



Buffalo Production - Kerala Situation

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The Asian domestic buffalo appears to have been developed over centuries from its wild ancestor, the *arnee*. These wild buffaloes are still found in the jungles of Asia. We, in India have mostly the Riverine types of buffaloes and even those that are not good dairy animals and are used for draft and to some extent meat. India has some of the best buffalo breeds in the world, especially for milk production. The native buffaloes in Kerala were non descript, ie, without any specific production traits and hence are being graded up using better dairy breed of buffaloes to improve their milk production. From dairying point of view, the Murrah, Jaffarabadi and some

of the Gujarat breeds of buffaloes are important.

When buffaloes are reared with a definite objective in view, the complex "reproduction" is bound to occupy a very special position. Here, we must take into account those features that distinguish buffaloes from cattle: e.g. their relatively late maturity of sexual functions, a short mating period, first calving at a late age and long calving intervals. Mating and calving also have a markedly seasonal character in case of buffaloes. However, buffaloes are best converters of poor quality roughages into milk and meat. It has been estimated that buffaloes have about 5% higher digestibility of crude fibre than that of high yielding cows.

The buffaloes form a very small proportion of the bovine population in Kerala compared to the other parts of the country and their contribution towards total milk production is small. A review of the census figures revealed that buffalo population continued to decline over the years in the State except for the period between 1966 to 1972, which indicates that the State has not taken any concerted attempt in implementing any tangible buffalo development programmes. The buffalo population in the State over the years are shown in Table 1.

Table 1. Buffalo population in Kerala over the last seven census years (laks)

	1962	1966	1972	1977	1982	1987	1996
Adult males	2.85	2.54	2.26	2.19	1.33	0.99	0.43
Adult females	1.35	1.35	1.56	1.57	1.39	1.24	0.36
Young stock	0.65	0.83	0.90	0.78	0.87	1.06	0.86
Total	4.85	4.72	4.72	4.54	4.09	3.29	1.65

There has been a drastic decline by 50% in the population of buffaloes during the census years from 1987 to 1996. The relative proportion of bullock and he-buffaloes to

total work cattle has changed and buffaloes are still preferred as work animals in the State. The average milk yield of buffaloes in the State in the year 1998-99, with seasonal fluctuation is shown in Table 2.

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Table 2. Average yield of buffaloes in the State (1998-99)

	Summer	Rainy season	Winter	Annual	(kg/day)
Average yield of buffaloes in milk		5.667	5.871	5.582	5.709
Average yield of milch buffaloes		4.105	4.254	4.057	4.140

As far as meat production in the State is considered, 13.74 % of the total animals slaughtered during 1998-99 were buffaloes and of the total meat produced during the same year 24.43% came from buffaloes. The district wise details of buffaloes in the State during the year 1998-99 are given in table 3.

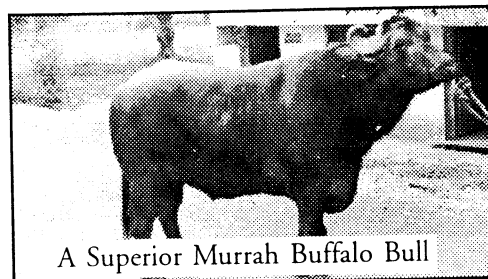


Table 3

District	Population (no's)		Milk Production ('000 tons)		
	Total buffaloes	Breedable buffaloes	Total milk	Buffalo milk	% share of buffaloes
Thiruvananthapuram	15304	7520	267.526	11.344	4.24
Kollam	8887	3500	222.240	4.061	1.83
Pathanamthitta	3269	765	153.155	3.231	2.10
Alappuzha	4237	1499	144.176	1.619	1.12
Kottayam	4358	1947	214.895	2.727	1.27
Idukki	14591	6719	134.099	4.052	3.02
Ernakulam	10173	3593	209.492	3.988	1.90
Thrissur	19618	7316	206.599	9.339	4.52
Palakkad	35693	9487	237.327	13.675	5.76
Malappuram	23271	7916	147.173	8.650	5.88
Kozhikode	1910	403	151.211	3.023	2.00
Wayanad	10435	1691	88.043	0.830	0.94
Kannur	3982	1408	165.947	3.258	1.96
Kasargode	9397	2323	78.159	5.006	6.40
Total	165125	56087	2420.042	74.803	3.09

