

## FEEDING STRATEGIES FOR DAIRY CATTLE

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The cost of feeding is the main factor which affects the cost of production in all livestock farming. Our aim should be directed towards reducing the cost to the minimum possible level. The cost of feed can be manipulated only to certain extent as this factor is depended on the availability of raw materials. Kerala depends mainly on other states for most of the raw materials for the compounded feed. Most of the farmers feed their animals with commercially available compounded feed either as pellet or mash. By including locally available unconventional feeds, the cost of feed can be reduced. The unconventional feeds such as coffee husk, cocoa pod, jack fruit seed, pepper waste, tea waste and such other items can be included at a level of 15-20 % in the concentrate mixture.

The calves up to the age of six months should be fed calf starter since the rumen development will be completed only by 5-6 months. Calf can utilize non-protein nitrogenous substances like urea efficiently only by 5-6 months of age. So adult cattle feed (which invariably contains urea) should be fed to calves only after six months of age. Incorporation of urea in the feed in the pre-ruminant stage leads to deficiency of protein during the early stages of life (results in stunted growth), delay in the development of reproductive organs, delay in puberty and sexual maturity and a total reduction in the effective productive life. Most of our farmers either due to ignorance or due to non-availability of calf starter, feed their young calves with cattle feed (invariably containing urea) resulting in stunted growth. This improper feeding of calves might be the main contributing factor for the delayed age at first calving in our state (65 months, MILMA report, 2000).

### Feeding of Calves

As per BIS specification calf starter should contain 23-24 % CP and 65-70 % TDN. A calf should be fed milk up to the age of 3 months ( Package of practices, 2004). Since the cost of milk is increasing it is not practically possible for the farmers to adopt this method of feeding milk. In such situa-

tions, the calves should be fed at least 2.0-2.5 liters of milk per day during the first month and at a reduced level during the second month. Good quality calf starter should be introduced from second week onwards.

A problem faced with calf feeding is the lack of availability of calf starter. At present calf starter is not produced commercially in the State. Lack of availability of good quality dried fish is another important problem in the preparation of calf starter. Unsalted dried fish is included in calf starter as a source of animal protein. Both these problems can be overcome by preparing an all vegetable calf starter supplemented with amino acids like lysine and methionine (commercially available as Lysomix and Methiomix). This can be prepared in the farmer's premises itself as the quantity required is very less.

### Example of an all-vegetable calf starter

Maize- 31.5 parts, Wheat Bran- 22 parts, Soya bean meal- 44 parts, shell grit-2 parts and salt 0.5 parts. L-Lysine-230g, DL- Methionine- 120g, Trace mineral mixture-100 g and Vit. $AB_2D_3$  K-8 g per 100 kg of feed.

### Feeding of Dairy Cattle

The compounded feed for adult cattle should contain 20-22 % CP and 60-70 % TDN as per BIS specification. The important points to be noted while feeding dairy cattle are

1. The peak Dry Matter Intake (DMI) in dairy cattle will be achieved only by 2-3 months after calving while the peak production is obtained within one month of lactation. So during early stages, quality rather than quantity of feed is important.

2. Most of the dairy cows in early lactation are deficient in energy because of the above reason and increasing the quantity will result in excess protein and related reproductive and hoof problems. In order to meet the nutrient requirements especially that of energy during early stages, energy supplementation of the compounded feed by adding 0.5 -1 kg ground grain like maize, dry tapioca can be

adopted. It will be better to add 6g sodium bicarbonate per kg of feed to avoid acid indigestion

3. Feeding of green fodder (25-30 kg daily) is beneficial. Inclusion of roughage (50-60% or daily ration) is a must for proper microbial digestion in rumen. Higher level of concentrates in diet will result in acidosis and parakeratosis of rumen wall, which in turn will result in poor absorption of nutrients across rumen wall. As organized commercial farms are coming up in place of individual ones, availability of green fodder or dry fodder should be ensured.

4. Increasing the level of rumen undegradable protein (bypass protein) in the diet will increase milk production. It is beneficial to supply bypass protein (Cotton seed, coconut cake) in the feed for high producing animals (more than 15 kg milk per day). The level of by pass protein in diet should not be more than 30-35% of total CP.

5. Protected fat or bypass fat is also found to increase milk production and it can be included at a rate of 1% in the ration. By pass fat is costly (Rs. 85-90/kg) and it will be beneficial in high producers.

6. A dairy cow should never be supplemented with calcium during later stages of pregnancy. It should be fed only the required levels or a little lower levels to avoid chances of milk fever.

7. Normally the anion cation balance (DCAB) of a concentrate mixture will be +200 to +250 meq/

kg. Feeding an anionic diet (DCAB of -28 to -100 meq /kg) 2-3 weeks prior to calving will lower the incidence of milk fever. This can be achieved by feeding anionic salts like ammonium salts.

8. The non-producing and non-pregnant cows can be fed feeds with lower protein levels (14-16%) or they can be maintained on good quality green fodder alone.

### Conclusion

Recent census reveals that cattle population in the State is decreasing. This is mainly because of lower sustainability of the enterprise as well as risk factors involved. High cost of raw materials is also forcing individual farmers to other profitable areas of business. In the present scenario it is the duty of each and every veterinarian to make the farmers aware and to help them adopt scientific methods of feeding and newer techniques in the field of dairying. Then only more and more people will come forward to take up animal husbandry activities, which will invariably uplift our profession.

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