Short Communication

EFFECT OF SUPPLEMENTARY FEEDING OF CREEP FEED IN *PATTANAMADU* SHEEP LAMBS UNDER FIELD CONDITIONS IN THE BREEDING TRACT OF TAMIL NADU

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ABSTRACT

A study on effect of supplementary feeding of creep feed in Pattanam sheep lambs was conducted in its breeding tract of Tamil Nadu, India. Total number of 90 Pattanam sheep lambs at the age of one month were selected in the farmers flock and divided into three groups each comprising of 30 lambs, assigned to the following treatments and reared upto three months. In T-1 (control) 30 lambs were maintained by routine feeding management by farmers, in T-2 30 lambs were fed with concentrate supplementation at the rate of 50 gms per lamb per day along with routine feeding management by farmers and in T-3 30 lambs were reared by concentrate feeding at the rate of 50 gms per lamb per day with mineral supplementation through salt lick block along with routine feeding management by farmers. Fortnightly body weight (kg) and average daily gain (gms) was recorded to assess the influence of supplementation on growth rate of lambs in farmers flock. At start of the trial the overall body weight of lambs was 8.45 ± 0.91 which was non-significant. Fortnightly body weight was 9.78 ± 2.21, 10.98 ± 1.54, 11.77± 1.73 and 12.09 ± 1.73 in first, second, third and fourth fortnights respectively. Between groups significant difference (P< 0.05) in body weight gain was observed in first fortnight and highly significant difference (P< 0.01) was observed during subsequent fortnight. Average daily gain (g) was recorded as 88.67, 80.00, 52.67 and 26.00 during first, second, third and fourth fortnight, respectively. It can be observed that the lambs under T3 had superior ADG followed by the lambs under T2 and T1.

Keywords: Average daily gain, Creep feed, Field flocks, Lambs, *Pattanamadu*, Supplementary feeding

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Introduction

Sheep production is a major source of livelihood to the poor people in the state of Tamil Nadu, India in extensive system of

management with grazing being the only source of nutrition. Natural grazing lands are lush during rainy season (August to January) and after that they remain dry during rest of the months. During summer (lean period) there is acute shortage of forage in the grazing lands and farmers graze their animals in harvested crop fields (Venkataramanan *et al.,* 2015). Majority of the shepherds in this breeding tract do not supplement concentrate to their sheep even in the critical physiological stages. Limited concentrate supplementation, in addition to free grazing land, is known to improve the growth performance of lambs, digestibility of nutrients and overall productivity of sheep.

The present study was undertaken to assess the beneficial effect of concentrate supplementation on growth performance of lambs at farmer's flock.

This study was conducted in native tract of Pattanamadu sheep in Southern Agro climatic zone of Tamil Nadu (Kamuthi union of Ramanathapuram district).Total number of 90 Pattanam sheep lambs at the age of one month were selected in the farmers flock and divided into three groups each comprising of 30 lambs, assigned to the following treatments and reared up to three months. In T-1 (control) 30 lambs were maintained by routine feeding management by farmers, in T-2 30 lambs were fed with concentrate supplementation at the rate of 50 gms per lamb per day along with routine feeding management by farmers and in T-3 30 Lambs were reared by concentrate feeding at the rate of 50 gms per lamb per day with mineral supplementation through salt lick block along with routine feeding management by farmers. The lamb creep feed referred as concentrate was procured from CFTU, TANUVAS, Kattupakkam. The composition, CP and TDN of the feed is given below

Nutrient composition of sheep creep feed

Crude protein	- 18.5%
Total Digestible Nutrients	- 67.7%
Crude Fibre	- 10.95%
Calcium	- 0.11%
Total Phosphorus	- 0.8%

Formula

Maize	- 17 kg
Cumbu	- 7.5 kg
Deoiled rice bran	- 48 kg
Sunflower deoiled cake	- 5 kg
Soya bean meal	- 19.5 kg
Salt	- 1 kg
Mineral mixture	- 2 kg

Fortnightly body weight (kg) and Average daily gain (gms) was recorded to assess the influence of supplementation on growth rate of lambs in farmer's flock. The data collected were tabulated and statistical parameters were used for logical conclusion.

Body weight (Kg) of Pattanam lambs under supplement feed trial

Mean ± SE of fortnightly body weight (Kg) of *Pattanam* lambs under supplement feed trial were given in Table 1. At start of the trial the overall body weight of lambs was 8.45

± 0.91 which were non-significant. Fortnightly body weight was 9.78 ± 2.21, 10.98 ± 1.54, 11.77 ± 1.73 and 12.09 ± 1.73 in first, second, third and fourth fortnights respectively. Between groups significant difference ($P< 0.05$) in body weight gain was observed in first fortnight and highly significant difference ($P< 0.01$) in body weight gain was observed during subsequent fortnights.It was observed in Table 1, the body weight of sheep was superior in T3 throughout the trial compared with T2 and T1. It can be concluded that supplementary feeding of concentrates and minerals with grazing was beneficial for the growth of preweaning lambs as reported by Yadav *et al.* (2010), Girish *et al.* (2012), Mondal and Kakati (2013), Venkataramanan *et al.* (2015), Santhoshkumar *et al.* (2018) and Kumawat *et al.* (2018).

