

ECONOMIC TRAITS OF CATTLE & BUFFALO



Introduction :

➤ *Economic traits are those characters and feature of animal in which man has interest and have economic significance .*

or

➤ *The economic trait are typically those that affect either the income obtained or the costs of production .*

➤ *The livestock industry is continuously gaining importance with increasing demands of livestock produce .*

❖ Classification

- Milk Production and associated traits
- Reproduction trait
- Growth traits
- Draft capacity
- Disease resistance and heat tolerance

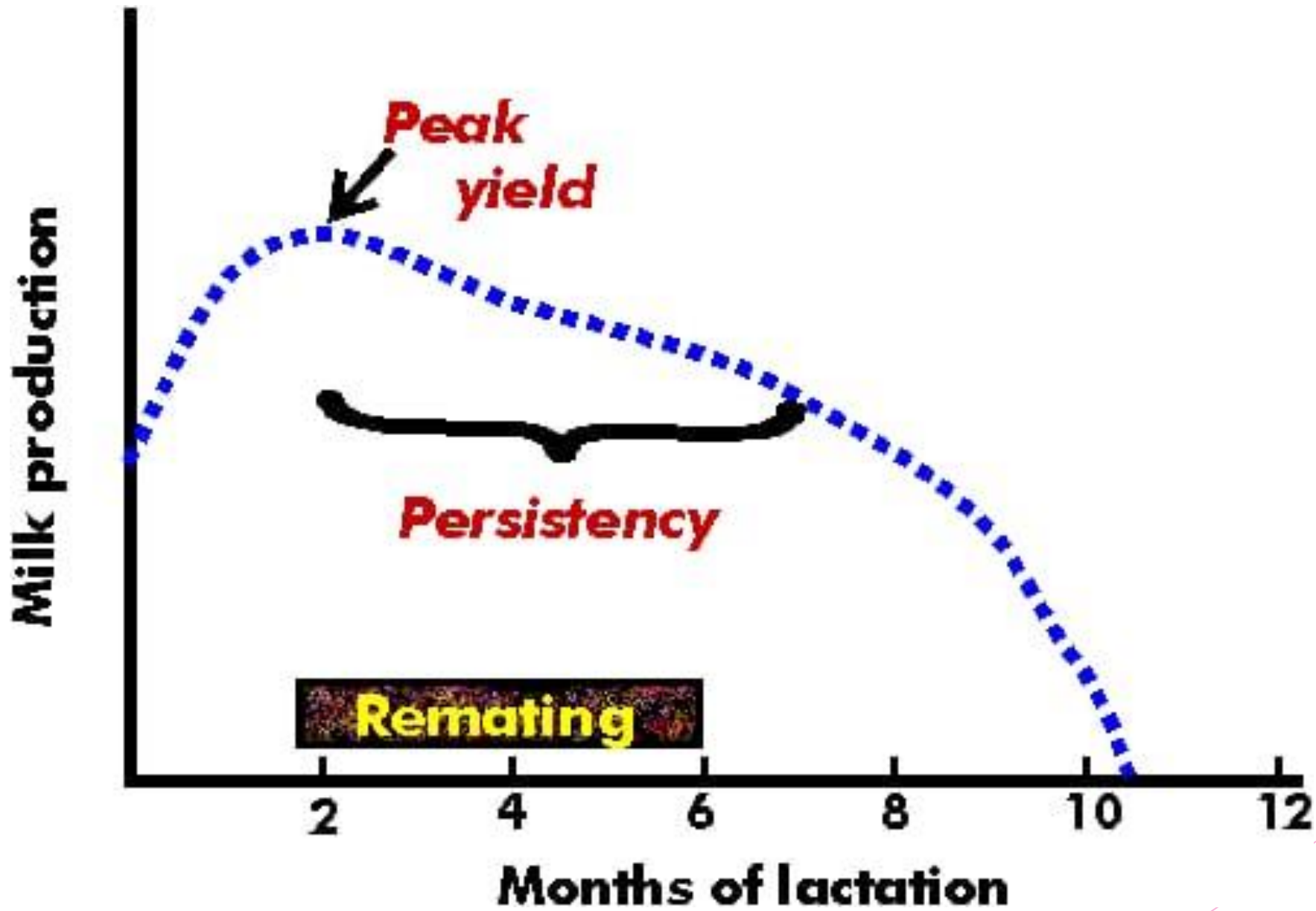
Milk production and associated traits

- Importance in case of dairy animals
 - Vary between breeds and individuals of some breeds
 - Other factors can also influence the milk production and its composition like nutrition , age, season .
1. Lactation length : The length of milk producing period after calving is known as lactation period .
- The milk production of dairy animal will be less if lactation length is shortened

Lactation length	days
Most indigenous cattle breeds	230 – 306
Buffaloes	228 - 350
Exotic breeds (HF , Jersey)	279 - 411
Standard for cattle	305
Standard for buffalo	310

2. Lactation yield : Milk yield in kg from date of calving to date of drying .

Animal	Avg. lactation yield
Sahiwal	1800 - 2800 kg
Red sindhi	1100 – 2200 kg
Gir	1200 – 1800 kg
cross breed cattle	2000 – 3100 kg
Jersey	3000 – 4000 kg
HF	6000- 7000 kg
Buffaloes	1000- 2500 kg



