



Disease outbreaks - an eye opener to breeding policy

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Kerala is the first state in the country to formulate a cattle breeding policy to popularise artificial insemination as routine breeding tool for cattle. Consequently we could convert more than 67 % of our cattle into exotic cross breeds with high genetic potential for milk production, within a short span of about 25 years.

One important characteristic feature of our breeding policy is the provision for periodic revision so as to incorporate necessary changes.

Achievements of our breeding policy are

1. A 10 folds hike in milk production from 2.5 MMT (million metric tonnes) during early 1970s to 25 MMT in late 1990s.

2. Conversion of about 67 % of cattle heads in to exotic cross breeds with high genetic potential for milk production.

Major areas which need more attention are

- 1) **Declining disease resistance:-** Disease resistance of our animals have declined drastically due to the incorporation of high proportion of exotic germ

plasm in the herd and hike in productivity. As a result simultaneous with 10 fold increase in milk production, occurrence of diseases has gone up by 20 folds or even more over the last 30 years. There are many diseases newly emerged or remerged among cross bred animals due to their declined disease resistance. Foot & mouth disease, which was a mild disease affecting local cattle have emerged as a disease of high fatality or a disease causing considerable morbidity among cattle and other species. Anthrax and other bacterial diseases also have become great threat to livestock owners. Because of all these cost of health care have gone up by 40 or 50 folds compared to previous years.

- 2) **Lack of congenial environment for high production:-** Through intensive cross breeding efforts spread over about 5 generations, cumulative figure of genetic potential for milk production (in terms of breeding value of bulls used) pumped into our animals have exceeded 100 - 200 times. However average milk production of cross bred animals is still around 6 - 8 litres per day, which is just 3-4 folds of the production obtained from our cattle prior to introduction of the breeding policy. Besides, decline in productivity is evidenced from first generation to subsequent ones even after continued pumping of valuable germplasm.

Major reason for declining productivity across generations is lack of congenial environment to express the genetic superiority. However our policy is still oriented towards increasing the genetic potential, while the environment is becoming more and more hostile for high production. Even though the expectation at introduction of cross breeding policy was that we can improve the environment to exploit the achieved genetic potential through better management. However having realised that improvement of management to exploit genetic superiority has got so many limitations, our breeding policy would have modified to get highest productivity in the prevailing environment rather than further increase in the genetic superiority.

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individual selection in females are normally practised in Animal breeding. Traditional selection gives good results with a large numbers of data which are normally distributed. Traditional selection is inefficient for traits like fertility and disease resistance along with crossbreeding / species hybridization programmes and sex-limited traits. Recently, genetic / molecular markers like Restriction Fragment Length Polymorphism (RFLP), minisatellite or variable number of tandem repeats (VNTR) or DNA fingerprints, Microsatellite, random amplified polymorphic DNA (RAPD) etc. which are popular in modern animal breeding practices, may be applied in yaks for identification of genes and their manipulation.

Conclusion :

The world is changing fast as per the demand of people, their pressure on easily accessible natural resources. Due to the increasing population pressure and whimsical use of animal genetic resources without its proper replacement of the precious animals like yaks are reducing in number day by day. So, the first priority is to save this unique bovid with the following guidelines:

- ♦ The farmers who are managing yaks are to be properly educated for scientific rearing.

- ♦ There should be campaign for enhancement of number animals through traditional system

and modern biotechniques.

- ♦ The slaughtering of females are to restricted and the males are to be used judiciously for meat trait.

- ♦ Modern biotechnological tools like storage of semen / oocytes / embryos, production of transgenic animal may be other options for its conservation and propagation.

- ♦ Corporate breeding schemes with natural / artificial insemination of semen collected from proven sires may be despatched in various yak pockets for its quick genetic progress.

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The research information on analysis of causes of death in the Centre's camel herd indicated maximum mortality (48.78%) due to the involvement of digestive system. Respiratory system was involved in 17.56% cases. The Nervous system was involved in 4.88% cases whereas the Cardio-vascular, Urinary and Genital systems were involved in 4.39, 0.44 and 0.44% cases. Deaths in 23.41% cases were due to poisoning, euthanasia due to fracture of long bones / incurable disease, pica etc. The calf mortality at the farm remains around 5%. It was suggested that improved management practices, cost effective management of long bone fractures and timely supplementary feeding can be of great use in reducing the mortality in young and adult camels (Annual Report, 2001-2002).

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