



Goat Farming for the Economic Upliftment of Resource Poor Farmers of Maharashtra

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Abstract— Survey of farmer was done to record the farmer's profile, livestock production system, socio - economic condition in pre constructed preforms for the selection of farmers. Survey revealed that average annual income of farmers at the beginning of intervention at Trimbakeshwar and Ambegaon taluka was Rs. 25,270/- and Rs. 26,530/- respectively. So, based on survey, 14 SC and 20 ST, altogether 34 resource poor farmers were selected randomly. Necessary training was imparted to the farmers on goat farming. Farmers were given one unit of adult Osmanabadi goat i.e. one male and four female goats, 200 kg pelleted goat feed, 2 kg mineral mixture, feeder, waterer and turpolin sheet. Goats were maintained in semi intensive system of management. Farmers renovated the existing goat shed with low cost locally available materials. Farmers were feeding maize, marvel grass, guinea grass, hybrid napier etc. as green fodder. Supplied pelleted feed was also provided @ 100 g twice daily to each goat. Routine deworming and vaccination was done. Animals were monitored regularly. The data on performance, mortality, disposal of goats were collected. Average weight of male and female adult Osmanabadi goats was recorded to be 23.470 ± 0.872 kg and 25.216 ± 0.691 kg respectively. Average birth weight was recorded to be 2.580 ± 0.234 kg. Average daily gain of kids was recorded to be 108.45 ± 10.21 g / day. So, far 48 kids were born from 27 kiddings and average kidding per cent was triplet 7.41 %, twinning 62.96 % and single 29.63 %.

Keywords— Goat farming, Economic Upliftment, Farmer, Maharashtra

I. INTRODUCTION

In rural area livestock is basically considered as complementary enterprises and every household rear livestock, mainly to meet the demand of meat and as a cash crop to manage the household economy under small scale production system. Goats play an important role in the food and nutritional security of the rural poor especially in the rain fed regions where crop production is uncertain, and rearing large ruminants is restricted by acute scarcity of feed and fodder. Goat occupies a unique place among domestic livestock in India due to high population ie 148.88 m. As per 20th livestock census (1) population of goat in Maharashtra is 10.60 million, which is 7.12% of the national population. There are 37 recognized breeds of goat in India and in Maharashtra 4 recognized breeds of goat i.e. Osmanabadi, Sangamnari, Berari and Konkan Kanyal are prevalent. The Osmanabadi goat is native dual purpose

breed of Marathwada region of Maharashtra, but the breed is reared, bred and well adapted throughout the Maharashtra state and it is popular for higher twinning percent (7).

The package of practices for goat production is low cost and handy technology, so it is suitable to the landless labourers, resource poor farmers for the adoption and self – employment. The small ruminants especially goat contribute to the livelihoods of millions of rural poor in most of the developing countries of the Asia and Africa, where ninety five percent of the world's goat population is concentrated. In a study it was found that the socio – economic status of the goat farmers mostly women farmers could be uplifted through goat husbandry (5). Similarly, in India about 70 % landless labours, marginal and small farmers are associated with goat farming for livelihood improvement (6). So, an effort was made for the study of performances of goat at farmer's field with their

participation to improve socio-economic condition of resource poor farmers of Maharashtra by way of adopting package of practices for goat farming.

II. MATERIALS AND METHODS

Benchmark survey of 65 ST farmers at Traimbakeshwar taluka, Nashik district and 40 SC farmers at Ambegaon taluka, Pune district, altogether 105 resource poor farmers was done to record the farmer's profile, livestock production system, experience of the farmer, socio-economic condition etc. in pre constructed proforma for the selection of farmers. Necessary training was imparted to the farmers on "Goat farming for livelihood improvement" before distributing the animals. After training of farmers field visit was arranged for buildup of confidence. Each and every farmer beneficiary was given one unit of adult Osmanabadi goat i.e. one male and four female goats, 200 kg pelleted goat feed, 2 kg mineral mixture, feeder, waterer, turpolin sheet etc. as roofing material of goat shed. On the day of distribution animals were checked for health condition, insured by insurance company, documents were verified and afterwards MOU was signed by the farmers for proper care and management of goats.

Goats were being maintained in semi intensive system of Management. Farmers renovated the existing goat shed with low cost locally available materials. Most of the sheds were of bamboo or wood or shed net or wire mesh with GI sheet or thatched roof and earthen or wooden floor. Goats were allowed for grazing 3 - 4 hrs. daily in fallow / forest land. Farmers were feeding maize, marvel grass, guinea grass, hybrid napier etc. as green fodder. Leaves of banyan, jackfruit, mango, jamun, acacia pod, weeds etc. were also provided by farmers. Supplied pelleted feed was also provided @ 100 g twice daily to each goat. After exhaustion of supplied feed they were informed about feed formula for preparing concentrate mash feed consisting of maize crust (purchased), rice bran / wheat bran, ground nut cake (purchased), cotton seed cake (purchased), mineral mixture and common salt.

