bucks weight between 110-135 kg (240-300 lb) and mature does between 90-100 kg (200-220 lb)

# BOER(male)



# BOER (female)



# Feral

- Wild goats- domestical and sold to Arab countries and Malaysia. Also found in Papua New Guinea, New Zealand, Africa and other countries.
- No specific breed (crossbred)- reared for meat, hide and skin.
- Birth weight: 3.0 kg
- Adult weight: 35-65 kg
- Carcass: 50-55%
- Kidding rate: 150-180%

# Feral



# ANGLO-NUBIAN

- Originated from England
- Has combination of breeds (Jamnapari x Zariby x English), the breed characteristics have been fixed.
- Imported by Philippines, Mauritius, West Indies, Malaysia etc. to cross with local goats to increase production of meat and milk.
- Very adaptable to tropical climate.
- Tall-Roman nosed.
- Broad ears drooping sideways.



# Characteristics:

- Short coat, variable colors such as brown, grey, black spots and combination of variable colors.
- Usually polled.
- Beard only present in the males.
- Birth weight: 3-3.5 kg
- Adult weight:(male)=70kg, (female)=50kg
- Height: (male)=89cm, (female)=76cm
- Good milker

# Anglo-Nubian



# Alpine

- Originated from Switzerland.
- A few types: British Alpine, Swiss Alpine, Rock Alpine, French Alpine, etc.
- Body is black or grey
- Legs, muzzle, ears, belly and below tail are white.
- Has two white stripes on the side of the nose.
- Nose is straight.
- Ears are stretched to the side, coat is short.
- For production of milk.
- Birth weight: 3-3.5 kg
- Adult weight: (male): 73kg, (female): 50 kg
- Able to produce 4.0 liters of milk per day.

# British alpine



50% Alpine 50% Katjang



# Toggenburg

- Originated from Switzerland-resembles British alpine, except that the body is brown instead of black.
- Birth weight: (male): 63kg, (female): 45kg
- Height: (male): 84cm, (female): 74cm
- Able to produce 3 liters milk per day.

# Toggenburg



# Saanen

- Originated from Switzerland.
- For production of milk-produce 500-1200kg in 250 days with average 3 liters of milk per day
- Has white coat and whole body is white.
- Pricked ears to the side- nose is straight and having thin tailed.
- Birth weight: 3-3.5 kg
- Adult weight: (male):73-86kg,(female): >50 kg
- Height: 76-89 cm
- Reproduction: Can produce 1.9 kids per birth



# Saanen



# Anggora

- Also called 'Cashmere'
- Found in India, Australia, New Zealand and a few other countries.
- Specially for the production of hair 'cashmere' for weaving into cloth.
- Meat is a secondary product.

# Angora



# Barbari Goat

- Small - sized goat found in India and Pakistan
- Colour – white creamy to golden with dark brown spots
- They are grown for meat

# Barbari (female)



# Barbari



# Beetal Goat

The Beetal is a breed used for meat and milk production.

Found in Punjab, Pakistan and India, the Beetal is usually red, black or pied with pendulous ears.

The males have long twisting horns. The breed is similar to the Jamnapari but smaller.

# Beetal (male)





# Beetal (female)



# Tennessee Fainting Goat (endangered species)

Also called **Myotic (wooden leg) goat**



- Endangered species of goat of the world.
- Estimated population in the world is less than 10,000.
- **CHARACTERISTICS**
  - Pretend to be 'dead' when threatened.
  - Will fall to the ground and remain stiff for a few seconds even at the clap of hands.

# Morocco goats

- In Morocco, goats climb on Argan trees in search of its fruits, which contains a small number of almond-shaped nuts
- After the nuts are excreted by the goats, local farmers use them to produce a rich, golden colored oil that has a nutty, buttery taste and is said to have medicinal properties.



# Sheep breeds

- Wool types
- Meat types
- Milk types

# MALIN

- Malin (**Malaysian Indigenous**) is found in Kedah, Kelantan, Terengganu dan Negeri Sembilan.
- Small sized, small face, straight nose and short ears(presence of vestigial ears).Horned and some are hornless.
- Also found in Thailand, Indonesia and Philippines.
- Birth weight: 1.4-1.5 kg
- Body weight gain: 45g/day
- Weight at 12 month: 16-20kg
- Adult weight: can attain 30kg
- Milk: 0.2 kg/day
- Twinning: 10%
- Carcass: 36-44%

# Cont...

- Height at withers: 46-64 cm
- Chest girth: 51-55 cm
- Body length: 71-74 cm
- Start to lamb: 22 month
- Gestation length: 150days
- Wool-course wool of no use (some shed the wool)

# Malin





# Local crossbreds

- The crossbred sheep initially could be found in the various Institutes/departments and land schemes such as FELDA, RRIM, GUTHRIE, LPP, Veterinary department and also MARDI.
- The crossbreds possess blood of local and imported exotic breeds at the level of 75/25, 50/50, 25/75 and other percentages.
- Birth weight ranges between 2.3 and 2.8.
- Weight at weaning between 11.5 and 13.5 kg.
- Weight at 12 month of ages between 28.0 and 33.0 kg.

