

## CROSSBREEDING GOATS FOR MEAT PRODUCTION IN KERALA - BOON OR BANE?

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Kerala farmers are the most receptive of all Indian farmers, it is said. They jump at any proposal for adopting modern agricultural and animal husbandry practices. Introduction of crossbreeding in cattle is a typical example. Kerala is the only state in India where crossbred cattle population is more than 70%. Disadvantages of crossbreeding notwithstanding, it was a necessity to improve the milk production of our low producing local cattle. Does a similar situation exist in goats with regard to the meat production potential? Our intention in this article is to examine this point.

Kerala has a goat population of 18.6 lakhs (1996 census), the majority of which do not fall in to any specific category. The goats of Tellicherry, Badagara and parts of Malappuram districts belong to the breed Malabari, which are maintained for both meat and milk.

As a part of the genetic improvement of Malabari goats under the All India Co-ordinated Research Programme, extensive surveys have been conducted in the northern districts of Kerala and the breed has been described (see box).

### MALABARI GOATS

*Malabari goat is a breed of Kerala confined to the northern parts, and was evolved a few centuries ago and is believed to be a mixture of Jamnapari, Surti, Arab and local goats. Hence wide variation in colour pattern is observed. According to the survey conducted by All India Co-ordinated Research Project (AICRP) on goats, these animals are mainly white, white and black or white and brown (65%). Majority of animals have short hairs at forequarters (57%) and in hindquarters, short, medium and long hairs are found in equal proportions. 97% of animals have straight hairs.*

*76% of animals are long eared and horned and forehead is mainly convex. Only 12% of animals have tassels and 6% have beard. Ear orientation is either horizontal (50%) or drooping. Generally udder is round with funnel shaped teat and pointed teat tip.*

### Body weight of Malabari goats

Based on the recordings made at different stages, the details of body weight at three months and six months of age and the average daily gain are presented in the following table.

### Three months

	Tanur	Tellicherry	Badagara
Av. body weight (kg)	8.4 ± 0.22 (95)	8.9 ± 0.18 (129)	9.16 ± 0.28 (61)
Av. daily gain 0-3 Months (gms)	75	80	83
Av. of top 10% (Kg)	11.375	12.406	12.26
Av. daily gain 0-3 Months (gms)	104	116	114
Maximum weight (Kg)	15	16	14
Daily gain (gms)	139	150	130.5

### Six months

Body weight (kg)	11.98 ± 0.37 (41)	15.72 ± 0.49 (81)	15.45 ± 0.68 (41)
Av. daily gain 0-6 Months (gms)	57	78	76.4
Av. of top 10% (Kg)	15.25	22	21.28
Av. daily gain 0-6 Months (gms)	73.6	111	107
Maximum weight (Kg)	17	30	28.5
Daily Gain (gms)	81	153	144

A close look at the table will reveal that the body weight is higher for Tellicherry and Badagara animals when compared to Tanur animals. The average daily gain of the top 10% of the animals is extremely good.

These observations suggest that excellent germplasm is available in Malabari population itself and utilization of these animals for upgrading the local population will be the best possible method for increasing meat production potential of our goats.

Comparative performance of Boer and Malabari in average

daily gain (ADG)

The following tables gives a comparative performance of Malabari and Exotic Boer animals with regard to growth rate.

#### ADG(gms)

Area	0 - 3 months	3 - 6 months	6 - 9 months
<b>Dhoni farm(KLD board)* - Boer</b>			
Males	100	115	120
Females	115	105	105
<b>Field Area of AICRP on goats (Selected 10%) - Malabari</b>			
Tanur	104	43	30
Tellicherry	116	107	107
Badagara	114	100	80

\*J.Indian Vet.Asso. 7(2) P:28

The above table gives the comparison of performance of purebred Boer and top 10% of Malabari goats from the field area. The performance of Tellicherry animals is comparable to that of exotic Boer breed. We should remember that Boer stock is reared in the farm where excellent fodder and grazing facilities are available. Also the basic stock of these animals must have been purchased from a pedigreed stock outside the country.

From the above observations it is clear that instead of using exotic Boers for improving the meat production of our stock, the best animals from our stock can be selected and used. This has the advantage that these animals are acclimatized to our conditions and will help in conserving this valuable germplasm.

During early period, (pre-weaning period) there is absolutely no difference in body weight gain between Malabari and Boer. Subsequent variation may be due to the result one or the joint effect of the following factors.

- 1) Low levels of feeding and management under field conditions and
- 2) Early maturing nature of native goats.

Note that the body weight at six months and age at first kidding are lower in Tanur animals when compared to others. (Table)

The goats of Tellicherry, where the growth rate is uniformly good and comparable to Boer's performance in the state, can be considered to be genetically superior stock.

