

## RESEARCH ARTICLE

# Impact of Systematic Extension Approaches Towards Animal Health and Production in Karur District, Tamil Nad

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### ABSTRACT

*Livestock is an important component of farming system in India and a main income generation avenue to most of the small and marginal farmers. With this intention five villages in Karur district of Tamil Nadu were taken and a baseline survey was conducted to assess the livestock rearing pattern. The results indicated that 81 per cent of the respondents were started practicing deworming and vaccination to their animals, 73 per cent of the farmers started treating their animals in government dispensaries and health camps and 27 per cent of the farmers provided mineral mixture to their animals. Green fodder production area increased to 28 acres by 75 farmers approximately from 15cents to 0.5acres. 48 per cent farmers started to market the milk by direct sale and forming milk societies and sell the cow milk for Rs.38/- and 55/- for buffalo milk. Due to this the net return from the dairy animals become Rs.2700/- to 3600/- per month per animal. However, the adoption rate is low in scientific feeding management practices (31%).*

**Key words:** Livestock rearing; Extension approaches; Production & Productivity.

India is an agrarian country and more than 80% of the farmers are marginal and small farmers with mixed or integrated farming systems. Livestock is an important component of farming system in India. It is more popular among the marginal and small farmers as more than 62 per cent of marginal household directly associated with livestock sector (Das et al., 2020). Livestock plays a critical part in ensuring food security and serve as a risk-aversion strategy for maintaining families during times of crop failure (Channappa et al., 2023). The contribution of livestock is substantial in agriculture growth and households' income, especially landless, marginal, and small farmer (Meena et al., 2022). In mixed farming systems, animals draw their energy requirements from environment in the form of feed from by-products of crops, from cultivated green fodder and from grazing, and in turn, give back that energy in the form of food (milk, meat, and eggs), draught power, fuel, and manure (Dikshit & Birthal, 2013).

Even though livestock play a major role in small and marginal farmers' livelihood, there are many challenges faced by them in maintaining a healthy stock and running a profitable farming. There are many extension efforts taken by public and private sectors

to disseminate recent scientific animal husbandry technologies to farmers to increase the production and productivity of livestock in turn to improve the economic status of the farmers. Training interventions of KVKs had significantly influenced attitude of trained dairy farmers favourably toward dairy farming and it might be due to indirect effect of trainees' higher knowledge acquired through participation in training (Khode et al., 2018). With this idea, Veterinary University Training and Research Centre (VUTRC), and State Animal Husbandry Department, Karur district involved in development activity towards animal husbandry in turn improve economic status of farmers since the livestock farmers in the study area faced constraints in maintaining a healthy flock and low productivity status. So a package of programme is planned and implemented through different extension activities and this paper narrates the impact in dairy farming as well as the follow up of improved practices of dairy farmers.

### METHODOLOGY

To assess the scenario of livestock farming, VUTRC has selected five village panchayats in Manmangalam block of Karur district namely

Moolimangalam and Pandipalayam of Kagithapuram panchayat and Thadampalayam, Palamapuram, and Ponniankoundanpudur of Punnamsathiram panchayats and conducted a survey to find out the existing animal rearing pattern. To conduct the survey in the above said villages, all the farmers who own livestock were taken as the sample. Hence, a total of 170 farmers in Moolimangalam, 65 farmers in Palamapuram, 68 farmers in Thadampalayam, 48 farmers in Pandipalayam and 49 farmers in Ponniankoundanpudur, thus a total of 400 farmers was the sample size selected purposively. An interview schedule was prepared and edited to collect the data from the farmers to fulfill the different aspects of the objectives of the study and the data was collected by personal interview with the respondents. In addition to that, to assess the general health status of the animals, the dung and blood smear were collected randomly from animals and examined at Veterinary Training and Research Centre, Karur and the serum samples were sent to Central University Laboratory, Madhavaram Milk Colony, Chennai for screening of Leptospirosis and Brucellosis since the animals are frequently affected with bacterial and parasitic infections and being a cause for low productivity, low weight gain and high morbidity which is commonly unnoticed by the farmers. The survey findings and laboratory results were analysed are presented.