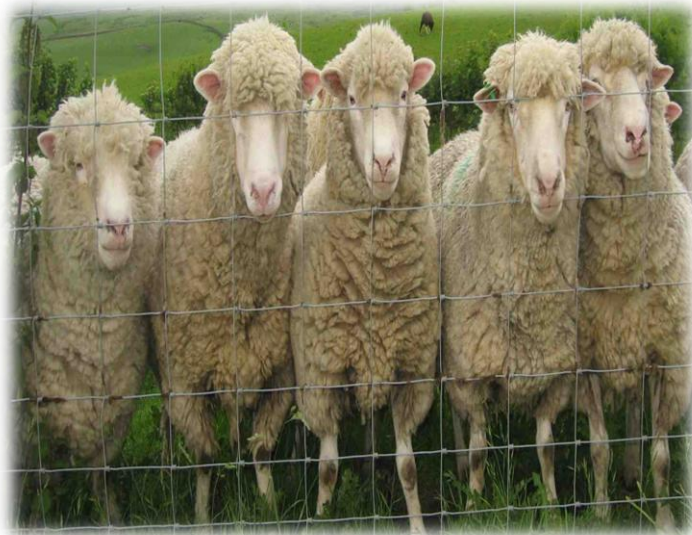
# Dorset(Dorset Horn, Poll Dorset)

- Originate from the district of Dorset, England.
- Medium sized with prolific lambing
- White faced.
- Pinkish skin.
- Has wool on the forehead and legs.
- Adaptable to warm climate.
- Has short and strong white wool.
- Birth weight: 2.8-3.2 kg.
- Adult weight: (male): 95-114 kg, (female): 73-82 kg
- Often produces twins and triplets.
- Lambing rates: 150 %
- Meat to bone ratio is 3.6:1

# Dorset horn



# Poll Dorset



# Suffolk

- For meat.
- Medium wool.
- It is a big breed and can reach 170 kg.
- Usually male:125kg; female:90kg
- Originates from England.
- Face is black, ears and legs are also black.
- Do not have wool on the face n legs.
- Lambing rate: 150%

# Suffolk



# Wiltshire Horn

- The **Wiltshire Horn** is a [breed](#) of [domestic sheep](#) originally from [Wiltshire](#) in southern [England](#) raised for [meat](#). The breed is unusual amongst native British breeds, for it has the unusual feature of [moulting](#) its short wool and hair coat naturally in spring, alleviating the need for [shearing](#). They are good mothers and have high fertility. The fact that they do not require shearing or [crutching](#) and do not suffer readily from [flystrike](#) is making them increasingly attractive to the commercial sheep sector, particularly as even pure-bred lambs can reach slaughter weight in as little as 16 weeks

# Wiltshire Horn





# Dorper Sheep

- This breed was developed by the crossing of a Dorset Horn x Blackhead Persian
- A Dorper is a fast growing meat producing sheep. The Dorper is an easy care animal that produces a short light coat of wool and hair that is shed in late spring and summer. It was developed in South Africa and is now the second most popular breed in that country.
- It has high fertility and maternal instinct, combined with high growth rates and hardiness. The breed has the characteristic black head as well as white heads (White Dorper).

## DORPER SHEEP



# ROMNEY OR ROMNEY MARSH SHEEP

The **Romney**, formerly called the **Romney Marsh** sheep but generally referred-to by the local farmers as the **Kent**, is a breed of [sheep](#) originating in England. The Romney is a "long-wool" breed

