

Traits of Economic Importance and Their Inter-Relationship

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The various economic characters in Dairy Cattle and Buffalo management are

- ✚ Lactation yield
- ✚ Lactation period
- ✚ Persistency of yield
- ✚ Age at first calving
- ✚ Service period
- ✚ Dry period
- ✚ Inter calving period
- ✚ Reproductive efficiency
- ✚ Efficiency of feed utilization
- ✚ Disease resistance.

1. Lactation yield:

The lactation yield in a lactation period is known as lactation yield. The lactation yield in Indian breeds is very low compared to exotic breeds. This is dependent on no. of calving, frequency of milking, persistency of yield. Normally in dairy cattle 30 - 40 % increase in milk production from first lactation to maturity is observed. After 3 or 4 lactations, the production starts declining.

For comparison of milk yield of different breeds and animals the milk yield should be converted into fat corrected milk (FCM). $4\% \text{ FCM} = 0.4 \text{ total milk} + 15 \text{ total fat}$. After parturition, the milk yield per day will be increased and reaches peak within 2-4 weeks after calving. This yield is known as peak yield. The maintenance of peak yield for more time is importance for better milk production. The lactation period in Indian breeds is low and so the production is also less and conversion.

2. Lactation period:

The length of milk producing period after calving is known as lactation period. The optimum lactation period is 305 days. The milk production will Breeding of dairy animals and



farm records will be less, if this period is shortened. Indian breeds will have less lactation period, but in some breeds this period is more with very little milk production.

3. Persistency of Milk yield:

During lactation period the animal reaches maximum milk yield per day within 2-4 weeks which are called peak yield. For high level of lactation yield, this peak yield should be maintained for longer period as far as possible. The maintenance of peak yield for long period is known as persistency, slow decrease in dairy milk yield after reaching peak yield in necessary. High persistency is necessary to maintain high level of milk production.

4. Age at first calving:

The age of the animal at first calving is very important for high life time production. The desirable age at first calving in Indian breeds is 3 years, 2 years in cross breed cattle and 3 1/2 years in Buffaloes. Prolonged age at first calving will have high production in the first lactation) but the life time production will be decreased due to less no of calving. If the age at first calving is below optimum, the calves born are weak, difficulty in calving and less milk production in first lactation.

5. Service period:

It is the 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 back the reproductive organs back to normal. For cattle the optimum service period is 60-90 days. If the service period is too prolonged the calving interval prolonged, less no. of calving will be obtained in her life time and ultimately less life time production. If the service period is too short, the animal will become weak and persistency of milk production is poor due to immediate pregnancy.

6. Dry period:

It is the period from the date of drying (stop of milk production) to next calving. When the animal in pregnancy, before next calving. The animal should be given rest period to compensate for growth of foetus. A minimum of 2 – 2 ½ months dry period should be allowed). If the dry period is not given or too low dry period, the animals suffer from stress and in next lactation, the milk production drops substantially and also it gives weak calves. On the other hand, if the dry period given is too high, it may not have that much effect on increasing milk yield in the next lactation, but it decreases the production in the present lactation.

7. Intercalving period:



This is the period between two successive calving. It is more, profitable to have one calf yearly in cattle and at least one calf for every 15 months in buffaloes. If the calving interval is more, the total no. of carvings in her life time will be decreased and also, total life production of milk decrease.

8. Reproductive efficiency:

The reproductive efficiency means a greater number of calves during life time, so that total life time production is increased, the reproduction or breeding efficiency is determined by the combined effect of hereditary and environment. Several measures of breeding efficiency like number of services per conception, calving interval, and days from first breeding to conception are useful.

Reproductive efficiency has generally a low heritability value indicating that most of the variations in this trait is due to non-genetic factors. In adverse environmental conditions, the poor milk producing animals may not be much affected compared to high effect in high milk yield.

9. Efficiency of feed utilization & conversion into milk:

The animal should take the feed more and utilize efficiently to convert into the milk.

10. Disease resistance:

Indian breeds are more resistant to majority of disease compared to exotic cattle. Cross breeding helps to get this character.