A post survey was conducted to study the impact of the extension activities conducted in the villages in terms of production, productivity and the changing scenario of practices in livestock farming. For this, a sample of 30 farmers in each village was selected randomly and totally 150 farmers were interviewed with a pre tested schedule. The survey results were analysed statistically and presented.

## RESULTS AND DISCUSSION

### Pre survey results

*Health status of the animals* : The health status of the animals was screened and presented in Table 1.

**Table 1. Health status of the animals**

Type of sample	No.	No. positive	Type of infection
<i>Cattle and Buffaloes</i>			
Dung	102	64	Single or mixed infection of strongyle, Moniezia, Trichuris ans oocysts of Eimeria species
Blood smear	44	7	Stray protoplasm of T. annulata
Serum	80	2+36	Brucellosis – 02 Leptospirosis – 36
<i>Goats</i>			
Dung	72	48	Single or mixed infection of strongyle, Moniezia, Trichuris ans oocysts of Eimeria species
Blood smear	28	-	-

From the screening results, it was found that both the small and large ruminants were affected with parasitic infection and indicates that periodical deworming and vaccination is must for better health and production. A meager percentage of cattle and buffalo population of the villages were also infected with Brucella and Leptospira organisms and periodical screening is needed in this area to improve the herd status. In addition to this, Foot and Mouth disease outbreak was noticed in Moolimangalam and Thadampalayam villages and also Ranikhet disease in desi fowls.

The health status of the animals also indicated that there is no regular deworming. If the animals loaded with worms, that in turn affect the health and performance of the animals.

*Production performance of the animals and the marketing methods*: From Table 2, it was found that 656 cows and 153 buffaloes were owned by the farmers of five villages. The average lactation yield of cow was 1819 lt and buffalo was only 869 lt. The animals were in milking for 265 days and 203 days for cows and buffaloes respectively. Since there are no milk co-operative societies available in the villages all

**Table 2. Production performance of dairy animals**

Village	No. of animals		Age		Total lactation yield		Lactation length	
	Cow	Buffalo	Cow	Buffalo	Cow	Buffalo	Cow	Buffalo
Moolimangalam	211	41	5.44±0.24	8.0±0.25	1800±106	896±24	245±31	186±24
Palamapuram	96	24	6±0	7.51±0.12	1752±79	784±12	274±40	210±12
Thadampalayam	174	21	6.84±0.15	8.23±0.11	1743±61	890±40	252±35	200±40
Pandipalayam	92	18	7.29±0.11	7.66±0.12	1906±96	904±25	280±40	215±25
Ponniankoundanpudur	83	19	6.60±0.41	8.0±0.10	1894±67	875±25	274±36	205±25
Average			6	7	1819	869	265	203

**Table 3. Knowledge level of farmers in scientific dairy management practices**

Practices	Knowledge level	
	Yes	No
Sheds for dairy animals	112 (28%)	288 (72%)
Balanced feeding	--	400 (100%)
Mineral mixture supplementation	12 (3%)	388 (97%)
Clean milk production	--	400 (100%)
Dairy value addition	--	400 (100%)
Farm waste recycling	--	400 (100%)
Azolla cultivation as dairy feed	--	400 (100%)
Biogas production from dairy waste	14 (3.5%)	336 (96.5%)

the farmers depended on local milk vendors and sold their milk only with the rate of Rs.21/- for cow's milk and Rs. 32/- for buffalo milk.

**Knowledge level of the farmers :** The knowledge level of the farmers in the new concepts exploring in livestock enterprises like azolla feed preparation, farm waste recycling (Table 3), Clean Milk Production and value added products from milk was totally zero whereas a meager percentage of farmers had an idea about mineral mixture supplementation (3%) and biogas production (3.5%). However 28 per cent farmers were knew about the housing for dairy animals.

**Constraints faced by the farmers:** The constraints were given in Table 4. Almost all farmers felt that lack of veterinary services, absence of veterinary dispensary and lack of regular veterinary health camps were the major constraints in maintaining proper health care of the animals. Similar findings were derived by Meena and Malik (2009). The cost of the feed followed by the absence of milk co-operative society were the next major constraints felt by the farmers in keeping the animals in a profitable manner.