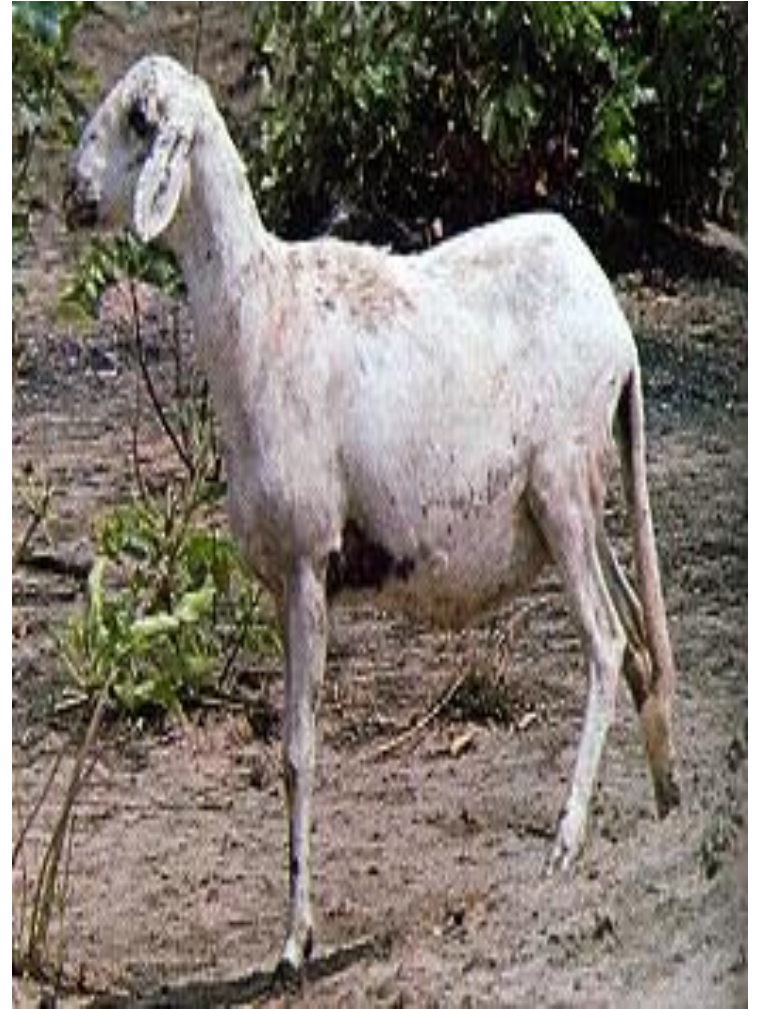
# Romney marsh



# Bali-bali (male)



# Bali-bali (female)



# Corriedale

- Large breed.
- For meat and wool production.
- Originates from New Zealand.
- Was created by crossing male Lincoln with female Merino and fixing the breed characteristics.
- Face is white.
- Good quality wool.
- Male achieve 85-114 kg; female 57-85 kg.

# Corriedale





# Border Leicester

- This breed originates from England.
- It is tall and Roman nosed.
- Wool is medium quality.
- Face and legs are woolless.
- Especially for production of medium quality wool.

# Border Leicester



## St. Croix

St. Croix possess many traits that are highly desirable to the modern shepherd. Remarkable parasite resistance and excellent lamb production have been supported by research. Hair sheep have been bred for meat, not wool, so St. Croix is an "easy care" breed that requires no shearing.

# St.Croix (male)



# St.Croix (female)



# Barbados black belly

- This breed originates from Africa and its produced from African hair sheep crossed with European wool sheep.
- This breed has no wool on the body but sometimes has slight wool especially in neck area and under the chin.
- It has brownish, yellowish and/or black colors under its neck until behind its hind legs.
- It is highly resistant to internal parasites and well adapted to tropical climate.
- The buck can reach up to 57 kg and doe 45 kg.

# Barbados black belly



# Santa Ines

- This breed originated from Brazil
- It is classified as 'Hairy sheep'.
- For production of meat.
- Skin maybe black, white or brown.
- High meat yielder.
- Great demand for its size which is bigger than most local sheep.
- Very adaptable to tropical environment.



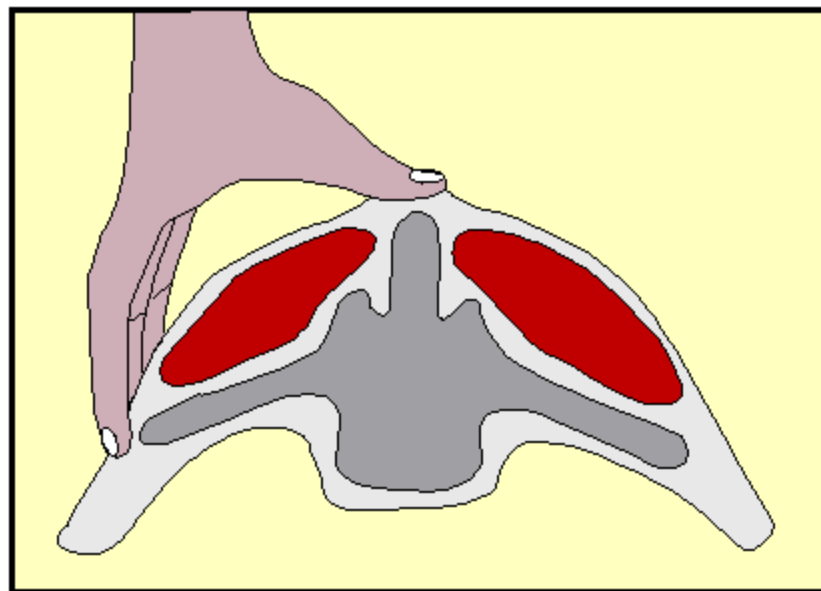
# Santa Ines



# East Friesian Sheep - Holland



# BODY CONDITION SCORING (BCS)



# **AS YOU ENTER A GOAT / SHEEP FARM, HOW CAN YOU EXPLAIN THE FOLLOWING?**

- A.WHY SOME OF THE ANIMALS ARE VERY THIN**
- B.WHY SOME ARE OBESE**
- C.WHY LACTATING ANIMALS ARE THIN**
- D.ARE THESE ANIMALS HEALTHY?**
- E.WHAT SHOULD BE CONSIDERED AS 'GOOD' BODY CONDITION?**
- F.IS THERE ANY SYSTEM TO GRADE THE BODY CONDITION OF SUCH ANIMALS?**

## Why Body Condition Score?

Body condition scoring (BCS) is a means of evaluating an animal based upon muscle and external fat cover.