- *Lactation yield is still lower in dual purpose breed like Haryana , kankrej and much lower in drought breeds than indigenous milch breeds .*

3 . Peak yield : -

- *During lactation period the animal reaches maximum milk yield per day within 4 – 6 week after calving which is called peak yield .*
- *For high level of lactation yield this peak yield should be maintained for longer period as far as possible which is called persistency*

- *High persistency is necessary to maintain high level of milk production .*

4 . Concentration of milk solids :

- *When milk is solid in a formal market the price paid per kilogram may be adjusted based on concentration of milk solids .*
- *The milk of buffaloes is paid more than cow due to its greater concentration of milk solids .*

5 . Efficiency of feed utilization and conversion into milk :

- *The animal which takes in more feed utilizes and efficiently converts it into the milk is considered better during selection .*

6 .Lactation yield in 305 days : *Total milk yield at 305 days of lactation length .*

7 .Lactation yield in 180 days : *Total milk yield at 180 days of lactation length.*

8 . Milk yield per day of lactation :
$$\frac{\text{total lactation yield}}{\text{total lactation length}}$$

Reproduction traits

- ▶ *Reproduction is closely related with production*
- ▶ *Consistent reproduction is important for dairy cattle and buffaloes because daily yield is highest in the months immediately following parturition and because longer dry period resulting in greater costs for maintenance without any income .*
- ❖ *Traits associated with reproduction*
 1. *Service period : It is a period between date of calving and date of successful conception .*
 - ▶ *The optimum service period helps the animal to recover from the stress of calving and also to get the reproductive organs back to normal*

- ▶ *If the service period too prolonged the calving interval is also prolonged , less no of calving will obtained in her life time .*
- ▶ *If the service period is too short the animal will become weak and persistency of milk production is poor due to immediate pregnancy .*

Range of service period	Days
Most of the milch and dual purpose Indian cattle breeds	138 – 170
Cross breed cattle	105 – 122
Buffalo	193 – 236

2.Dry period : *It is the period from the date of drying (stop of milk production) to next calving .*

- *A minimum of 2 – 2.5 months dry period should be allowed to compensates for growth of foetus .*
- *If the dry period is too short the animal suffer from stress and in next lactation , the milk production drops substantially and also gives weak calves .*
- *On the other hand if the dry period is too long it may not have that much effect on increasing milk yield in the next lactation , but it decrease the production in the present lactation .*

Types of animals	No of days
1 .Sahiwal , Red sindhi , haryana, kankrej	130 - 160
2 . Cross breed cattle	90 - 94
3 . Buffalo	wide variation
4 . Non descript cattle	205

3 . Calving interval : This is the period between two successive calving .

- It is more profitable to have one calf at yearly interval in cattle and at least one calf for every 15 months in buffaloes .
- If the calving interval is more , the total no of calvings in life time will be decreased and also total life production of milk decrease
- Calving interval = lactation period + dry period
service period + gestation period

Avg. calving intervals are

- Cross breed cow : 12 to 13 months
- Buffalo : 13 to 15 months

4 . **Reproductive efficiency**

- The reproductive efficiency means the more number of calves in life time, so that life time production is increased .
- The reproduction or breeding efficiency is determined by the combined effect or hereditary and environment .
- Reproductive efficiency has generally a low heritability value indicating that most of the variation in this trait are due to non-genetic factors .

Growth traits

- ▶ Body weight
- ▶ Height
- ▶ Body length
- ▶ Chest girth
- ▶ Rate of gain in body weight will be higher during early age .
- ▶ Absolute body weight gain with age can be calculated by taking weight at weekly interval .
- ▶ The rate of growth has great effect on future productivity .

Draft capacity

- ▶ Animal with long legs straight barrels and tight skin are generally assumed to be stronger and thus favoured for draft purpose.
- ▶ The *Bos indicus* males with large humps and well developed dewlaps are preferred because of more dissipation of heat due to a larger surface area & more body reserves for drought period
- ▶ Ox used for pulling the bullock cart and ploughing the fields.
- ▶ Ox are also used for transport purpose and gives employment .





Disease resistance and heat tolerance

- It is another trait of economic importance against specific diseases like mastitis which is difficult to control .
- Indigenous breeds are more resistant to mastitis than exotic breeds.
- Indigenous animals have better heat dissipation mechanisms.
- These characteristics also have great importance in economic milk production.
- Cross breeding with yielding exotic breeds will help to produce high yielding and disease resistant hybrid animals.
- ▶ Zebu cattle are more resistant to external parasites.

A vibrant tropical beach scene. In the foreground, a weathered blue wooden boat rests on a pristine white sandy beach. The beach is dotted with shadows cast by palm trees. In the middle ground, the turquoise ocean meets the shore with gentle waves. In the distance, a small, lush green island with several palm trees sits on the horizon under a deep blue sky with wispy white clouds. The overall atmosphere is serene and idyllic.

Thank You
FOR YOUR ATTENTION