The same was opined by Ganai *et al.* (2008) and Patil *et al.* (2009). Of course, the lack of knowledge of new practices and the high cost of treatment were also the constraints felt by majority of the people in the maintenance of livestock and the results are in line

**Table 4. Constraints faced by the farmers**

Particulars	No.	%
Lack of veterinary services	400	100
Absence of milk co-operative society	367	91.75
High cost of treatment	335	83.75
Lack of regular animal health camps	400	100
Lack of knowledge about new scientific practices	354	88.5
Absence of veterinary dispensary	400	100
High cost of feed	389	97.25

with Rajadurai *et al.* (2022).

From the results shown in Table 1, 2 and 3, it was found that 72% farmers were not following the scientific management practices in keeping the animals. They haven't provided scientific housing to their animals, not feeding in a balanced ration (100%) and didn't follow proper health care procedures like regular deworming and vaccination. This might be due to the lack of awareness in the scientific management practices and high cost of feed ingredients. From the results of production performance, it was found that the lactation yield and lactation length was low both in the crossbred cattle as well as in buffaloes. It might be due to the poor germplasm of the animals or the lack of proper management care. Absence of milk co-operative society is a problem for the farmers to sell the milk for decent price.

Since the farmers rearing animals in a traditional way, they were unaware of the new concepts in the livestock enterprises. This indicated that they haven't attended any training in the recent concepts of livestock farming. Poor information dissemination or knowledge leads to low adoption, underutilization of resources, exploitation by middlemen, poor market information and economic loss (Rao & Natchimuthu, 2016).

**Adoption level after the extension interventions and change in livestock farming scenario :** The adoption level of farmers in the study villages were interviewed after the implementation of extension activities and the results were shown in the Table 5.

Out of the different extension approaches, it could be observed that 81 per cent of the respondents were started practicing deworming and vaccination to their animals. If the animal became sick, the treatment was mainly done by the veterinarians than conventional methods (73%). Due to supplementation of mineral mixture by 27 per cent farmers the chances of

**Table 5. Adoption level of farmers after the extension interventions**

Parameter	Result	
	Yes	No
Feeding Concentrate (kg)	47(31%)	103 (69%)
Green fodder production	75(50%)	75 (50%)
Mineral mixture	40 (27%)	110 (73%)
Treatment through veterinarian	110 (73%)	40 (27%)
deworming and vaccination	122 (81%)	28 (19%)
Milk marketing by direct sale and cooperative society	72 (48%)	78 (52%)

infertility problems with their animals got reduced to 7 per cent. Green fodder production area increased to 28 acres by 75 farmers approximately from 15cents to 0.5acres. The farmers (48%) started to market the milk by direct sale and forming milk societies. Hence they could sell the cow milk for Rs.38/- and 55/- for buffalo milk. Due to this the net return from the dairy animals become Rs.2700/- to 3600/- per month per animal. The efforts resulted in feed cost reduction, raise in milk price, proper health care and improved knowledge in turn made the farmers elite and run a profitable dairy farming resulted an additional income to the small and marginal farmers even during crop failure time. The finding is in line with *Nargunde (2013)*, and *Sethumadavan (2017)*.

## CONCLUSION

The continuous efforts provided a positive result in the livestock management and farmers were motivated in scientific livestock rearing in the selected villages. Even though the farmers started following the practice of deworming and vaccination, still the adoption rate is low in other management practices. The improved practices in dairy farming were trained and enhanced the knowledge level of the farmers in scientific management practices in livestock rearing in the villages, but the farmers didn't show any interest to take up the technologies in their farming. It might be due to the constraints in time, resource and labour management. Also the low infrastructure and investment in farming activities made the farmers to limit their farming with less resources and functions. Hence along with trainings, a complete package programme for integrated dairy farming may be helpful to motivate the farmers to adopt clean milk production, azolla cultivation, bio gas plant installation and farm waste recycling. Farm Field Schools may be tried in inculcating the knowledge with enough subsidies may enhance the adoption level but mainly the procurement price for milk and organized livestock marketing channels are essential to strengthen the small holder livestock farming activities. Hence further extension programmes should be designed in

such a way to reach the farmers at their door steps that motivate them to implement the correct management practices for a healthy and productive livestock for a sustainable income.

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