BCS measures the amount of soft tissue (meat and fat) over the bones of the animal ?- not of the size of the animal

BCS is a simple, useful procedure that producers can use to make management decisions regarding the [health of their animals and the quality and quantity of feed needed to optimize performance](#).

If animals are in poor body condition, the animal may be underfed or have a disease problem. If animals are in too good of a body condition, the amount of feed can be decreased.

Body condition will fluctuate during changes in feed supply. Fluctuations also take place when the animals are dry, pregnant and lactating.

By evaluating animals, producers can prevent drastic losses in production.

But, visual appraisal is unreliable and is easily confused by gut-fill, length of fleece and pregnancy.

## **How to assign Body Condition Score**

Scoring sheep and goats is done using a BCS ranging from 1.0 to 5.0, with 0.5 increments.

An animal of BCS 1.0 is extremely thin with no fat reserves and a BCS of 5.0 is a very over-conditioned (obese) animal.

In most cases, healthy sheep and goats should have a BCS of 2.0 to 3.5.

A BCS below 2.0 indicates a management or health problem.

A BCS of 4.5 or 5 is almost never observed under normal management conditions.

The following process may be followed during scoring:

**Feeling the spinous process:**

Feel the spinous process in the center of the sheep/goat back behind the last rib and in front of the hip bone and try to rank the animal based on the answers you give to the following question. Are the tips sharp or rounded?

**Assessing the loin muscle**

Feel the fullness of muscle and fat cover on either side of the spinous process (either side of the backbone) and determine if the ridge of the spine is above the level of the muscle. Is the loin muscle shallow, moderate or full?

**Feeling the transverse process**

Feel for the tips of the transverse process. Is it sharp or smoothly rounded?

How far will the tips of your finger go under the transverse process?

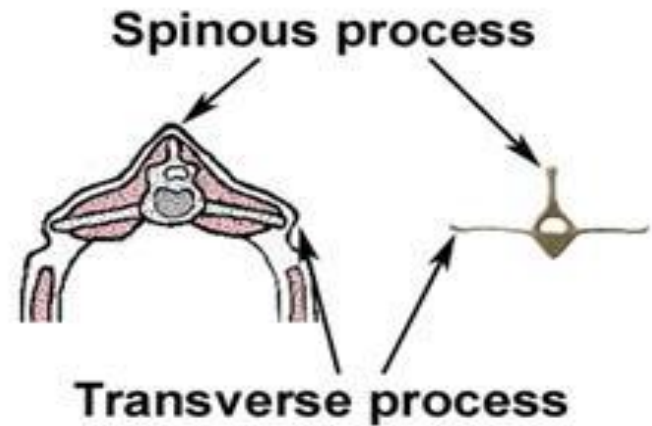
## Steps in assessing body score

To assign a BCS, one must touch and feel the animal.

In sheep, the lumbar region is the principal site for BCS determination while in goats the rib cage and sternum also play a role.

### Note:

1. Backbone – spinous process
2. Short ribs – transverse process
3. Eye muscle – loin muscle





SCORE 0

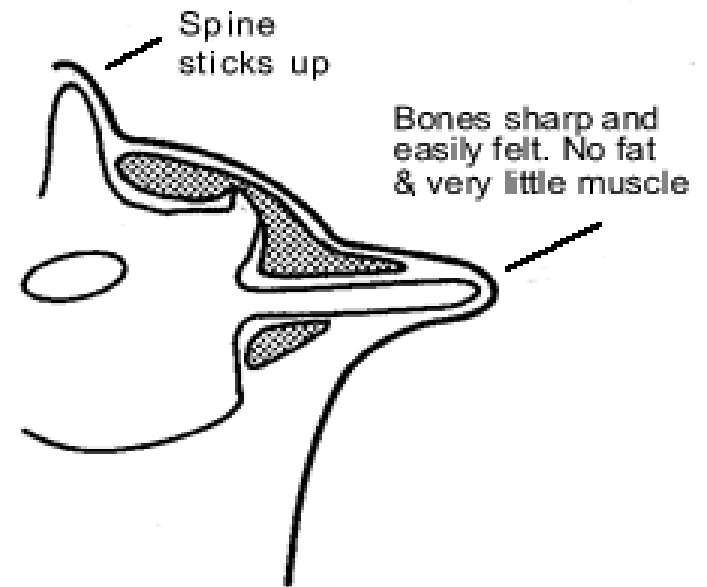
The animal is emaciated, in extremely poor condition and very weak (near death). The animal has no fat cover, the surface of the eye muscle feels hollow when the thumb is run down from the backbone to the end of the short ribs and there is little tissue between the spinal processes of the backbone or short ribs.