Routine deworming by broad spectrum anthelmintics and vaccination against PPR and Enterotoxaemia were done to prevent morbidity and mortality. Mineral & vitamin mixture was provided for overcoming deficiency, improving health and production. In case of illness of goat, facilities for diagnosis, treatment and medicine was provided by local LDO mostly and ourselves during our visit. Diagnosis was done on the basis of history, clinical symptoms and PM findings in case death of animal. Follow up visit to farmer's goat unit was made at two months interval for interaction, recording data, checking health of goats, deworming, distributing mineral

mixture for weak & debilitated goats and to solve the problems of farmers if any. Data on live weight, birth weight, milk yield, kidding %, mortality and disposal of goat were recorded as per standard procedure. We have supplied pan balance and graduated plastic container to the farmers for recording birth weight of kid and milk yield of doe. Live weight of adult goats and average daily gain of kids were recorded by us. Afterwards data were analysed statistically as per Snedechor and Cochran (8).

III. RESULTS

Survey of 105 resource poor farmers revealed that most of the farmers in Traimbakeshwar taluka were ST (100 %) and female (88 %) whereas most of the farmers in Ambegaon taluka were SC (100 %) and male (90 %). Average age of farmers in Traimbakeshwar and Ambegaon taluka was 37.1 and 49.1 years. Most of the farmers have secondary level education in both Traimbakeshwar (45 %) and Ambegaon taluka (50 %). Average family size in both the talukas was 6 and 4 respectively. Main profession of the farmers were agriculture in both the talukas ie Traimbakeshwar (96 %) & Ambegaon (60 %). Secondary profession of the farmers was daily wage in both the talukas ie Traimbakeshwar (58.34 %) & Ambegaon (30 %). Average land size of farmers in Traimbakeshwar and Ambegaon taluka was 2.34 and 1.10 acre. 30% farmers in Ambegaon taluka informed that they had no land. Hence, 45.46 % farmers of Ambegaon taluka reported that they do not produce any crop. Main crop cultivated was rice and main livestock reared in both the talukas were cattle. 24.14 % farmers in Traimbakeshwar taluka and 57.13 % farmers in Ambegaon taluka do not keep any livestock. Most of the farmers of both the talukas expressed interest about goat training, 49.95 % in Traimbakeshwar taluks and 40.28 % in Ambegaon taluka. Average annual income of farmers at the beginning of intervention at Traimbakeshwar and Ambegaon taluka was Rs 25,270/- and Rs 26,530/- respectively.

Based on survey, seven SC farmers at Valati & Thorandle villages, Ambegaon taluka, Pune on 7.1.21, five ST farmers at Zharwad village, Traimbakeshwar taluka, Nashik on 5.3.21, five ST farmers at Vinyaknagar village, Traimbakeshwar taluka of Nashik district on 25.8.21, seven SC farmers at Nagapur villages, Ambegaon taluka, Pune on 14.12.21 and ten ST farmers at Vinyaknagar village, Traimbakeshwar taluka of Nashik district on 30.3.22, so in total 34 resource poor farmers were selected randomly. Four trainings were conducted during this period physically at farmer's field. 398 farmers including 259 farm women were trained.

Average adult weight of male and female Osmanabadi goats was 23.470 ± 0.872 kg and 25.216 ± 0.691 kg respectively. So, far 48 kids were born from 27 kidding and average kidding per cent was triplet 7.41 %, twinning 62.96 % and single 29.63 % respectively. Average birth weight of kid was recorded to be 2.580 ± 0.234 kg. Average daily gain of kids was observed to be

108.45 ± 10.21 g / day. Average daily milk yield was found to be 475.60 ± 12.45 ml / day which was utilised for household consumption. So far 17 goats died during the reporting period due to PPR (6), pneumonia (5), enteritis (5) and abortion (1) with mortality rate of 7.80 %. So far six farmers sold ten goats and earned Rs. 58,500/-.