#### Performance of cross breeds

As has been pointed out in an earlier article (J. Indian Vet. Assoc. 7(2): p.35) crossbreds may perform better than purebreds due to hybrid vigor and this cannot be maintained unless followed by rigorous selection. There are no reports on performance of Boer crosses in Kerala.

A report from Mahatma Pule Krishi Vidyapeeth, Rahuri, Maharashtra states that the daily gain between 0 to 6 months of

Boer X Osmanabadi cross as 83 and 55 grams for males and females and as 60 and 64 grams in Osmanabadi breed, respectively. In Kattupakkam (Tamil Nadu), the corresponding figures were 41 and 39 for local and 45 and 56 in crosses with local (Personal communication). These results indicate that crossbreds' performance is only slightly higher than that of our natives.

#### Is higher growth rate the only important factor?

The following table gives the age at first kidding and number of kids produced per 100 kidding by animals of different areas of northern Kerala.

	Tanur	Badagara	Tellicherry
Age at first kidding (Days)	265.41 ± 8.13	269.7 ± 12.11	285.02 ± 12.01
No. of kids per 100 kidding	197.14	177.33	176.18
Body weight at six months (kg)	11.98 ± 0.37 (41)	15.72 ± 0.49 (81)	15.45 ± 0.68 (41)

From this table it is clear that the age at first kidding and body weight at 6 months are lowest in Tanur animals but the number of kids produced per 100 kiddings is highest. Since the body weight is less, the feed requirement would be lower in Tanur animals. It indicates that animals with smaller size of Tanur will be giving more or less equal income to the farmers when compared to Tellicherry and Badagara animals

That is, even though the body size is important, the prolificacy also should be taken as a breed character while selecting animals

#### What is happening in our state in crossbreeding sector?

The high cost of chevon in the market has inspired many farmers to go in for goat farming. The wide publicity in the print and visual media together with constant contact classes arranged (on payment) by certain societies caused many farmers to resort to crossbreeding with exotic bucks rather than with Malabari bucks. Very little effort is made to select and use Malabari bucks for breeding and instead, semen is imported from private agencies outside Kerala or cross bred bucks are purchased for exorbitant rates and used for breeding. An interesting observation is that many of these farmers suddenly turn 'kid lovers' and sell their kids only for rearing and not for meat because they realize that selling for meat may not be very profitable. A minimum of Rs.150/- is charged per kg for these "elite animals" when in the market the present rate is only Rs.70 to Rs.90 per kg of body weight, for best Malabari animals having similar gains. With the result there is a sharp increase in the number of these types of farmers and their protectors. These animals are purchased by others and used for breeding purpose with the label of Boer crosses and money is extracted from poor farmers on this pretext.

At this point of time, we remember a boom in rabbit breeding that occurred a few years ago. Most of the rabbit farmers started selling young weaned rabbits for rearing purpose with the result there was an influx of bunnies and at one point there were very few takers for these bunnies, as rearing rabbits for meat on a large scale is not a very profitable enterprise. Majority of the units were closed down when it was realized that this practice was not sustainable. Since goat is an animal with longer generation interval, it will take some time before farmers realize that rearing crossbreds for meat will bring only reduced profit, but by that time a good population of our native animals will have disappeared! We should remember that goat farming would be sustainable only if it is economically viable when produced for meat.

The profitability of goat farming depends upon the amount to be spent to attain a particular body weight and prolificacy of the animal. These two factors decide the net economic return and are the two most important criteria in goat farming. That is, an animal may be huge in size, but its rearing may not be profitable to the farmer.

This is an important factor within and between breed selections. Remember that the number of kids per kidding reported in Boer goats by the Kerala Livestock Development Board is 1.63, while it is 1.97, 1.77 and 1.76 for our animals in different localities for Malabari goats.

### What should our approach be?

As explained above we should have systematic breeding and

buck selection programme wherein excellent germplasm should be purchased from farmers before they go for slaughter. These bucks should be selected based on dam's yield and their own body weight. As mentioned elsewhere, animals with very good growth rate are available with our farmers and they should be procured by paying premium prices. A similar programme is being implemented by All India Coordinated Research Project on Goats(AICRP), Kerala Agricultural University at three centres of northern Kerala and farmers are cooperating very well with this programme.

For those animals in the native tract of Malabari, selection can be made based on body weight at 6 months age itself and those weighing above the average should be used for breeding.

Let us work jointly to select, breed and produce our own strain of goats from among the better germplasm available in Kerala, which are acclimatized under our own conditions.

Bringing in of exotic germplasm and crossing with locals should be done with utmost care. We have failed several times to produce good results by crossbreeding goats and because of this, selective breeding with Indian breeds have been accepted as the best breeding programme for Indian goats. Any attempt to misguide farmers in this aspect should be viewed very seriously by the authorities.



## Round Table Vets Meet

The Round Table Vets meet at Ernakulam on 23-7-04 at 10 am  
at Hotel Ganam, All free & fun loving Vet friends are invited.

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