## SCORE 1 : EXTREMELY EMACIATED

SP - Prominent and sharp

TP - Ends are sharp and easy to press between, over and around

EM - Thin, the surface tending to feel hollow

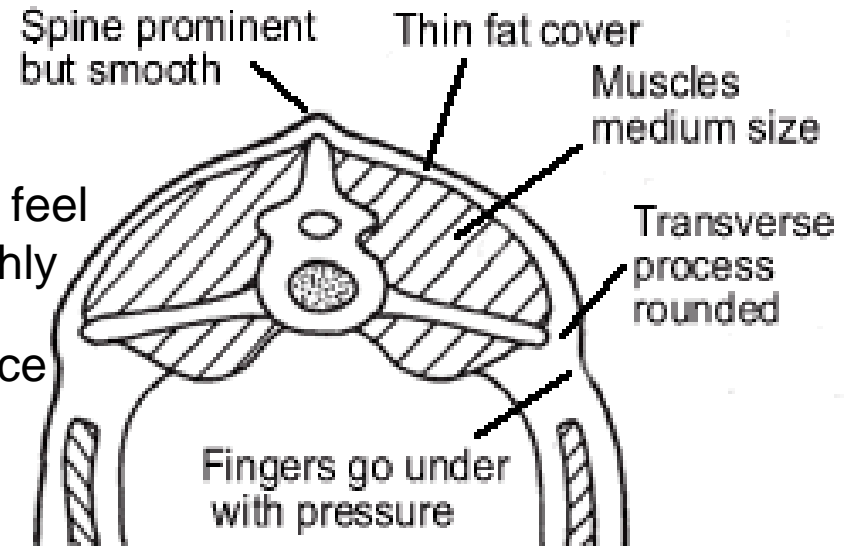


## SCORE 2 : LEAN

SP - Prominent but smooth

TP - Smooth well-rounded ends ?- can feel between, over and around each smoothly

EM - Reasonable depth with the surface tending to feel flat

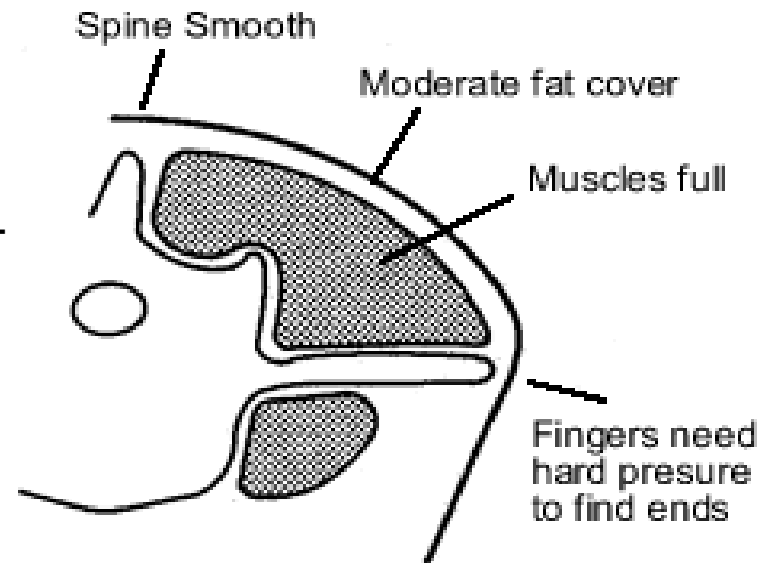


## SCORE 3 : GOOD CONDITION

SP - Can be felt but smooth and rounded

TP - Ends are smooth and well covered ?-  
firm pressure necessary to feel under  
and between short ribs

