



## Assessment of Cross Breeding Technological Intervention for Improving the Productive Performance of Local Non-Descript Goats

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### ABSTRACT

The assessment on cross breeding technology employing boer cross breed bucks with local non-descript goats was carried out by KVK, Kattupakkam, Kanchepuram district to find out the performance of boer cross bucks with local non-descript goats. The results revealed that the breeding parameters of boer cross namely tugging, kidding and twinning percentage observed were as 42.81, 46.43 and 41.67, respectively and the average birth weight of boer cross bred kids was recorded as 1.93 kg, whereas the weaning weight of kids at two months of age was 7.53 kg. The economic analysis of the study revealed that the benefit cost ratio for the technological intervention of cross breeding of boer cross bucks with local non-descript goats was 1.39 :1 which was comparatively higher than pure breeding of local non-descript goats.

**Key Words:** Birth weight, Boer cross, Cross breeding, Goat farmers, kidding percentage.

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### INTRODUCTION

Goat farming provides income generating avenue for the landless, marginal and small farmers. In India goat rearing is considered as mobile ATMs since they help the farmers in financial crunch situations. Goat rearing has been found equally rewarding under both intensive and semi-intensive systems of management. Intensification and commercialisation of goat enterprise has been recorded important because of shrinking of resources for extensive grazing. Commercialisation would help in increasing the goat productivity and bridging the demand-supply gap (Kumar, 2007). The first step of the characterization of local genetic resources is based on the knowledge of variation in the morphological traits (Delgado, 2001). It is very important that the present genetic resources

be documented for phenotypic variation, social importance and unique genetic characteristics for effective management and conservation of livestock resources (Duchev and Groeneveld, 2006). The biometric measurements provide important evidences for the growth of the breed and the properties that change with environmental effects and feeding factors. Singh and Sharma (2019) concluded that feeding of green fodder after weaning at 60d of age to goat kids improved body weight and meat value for commercial purpose. There have been some biotechnological approaches applied in goat breeding and evaluation of native breeds.

In recent years, the concept of stall feeding is gaining momentum and farmers cultivate green fodder in their own or leased lands and feed their



Fig 1. Cross breeding using boer cross breed of bucks

goats. In this context, goat farmers face many constraints in various aspects of management namely breeding, feeding and disease management. Krishi Vigyan Kendra, Kattupakkam tried to identify the practical and field level difficulties in scientific goat rearing so that the same could be minimised. One of the problems faced by the farmers in scientific goat rearing is inbreeding depression due to the breeding of the same local non-descript buck with local non-descript does for several years leading to early embryonic mortality, kid mortality, poor birth and weaning weight. Therefore, the technology assessment was undertaken during the year 2015 with the objective of studying the performance of the local non-descript goats due to cross breeding with boer cross breed of bucks.

### MATERIALS AND METHODS

The study was undertaken by Krishi Vigyan Kendra, Kattupakkam in two villages of Kancheepuram district namely Thandarai and Ammanambakam by providing Boer cross bucks (obtained by cross breeding of Boer, a South African breed with Tellicherry goats) aged 2-3 yrs maintained at Post Graduate Research Institute, Kattupakkam to the selected farmers for cross breeding of local non-descript goats to enhance the breeding and production performance. A total of six goat farmers who were maintaining 6-8 local non-descript goats for more than five years were selected for the study. The data on breeding and production

parameters were collected through periodical direct observation and also through discussion in both the technological options, the first being cross breeding of local non-descript does with boer cross breed of bucks and the second technology option of the existing farmers practice of crossing of local non-descript bucks and does.

### RESULTS AND DISCUSSION

The technological assessment of cross breeding to improve the low productive local non-descript goats using Boer cross breed of bucks was carried out and the production performance of cross bred kids was compared with that of local non-descript kids. The benefit cost ratio for the above technological intervention was also analysed and the results are as follows.

It could be observed (Table 1) that the breeding parameters namely tugging and kidding percentage in case of technological option 1 (cross breeding of local non-descript does with boer cross bucks) was 42.81 and 46.43, respectively, whereas it was 39.94 and 32.28 per cent in case of breeding of local non-descript does with local non-descript bucks which revealed that boer cross breed of bucks have significant breeding potential. The twinning percentage in case of Technological option 1 was 41.67 whereas it was 55.00 in case of Technological option 2, which clearly signifies that local non-descript breeds have more twinning when compared to boer cross breeds.

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**Table1. Breeding and production performance parameters of Boer cross and local non-descript goats.**

Parameter	Technology option 1 (Boer cross buck with local non-descript does)	Technology option 2 (Local non-descript buck with local non-descript does)
Breeding Parameter		
Tupping (%)	42.81	39.94
Kidding (%)	46.43	32.28
Twinning (%)	41.67	55.0
No. of kids/ kidding	1.43	1.27
Production Parameter		
Birth weight (Kg)	1.93	1.26
Weaning weight (Kg)	7.53	6.69

### Production parameters

The birth weight and weaning weight of boer cross bred kids obtained in Technological option1 were 1.93 and 7.53 Kg, whereas the birth and weaning weight of kids obtained through breeding of local non-descript bucks were 1.26 and 6.69 Kg only. This revealed that boer cross bred kids have significant weight gain during weaning and marketing age thus facilitating in enhancing returns for the farmers. This was in line with the findings of Mallick *et. al* (2017) who studied the growth and performance of local non-descript and crossbred goats and revealed that the weight at birth, 3 months, 6 months, 9 months and 12 months of age were significantly higher in crossbred goats. The benefit cost ratio for the technological option 1, cross breeding of boer cross bucks with local non-descript does was 1.92 : 1 whereas it was 1.84 : 1 in the technological option 2 (Farmers' practice) of breeding of local non-decript goats. The results clearly implied that cross breeding technology with boer cross bucks has significant advantage over the traditional practice of breeding local non-descript bucks and does.

### CONCLUSION

The production performance of local non-descript goats in terms of kidding percentage, birth weight, weight at weaning and marketing can be

significantly improved by cross breeding of local non-descript does with boer cross bred bucks. In addition, the farmers would be able to obtain enhanced returns due to marketing of boer cross bred goat kids at six months of age.

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