Murrah is certainly the most common breed, in its pure form as well as sub-forms (crosses between Murrah and other indigenous breeds) in the country as well as the State. The best dairy breeds of buffaloes are native to India and Pakistan. Hence the only possible option for improving the dairy buffaloes of the country is by pure breeding and selection in their native breeding tracts. Where the local population of buffaloes are non-

descript or low yielding as in Kerala, grading up with recognized dairy breeds of India is the most suitable breeding policy and hence is followed in the State. Grading up is possible in buffaloes, which has not yielded good result in cattle breeding programmes of the country, because the donor breed for improvement is acclimatized to the existing environment of the non-descriptive population. Heavier breeds like Murrah and





Nili Ravi can be used in areas having good dairy potential and husbandry status, while medium sized breeds like Mehsana and Surti can be tried in low husbandry status areas.

Initially, in Kerala buffaloes were graded up using Murrah buffalo bulls. For sometime thereafter Surti bulls were used along with Murrah bulls for grading up. As per the breeding policy in force crossing of native buffaloes with Murrah are to be intensified with proper follow up so as to convert the native population to Murrah through grading up. Also it is envisaged that suitable changes in breeding and management practices of buffaloes should be able to contribute towards milk production at a much higher level than at present. In line with the breeding policy, superior Murrah buffalo bulls selected from elite herds in the country are being used for frozen semen production for the breeding programme of the State.

We have not been able to make any serious improvement in milk production in buffaloes because of lack of adequate organization for scientifically selecting genetically superior sires in the breeding tracts. The selection in female is seriously limited because of their reproductive performance and the need for maintaining majority of the females born as replacement to those culled or died. Moreover, there is a lack of sound information on the buffaloes.

Under the traditional rural conditions, buffalo raising is based on the availability of shade and pond. No specialised knowledge has been worked out with regard to the specific needs of buffalo rearing.

Although milk yield is an important economic trait, dairy animal's real profit function is the result of interplay of several traits like growth rate, size, reproductive efficiency, production level and length of productive life. Though, the buffalo is a relatively superior yielder to several zebu breeds, its productive life is very short. This is mainly due to its delayed age at first calving (due to slow growth rate) and long intercalving periods (due to lower reproductive efficiency). Age at first calving, days open, days dry and herd life are some important factors that are mainly dependent upon managerial decisions. At a given genetic potential for production, it is pertinent to determine the optimum levels of those traits at which given managerial practices help to obtain efficient exploitation of genetic potential. Most of the reproductive traits have little genetic variability. Efficient

management, improved nutrition and systematic health control can attain improvement of fertility and regular breeding.

The heritability estimates of milk production traits in buffaloes although variable are more or less same to those in cattle to indicate that the same breeding programmes would be appropriate. Maximum genetic progress can be attained by identifying young bulls, first from outstanding dams (both in milk production and reproduction) and then further screening them by progeny testing. However such selection based on corrected milk yield for known environmental effects should take place in the native tracts of Murrah or any other milch breed used as donor. Any programme for selection of animals within the State can only be thought of after the population in the State is graded up to donor breed, i.e., as near to 100% blood level of the latter.

In addition to all the above problems, there also exists an "emotional block" in rearing buffaloes as compared to cattle among the Kerala farmers reasons of which are yet to be explored. Milk from buffaloes and products from buffalo milk are not that relished by the Kerala masses as that from cows. Buffaloes are more seen centered in areas where market for milk is higher, since increasing the volume of milk due to higher fat percentage is possible with buffalo milk.

Insufficiency of roughages in the State makes it impossible to tap the advantage of buffaloes, which are known for their fibre conversion efficiency. Moreover, the "Chapra system" wherein pregnant/lactating buffaloes are purchased and brought to the State for keeping them during the milking period alone and thereafter disposing them as dry is also contributing to the insufficient response for breeding efforts taken up in line with the breeding policy of the State.

Since the buffalo is not affected by the slaughter ban and shows good fattening and slaughter potential, this animal will in all likelihood play a key role in the time to come. Moreover, the buffalo is a better milk giver though the milk potential of the animal has not been fully explored as yet. In the long run it seems, the buffalo keeper can expect better economic gains – a situation that is bound to influence the cattle keeper as well. But this warrants intense awareness generation and investigation of the socio-economic and ecological conditions in the "traditional" sector.