EM - Full and rounded

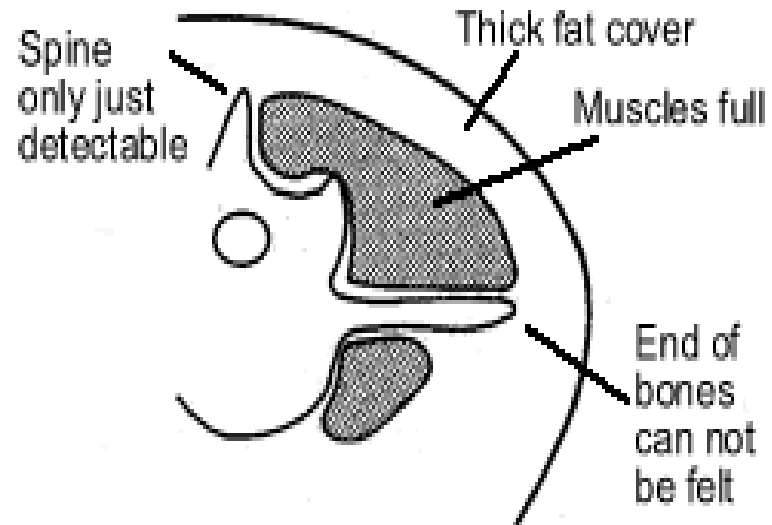


## SCORE 4 : FAT

SP - Detectable with pressure on the thumb

TP - Individual short ribs can only be felt with firm pressure

EM - Full with a covering layer of fat

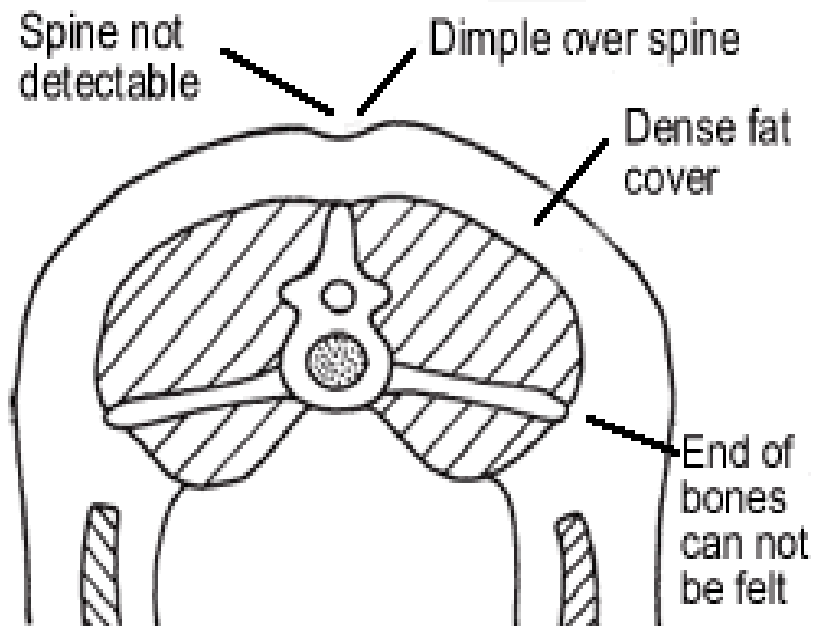


# SCORE 5 : GROSSLY OBESE

SP - Can be felt with firm pressure

TP - Cannot be felt even with firm pressure

EM - Muscle cannot be felt due to a thick layer of fat



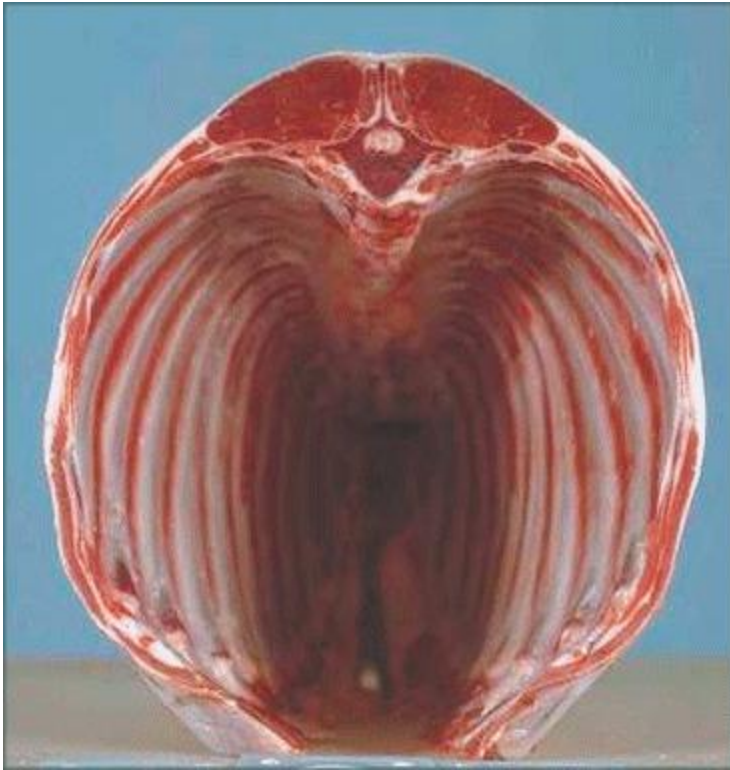
**CARCASS FINISH TO BCS**

Carcass finish is assessed as a fat score which is directly related to the condition score of the live animal - carcass fat score 3 is equivalent to condition score 3.

