SHEARING OF WOOL

- Wool shearing practices vary in different regions.
- However, shearing is mostly practiced twice a year in spring and autumn seasons.
- Sheep are washed at least two days before shearing in order to remove dirt and grease which hinder shearing.
- Machine shearing is more efficient than manual shearing with scissors as it saves time, avoids injury to the sheep and “second-cuts” of staples.

- Some producers prefer to shear pregnant ewes before lambing.
- This will make lambing and nursing easier.
- Shearing before breeding in summer season tends to increase the heat loss from the body and cools the ewe and ram.
- Thus inducing estrus in the ewe and stimulating spermatogenesis in the ram.

Procedure :-

1. The sheep must be held properly in a comfortable position to prevent its struggling during shearing.
2. Most shearers use the method in which the sheep is set upon its rump and supported firmly between the shearer's knees.
3. The skin should be stretched so that it is smooth in the area being shorn.
4. Wool fibres should be cut only once next to the skin to avoid "second cuts" or short fibres of reduced value.

5. Belly wool, leg wool and tags have a lower value and should be kept separate from the higher-quality wool from the back, neck and sides.
6. The fleece should be removed in one piece so that it will remain together when tied.
7. The fleece should be tied only with paper wool twine to prevent contamination.

- **Precautions :-**

1. Cutters and combs should be sharp; and they should be cleaned, resharpened and lubricated after each job of shearing.
2. The shearing floor should be clean and free of straw or chaff. It should be swept clean of second cuts and manure tags after each shearing.
3. Sheep must be dry before shearing. Wet wool tends to heat up and become discolored.
4. Be extremely careful when shearing around the udder, scrotum, sheath, loose skin of the flank and hamstring.

5. Never lift the unshorn fleece with the left hand and attempt to shear it off. This lifts the skin as well, which will be cut in shearing. Instead, use your left hand to stretch the skin away from the shearer.
6. Use a shearing glove on the non-shearing hand to protect yourself against injury from the handpiece.
7. Keep the electric cord of the shearer behind you so that it cannot be cut, thus preventing electric shock.

8. Do not rush through the shearing procedure in an attempt to increase speed.
9. The appearance of the shorn sheep (which should have a minimum of cuts) and the condition of the fleece are as important as speed.
10. An experienced shearer can shear a sheep in 5 minutes or less, which works out to about 100 sheep per day.
11. Newly shorn sheep should be protected from the cold and rain until they have had time to regrow some wool cover.

Grading quality of wool

- The potential range of end products that wool may be used for is dictated by many qualities, including fineness, clean wool yield, length, color, and uniformity.
- Fineness, or grade, is of primary importance in determining market value of raw wool.
- Finer (smaller diameter) wools usually are associated with more expensive, lighter weight fabrics, while coarser-fibered wools (larger diameter) usually are used in bulkier sweaters, blankets, and carpets.

Parameters of judging wool quality

1. Fineness/Grade : In general, grade refers to the average diameter or thickness of the fibers.

- Three systems of wool grading are commonly used

a. American or Blood system;

b. English or Spinning Count system;

c. Micron system.

- All three systems are measures of average fiber diameter and can be used interchangeably as shown in the table below
- but the micron system is the system used internationally and preferred by wool buyers and manufacturers.

Type of Wool	American or Blood Grade	English or Spinning Count Grade	Microns (average fiber diameter)
Fine	Fine	Finer than 80s	Under 17.70
Fine	Fine	80s	17.70 - 19.14
Fine	Fine	70s	19.15 - 20.59
Fine	Fine	64s	20.60 - 22.04
Medium	1/2 Blood	62s	22.05 - 23.49
Medium	1/2 Blood	60s	23.50 - 24.94
Medium	3/8 Blood	58s	24.95 - 26.39
Medium	3/8 Blood	56s	26.40 - 27.84
Medium	1/4 Blood	54s	27.85 - 29.29
Medium	1/4 Blood	50s	29.30 - 30.99
Coarse	Low 1/4 Blood	48s	31.00 - 32.69
Coarse	Low 1/4 Blood	46s	32.70 - 34.39
Coarse	Common	44s	34.40 - 36.19
Very Coarse	Braid	40s	36.20 - 38.09
Very Coarse	Braid	36s	38.10 - 40.20
Very Coarse	Braid	Coarser than 36s	Over 40.20

The classification of Indian wool as per diameter

Sl. No.	Type	Mean fibre diameter (μ)	
1.	North India superior clothing white	≤ 30	
2.	North India clothing white	30 - 42	
3.	North India rug white	43 - 46	
4.	North India carpet type	≥ 46	
5.	South India blanket type	43 - 46	
6.	South India tannery type	≥ 46	

2. Staple length : It is the total length of a fibre in its natural condition. It is obtained by measuring the natural staple without stretching the crimps out of the fibre.
3. Fibre length : It is the total length of a wool fibre after removing the crimps or waviness by straightening it.
4. Crimpiness : It refers to the waviness of the wool fibre.

- Its number varies from 2 to 12 per cm depending upon the quality.
- It is a valuable property in spinning and increases the elasticity of the yarn and fabric.
- Crimps are more pronounced in fine wool.

5. Elasticity : The property of wool fibres to return to their original or natural form after being stretched or compressed. Wool is quite elastic, and therefore, resists wrinkling, bagging and tearing.
6. Kemp : It is a chalky, white, lusterless and dead fibre growing with wool which resists dyeing. It should be rejected.
7. Heterotype : Fibres which occur in the fleeces of indiscriminately bred sheep. They show, at different parts of their length, the physical structure and characteristics of both wool and hair.

8. Lustre : It is the ability of wool to reflect light.
   - Wool with lustre, when dyed, has a brighter appearance than wool without lustre.
   - Coarse wool with fewer scales has more lustre than fine wool because of smoothness of fibre.
9. Strength : It is the property of wool fibre to undergo processing without breaking. Wool fibre and fabrics are usually strong and durable.

10. Conductivity : Wool is one of the best fibres for retaining body heat and also for keeping external heat out. This is because of its insulating nature i.e. it is a poor conductor of heat.

1. Dyeing properties : Wool is one of the easiest fibres to dye because dyes penetrate the fibre easily and remain permanently.
2. Softness : Softer fibres consist of numerous, small scales which fit over one another loosely and produce fabrics which are softer to touch.

3. Inflammability : Wool is slower to burn, and on burning, it gives off a pungent odour and forms a bead when burning ceases.
4. Action of chemicals : Alkalis weaken the wool and may even dissolve it completely. Dilute acids do not act upon wool, and wool is generally dyed with acid colours.
5. Moisture : Wool readily absorbs and gives off moisture. Under normal conditions, the moisture content varies from 12-17 %.