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PERFORMANCE OF THE LAMBS BORN TO CROSSBREEDING LOCAL SHEEP WITH RAMBOUILLET RAMS

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ABSTRACT
Sixty lambs born to crossbreeding Rambouillet rams with local ewes were grouped under experimental (E) group and sixty lambs born to local sheep under control (C) group. Body weights of the T group lambs were significantly higher (P≤0.05) than C group lambs. Wool yield was improvised from 1.5 kg/year and rough grade in C group to 2.2 kg and average grade wool in T group. Crossbred lambs had low age at maturity and age at breeding. As it improved the economy of the farmers, it was concluded that crossbreeding is an essential tool for improvement of productivity of local sheep.

KEY WORDS: crossbreeding, Rambouillet, sheep, wool

INTRODUCTION

The current population in world is 1110.78 millions, around 44.85 millions sheeps in India (ICAR, 2002). Production from local sheep can be enhanced by breeding them with exotic breeds like Rambouillet (Leymaster, 2002, Robert Weaber, 2005). Crossbreeding offers two distinctive advantages over single breed. First, crossbred animals have heterosis and hybrid vigour. Secondly, they combine the strengths of parents to produce a highly desirable animal for a broader range of traits.

MATERIALS & METHODS

Breed of sheep in Chickmagalur district mainly consists of local, non-descript sheep with Deccani sheep characters in major. They have body weights averaging 28-30 kg and wool yield of 0.5 to 0.75 kg/6 months with dressing percentage ranging from 44-52%. It was known that purebred Rambouillet m*ature rams weigh about 110-135 kgs and ewes weigh about 90 to 125 kgs. Mature ewe yield fleece from 3.65 to 8.2 kgs. (ARSBA). Hence, an attempt was made to upgrade the local sheep by crossbreeding with Rambouillet rams, which is also the policy of Karnataka state government (KSWDC website).* 3 male Rambouillet rams were distributed to the farmers of Chickmagalur district, Karnataka state. This was taken as frontline demonstration from Krishi Vigyan Kendra, Mudigere, Chickmagalur district, Karnataka state. The observation of 60 F1 lambs born to crossbreeding of local ewes crossed with Rambouillet rams (Experimental-T group) were compared with the similar number of F1 lambs born to breeding of local rams and local ewes (C-control group). The F1 lambs were observed for growth rate, survivability, adaptability, feed intake, wool parameters, economics and other relevant parameters. All the animals were fed on concentrate mixture, paddy straw and mixed green fodder according to ICAR standards (1998). The data collected was analyzed statistically for ANOVA according to the standard procedures described by Snedecor and Cochran (1989).

RESULTS & DISCUSSION

Feed intake of T group was significantly higher than C group (table1). The body weights of the T group lambs were significantly higher (P≤0.05) than C group lambs. Similar observations were noted as faster growing lambs were obtained by crossbreeding local with exotic sheep (Schoeman and van der Merwe 1994).

TABLE 1: Intake of major nutrients by sheep (g/ani/d)

Parameters	T group	C group
CP	68.24	61.62
EE	13.21	11.43
CF	179.90	137.64
OM	745.06	612.74
TA	70.21	56.19
NFE	483.70	402.04
DMI (g/animal/day)	815±23.8[a]	669±19.5[b]
DMI (g/kg W0.75)	67.34±8.55	65.63±10.2

The survivability of the local sheep was higher than crossbreeds. This may be due to better adaptability of the local breeds to that environment. Though survivability of C was numerically higher it was statistically insignificant.

Wool colour of the T group was white or white mixed with patches of black in major and few pattern of other colours (table 2). The quality of wool improvised in quality and it was graded as average wool in T group and rough wool in

C group. This study agrees with Thiagarajan and Jayashankar (2012) who observed better wool yield in crossbred sheep born to better wool breeds. Wool yield was improvised from 1.5 kg/year in C group to 2.2 kg/year in T group. In India except Magra sheep which annually yield more than 2 kg wool having staple length 5.8 cm, the average of rest of the wool produced is less than 1.0 kg per sheep of inferior quality (Banerjee, 1998).

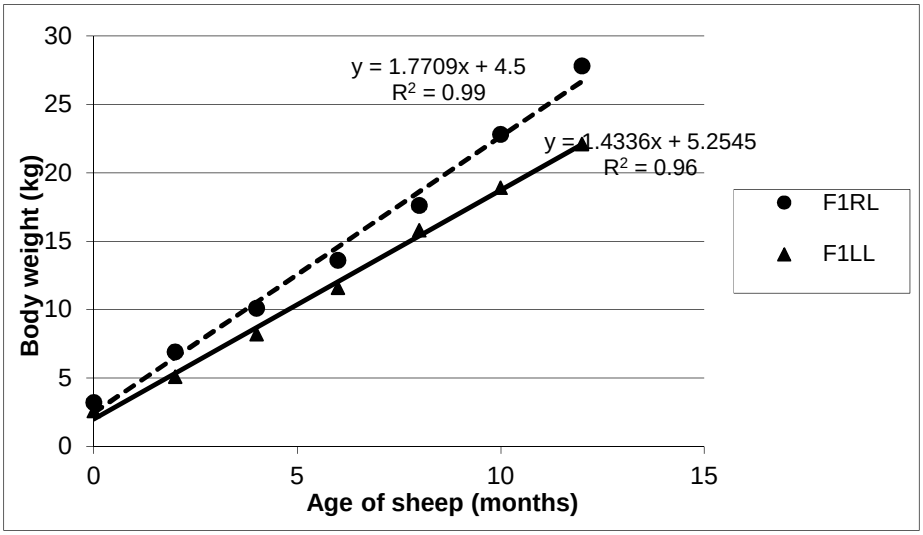
TABLE 2: Effect on some important traits of sheep

Parameters	T group	C group
Age at maturity (male), months	11.0	13.4
Age at maturity (female), months	15.7	19.2
Age at mating (male), months	20.2	24.3
Age at mating (female), months	17.5	19.4
Average gestation period (days)	149.2	145.1
Birth weight (kg)	3.2	2.5
Wool production (kg/ani)	2.2	1.5
Wool quality	average to rough	rough
Wool length (cm)	4.2	3.3

Age at maturity and age at breeding of the rams and ewes of T group was less than control. Even these animals attain maturity at an earlier age, they should be used when they attain full potential growth, usually from 2.5 years to 7 years of age (Banerjee, 1998). Similar observations were obtained by Khan *et al* (1989) in cattle due crossbreeding local cattle with exotic breeds. The survivability of C group (89%) though numerically higher than T group (82%), it was statistically insignificant. Farmers got extra profit (table 3) of Rs.1248 due to crossbreeding.

TABLE 3: Influence on economy of the farmers

Parameters	T group	C group	Increased yield in T group
BW (kg)	38.6	30.4	8.2
Market value @ 150 Rs/kg live wt	5790	4560	1230
Input cost	5000	2000	
Wool yield (kg/6 months)	2.2	1.5	0.7
Market value of wool @ 25 Rs/kg	55	37.5	17.5
Net profit of crossbreeding/year	1247.5		



GRAPH 1: Growth curve of the lambs born to crossbreeding local sheep with Rambouillet rams

CONCLUSION

As a result of crossbreeding, the body weights, wool yield, wool quality of the crossbred sheep was enhanced when compared to local breeds. Also, age at maturity was reduced which reduces age at first lambing. Hence, it is concluded that crossbreeding local sheep with Rambouillet rams is highly remunerable to the sheep farmers.

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