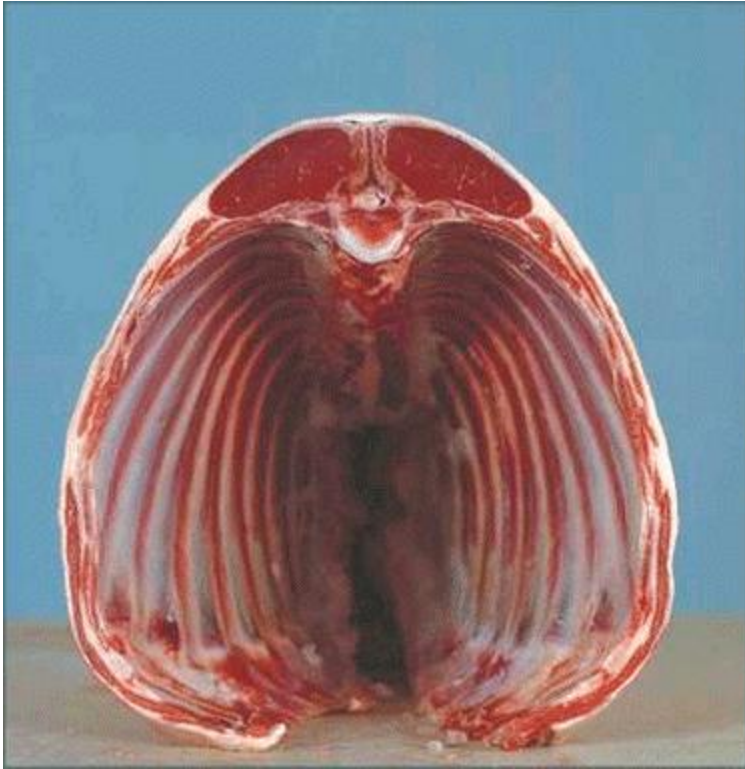
In both the sheep and goat meat industries body condition scores of 2 to 3 are desirable (well finished but not fat).

Condition score 1 animals are unfinished; that is, muscle development is poor, while animals in condition scores 4 and 5 are overfat and unacceptable to all known markets.