Fig-1 Deliberation of lecture by one resource person during training on 24.2.21



Fig-2: Input distribution programme



Fig-3: Farmer feeding maize fodder to her goats



Fig-4: Goats allowed for grazing in fallow land



Fig-5: Goats maintained in low cost shed

Table – 1: Monitoring of goat units, Advocacy Service & Interaction:-

Sl. No.	Year	Date of visit	Name of villages	Number of goat units visited	Amount of mineral mixture distributed	Amount of anthelmintics distributed	Number of farmers benefitted
1	2020-21	19.11.20	Zharwad	5	10 Kg	5 strips	8
2	2020-21	28.12.20	Valati, Thorandle	5	10 Kg	6 strips	9
3	2020-21	5.2.21	Vinyaknagar	10	24 Kg	9 strips	24
4	2020-21	23.2.21	Zharwad	5	10 Kg	5 strips	9
5	2021-22	10.8.21	Zharwad	10	17 Kg	8 strips	16
6	2021-22	11.8.21	Vinyaknagar	10	23 Kg	11 strips	26
7	2021-22	22.10.21	Valati, Thorandle	14	20 Kg	10 strips	18
8	2021-22	22.12.21	Vinyaknagar	15	30 Kg	13 strips	27
9	2021-22	9.3.22	Valati, Thorandle, Nagapur	14	30 Kg	15 strips	28
10	2021-22	31.3.22	Zharwad	10	24 kg	15 strips	20
	GT			98	198	97	185

The table indicated that the scientists visited farmer's field frequently even in Covid pandemic period, interacted with the farmers to solve the problems. They visited 98 goat units, distributed 198 kg mineral and vitamin mixture to the farmers for their weak, debilitated and pregnant goats. Even 97 strips of anthelmintics were distributed for deworming of goats.

IV. DISCUSSION

It was revealed from the survey that most of the farmers in Traimbakeshwar taluka were tribal women farmers in contrast to farmers in Ambegaon taluka who were SC and male mostly. Age wise it was observed that most of the farmers are younger in Traimbakeshwar taluka of Nashik district than the Ambegaon taluka of Pune district. Survey revealed that number of family members of the beneficiaries in Traimbakeshwar taluka was higher than that of farmers in Ambegaon taluka. It was observed that more land was available to the farmers at Traimbakeshwar taluka than that of Ambegaon taluka. Farmers in both the talukas were interested to undergo training on goat farming. It was also found that average annual income of farmers in Ambegaon taluka, Pune district (Rs 26,530/-) from all sources was slightly higher than that of farmers of

Traimbakeshwar taluka, Nashik district (Rs 25,270/-) in Maharashtra.

Thirty four resource poor farmers consisting of 14 SC and 20 ST farmers were adopted for the study. The productive performance of goat in the farmer's field was that the average weight of female was higher than that of male. Twinning % was recorded to be very high ie 62.96 %. In contradiction to present findings it was reported (4) that triplet, twinning and single per cent in Osmanabadi goat at Peint taluka of Nashik district were 4.85 %, 53.40 % and 41.75 % respectively. The twinning percentage in Osmanabadi goat in Vidarbha region was reported to be 10.52 % ranging from 0 – 26.31 % (7) which was much lower than the present findings.

Similar to present study birth weight of Osmanabadi kids was reported to be 2.20 to 2.38 kg in different housing systems in Konkan region of Maharashtra (2). Similarly it was reported (3) that birth weight of Osmanabadi goat in RCC semi open housing was recorded to be 2.445 ± 0.084 kg in coastal climate in Konkan region of Goa.

In the present study growth was found to be lower. However, growth of Osmanabadi goat in semi open housing in semi intensive system of management in organized farm in coastal climate of Goa was higher (122.86 ± 14.58 g / day) than the present findings (108.45 ± 10.21 g / day) in

farmer's field (3). Average daily milk yield (475.60 ± 12.45 ml / day) in the present study was reported to be higher than that of earlier study in Osmanabadi goat at Peint taluka of Nashik district (4).

In respect of mortality of goat in the present findings (7.80 %) which was lower than that of earlier findings (11.62 %) in Osmanabadi goat in Peint taluka of Nashik district under optimum housing, feeding and management condition of contradiction (4). The lower mortality in the present study was due to better adaptability of goat. The lesser amount of income was due to short duration of 1 year 5 months after initiation of project. Earnings of at least 50 % farmers will be expected more than double in next year. Monitoring was done once in every month and through ten follow up visits 185 farmers were benefitted by way of advocacy service and getting different inputs for the improvement of health of goats.

V. CONCLUSION

So, performance of Osmanabadi goat was moderate to good under optimum housing, feeding and management condition of farmers with almost zero input by them. Even farmers earned a good amount of money through selling of goats which helped them for livelihood improvement. It is expected that around 60 % farmers will attain doubling of income in next year. So, goat farming plays an important role for enhancing income of rural socio economically backward resource poor farmers particularly women farmers of Maharashtra.

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