The most important physiological factor for determining successful early weaning and ability to utilize solid food is due tothe state of rumen development since it is stimulated by the intake of solid feed, which on fermentation yields volatile fatty acids. Lambs suckling high-milk yielding dams are less inclined to eat solid feed. To achieve satisfactory performance and encourage rumen growth, lambs should receive a diet that ferments rapidly and does not lead to an accumulation of indigestible fibrous material within the rumen.

Average daily gain (g) in *Pattanam* lambs

Mean ± SE of average daily gain (g) in *Pattanam* lambs were presented in Table 2. Average daily gain (g) were recorded to be 88.67, 80.00, 52.67 and 26.00 during first, second, third and fourth fortnights respectively. It can be observed that the lambs under T3 had superior ADG followed by the lambs under T2 and T1. The difference in ADG was significant among groups throughout the trial period. ADG (g) at the rate of 21.67 to 113.66 were reported by earlier workers in non-supplemented and supplemented flocks (Lavania., 2010; Yadav *et al.*, 2010; Girish *et al.*, 2012; Mondal and Kakati, 2013; Venkataramanan *et al.*, 2015; Muralidharan *et al.*, 2016; Gautam *et al.*, 2018; Santhoshkumar *et al.*, 2018; Kumawat*et al.*, 2018; Dass*et al.*, 2019 and Khadda*et al.*, 2020)].

Lambs supplemented with minerals on daily / weekly basis had a higher body weight gain and overall daily gain than the non-supplemented groups, irrespective of the systems of management. This might be due to the enhancement of metabolic process by minerals which favoured better weight gain.

The present study was undertaken to assess the beneficial effect of concentrate supplementation on growth performance of lambs at farmer's flock. In T-1 (control) 30 lambs were maintained by routine feeding management by farmers, in T-2 30 lambs were fed with concentrate supplementation at the rate of 50 gms per lamb per day along with routine feeding management by farmers and in T-3. 30 lambs were reared by concentrate feeding at the rate of 50 gms per lamb per day with mineral supplementation through salt lick block along with routine feeding management by farmers. It was observed in Table 1, the body weight of sheep was superior in T3 throughout the trial compared with T2 and T1. It can be concluded that supplementary feeding of concentrates and minerals with grazing

Table 1. Mean ± SE of body weight (Kg) of Pattanam lambs under supplement feed trial

S.No	Particulars	T_1 (n=30)	T_2 (n=30)	T_3 (n=30)	Overall (n=90)	F value
1	1st day of the trial	8.39 ± 0.84	8.20 ± 0.94	8.76 ± 0.76	8.45 ± 0.91	1.35^{NS}
2	1st fortnight	9.50 ± 2.23	9.57 ± 2.63	10.26 ± 1.63	9.78 ± 2.21	2.49*
3	2nd fortnight	10.56 ± 1.71	10.79 ± 1.84	11.58 ± 0.95	10.98 ± 1.54	3.64**
4	3rd fortnight	11.09 ± 1.73	11.66 ± 1.95	12.55 ± 1.43	11.77± 1.73	3.93**
5	4th fortnight	11.43 ± 1.87	12.06 ± 1.72	12.78 ± 1.49	12.09 ± 1.73	4.88**

Means in the same row with different superscripts differ significantly

NS - Not significant, *Significant (P≤ 0.05), ** Significant (P≤ 0.01)

Table 2. Average daily gain (g) in Pattanam lambs

S.No	Particulars	T_1 (n=30)	T_2 (n=30)	T_3 (n=30)	Overall (n=90)	F value
1	Weight gain between 1st day of the trial and 1st fortnight	74.00 ± 9.81	91.33 ± 10.05	100.00 ± 12.85	88.67 ± 12.12	1.04^{NS}
2	Weight gain between 1st and 2nd fortnight	70.66 ± 7.32	81.33 ± 8.59	88.00 ± 6.91	80.00 ± 8.43	2.38*
3	Weight gain between 2nd and 3rd fortnight	35.33 ± 5.82	58.00 ± 4.18	64.67 ± 5.34	52.67 ± 4.92	2.63*
4	Weight gain between 3rd and 4th fortnight	22.67 ± 3.52	26.67 ± 4.82	29.33 ± 2.91	26.00 ± 2.93	3.94*

Means in the same row with different superscripts differ significantly

NS - Not significant, *Significant (P≤ 0.05)

was beneficial for the growth of preweaning lambs, the lambs under T3 had superior ADG followed by the lambs under T2 and T1group.

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