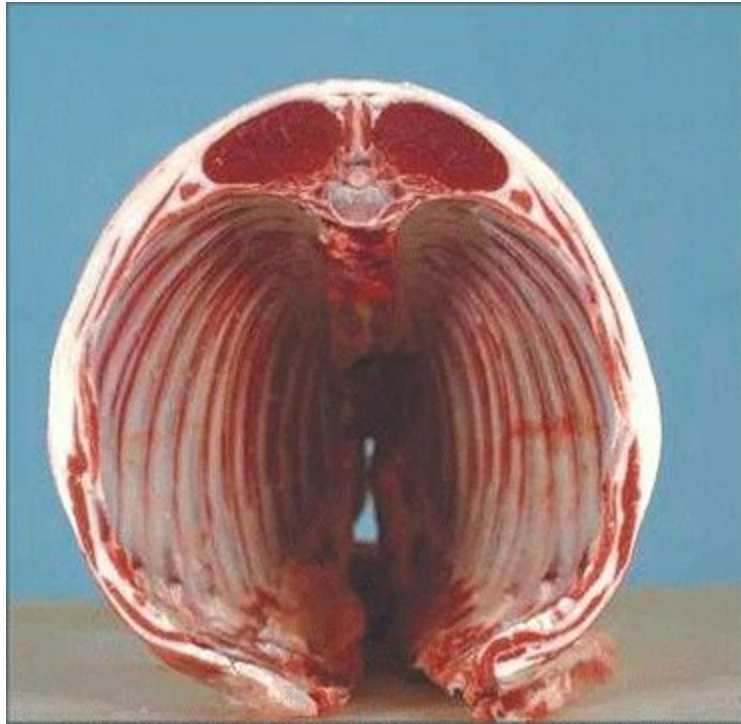
Score 1 - 13<sup>th</sup> rib



Score 2 - 13<sup>th</sup> rib

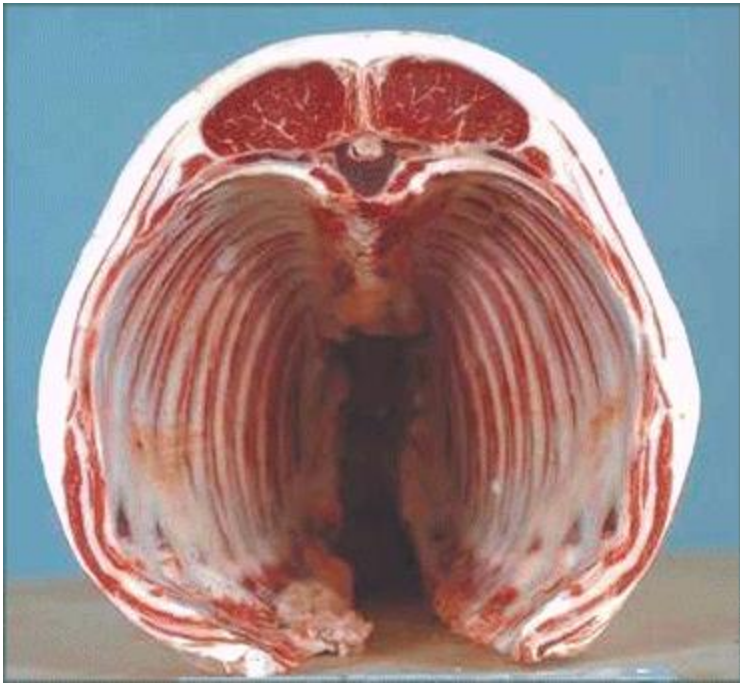


*Score 3 - 13<sup>th</sup> rib*



*Score 4 - 13<sup>th</sup> rib*





*Score 5 - 13<sup>th</sup> rib*

## Changes in Body Condition Score

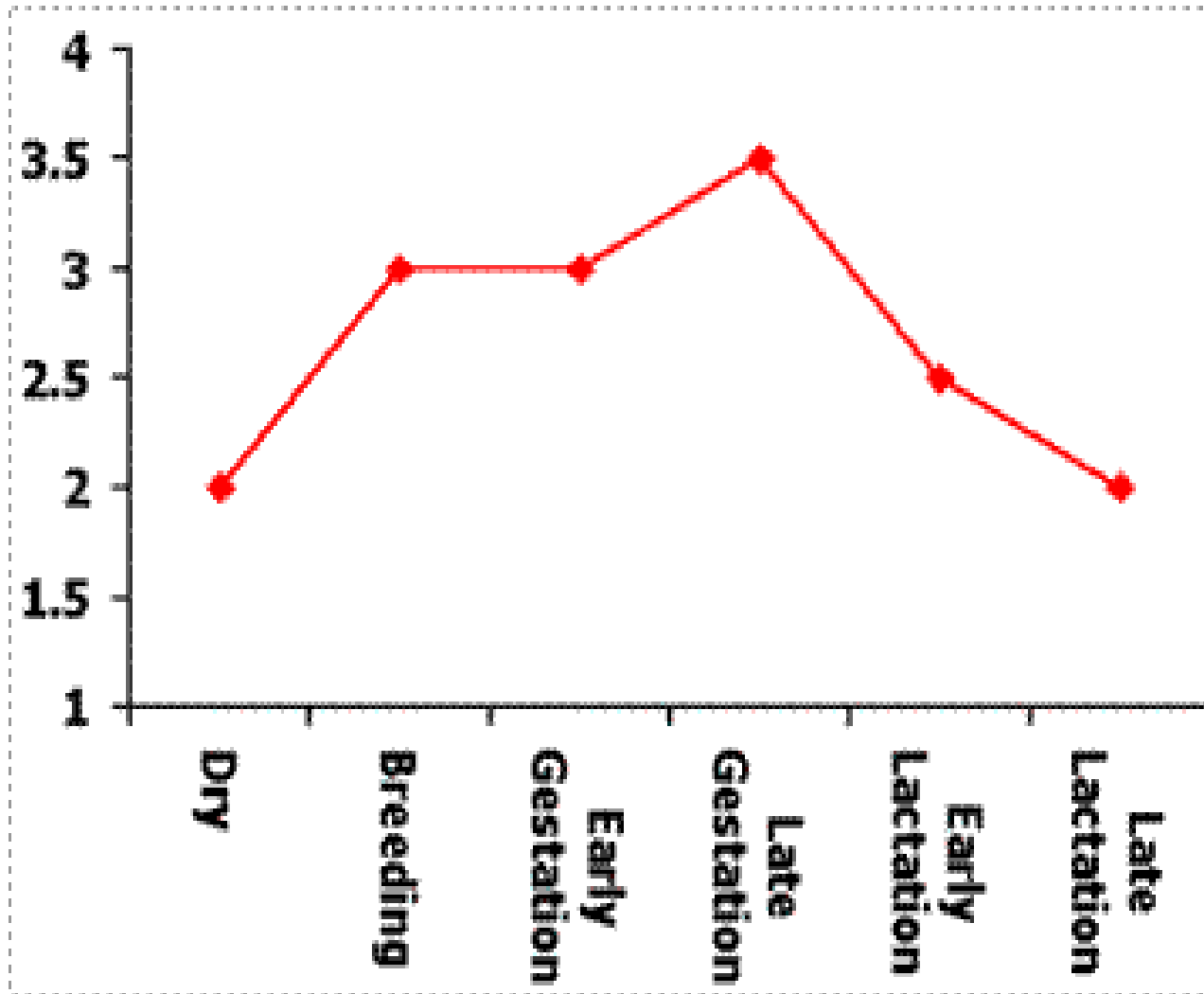
It is important to note that BCS could vary according to the physiological status of the animal. An example which shows such a change is depicted below for ewes and does

At the time of mating does/ewes should have a score of 3 for optimum result with a range of 2 to 3 being acceptable.

Pregnant females need to be watched closely to make sure they are close to a score of 3 throughout this period.

After the lambs/ kids are born and during lactation, it is normal for condition scores in ewes/does to reduce. However, make sure they do not drop from a score of 3 to a 2 or 1 too quickly.

Lactation is demanding in terms of nutrient requirements. If lactating animals are not fed properly during this period, body reserves could be mobilized resulting in poor body condition. Lack of attention during this period will impact the growth of the nursing lamb/kid and milk yield.



Expected BCS changes throughout a doe + ewe's production cycle.

## Summary

Body condition scoring is a useful procedure for routine decision making on the management of sheep and goats.

Producers can use the technique to improve the profitability of their sheep and goat farms. Body condition scoring is a simple procedure of evaluating different parts of the animal and giving scores.

Perfection in body condition scoring comes with experience and practice.



# the **Parts** of a goat

