



**Extent Of Adoption Of Recommended Scientific Practices In Cattle And Buffalo Farming Systems In Tamil Nadu, India\***

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**ABSTRACT**

*Dairy farming is a notable segment of the rural economy in India. In order to ascertain the technological aspects of small holder dairy farming in rural areas, this study was conducted to know about the extent of adoption of recommended scientific practices in Tamil Nadu, India. In this context, an overall sample size of 100 consisting of 50 farmers each in cattle and buffalo farming systems was drawn at Villupuram and Namakkal districts of Tamil Nadu, India by using proportionate random sampling method. The results revealed that all the respondents (100%) in both cattle and buffalo farming systems had adopted the practices of colostrum feeding, sanitary practice before and after milking, and treatment of sick animals by veterinarians under full adoption category. Partial adoption of practices was found in deworming of calf (78.00%) in cattle farming system and balanced feeding (70.00%) in buffalo farming system. Day old weaning of calf, schedule of activities to control calf mortality, using chaff cutter and conducting mastitis detection test were found under non-adoption category (100%) in both cattle and buffalo farming systems.*

**Key words: Adoption-Scientific-Practices-Cattle-Buffero-Farming-Systems-Tamil Nadu-India**

**I. INTRODUCTION**

India ranks first among the world's milk producing nations since 1998 and has sizable bovine population in the world. This robust scenario is the consequence of many dairy development programmes implemented in India earlier. In this regard, the landless labourers, small and marginal farmers and big farmers have all contributed remarkably. In India, marginal producers and small holder together hold about 78 per cent of the milking animals (Singh and Pundir, 2001). Consequent to this, the small holder dairy farmers have a major share in the prospect of rural economy in India. A cow or a buffalo's milk yield is linked to many factors viz., breed, feeding, health aspects and adoption of such recommended practices by the dairy farmers which has a critical role in determining the health status and economic returns from the dairy unit. Francis and Sibanda (2001) and Parthasarathy *et al.*, (2005) observed that awareness and rate of adoption of livestock-related technologies in small holder mixed farming systems worldwide is consistently low. Under this circumstance, it is felt worthwhile to study about the technological aspects of dairy farming in terms of extent of adoption of recommended scientific dairy farming practices in cattle and buffalo farming systems in Tamil Nadu, India.

**II. METHODOLOGY**

An overall sample of 100 consisting of 50 cattle farmers from three villages viz., Pakkam, RRRKulam, R.Pakkam in Kandamangalam block of Villupuram district and 50 farmers from the three villages viz., Oruvandharpudhur, Oddakathur, Ayyakalputhur in Mohanur block of Namakkal district in Tamil Nadu, India was selected by proportionate random sampling method after identifying the maximum number of cattle / buffaloes available in the state. The extent of adoption of recommended

scientific practices with the help of an interview schedule was collected and analysed. The adoption of recommended scientific practices has been categorised as full adoption, partial adoption and non-adoption so as to have in-depth knowledge of the practices.

### III. RESULTS AND DISCUSSION

#### 1. Adoption levels of respondents on scientific dairy farming practices

The extent of adoption of various dairy farming practices in the cattle and buffalo farming systems are depicted in the Table 1.

**Table 1 Adoption levels of respondents on scientific dairy farming practices**

S.No.	Scientific Practice	Cattle farming system ( n=50)			Buffalo farming system ( n=50)		
		FA %	PA%	NA%	FA%	PA%	NA%
	<b>Feeding</b>						
1	Allowing the new born calf for colostrum feeding	100	-	-	100	-	-
2	Quantity of milk fed to calves	8.00	22.00	70.00	24.00	28.00	48.00
3	Criteria of feeding a young calf	-	-	100	-	12.00	88.00
4	Feeding the animal based on milk production	6.00	62.00	32.00	4.00	64.00	32.00
5	Right time of feeding the animals	92.00	18.00	-	90.00	10.00	-
6	Quantity of concentrates, green fodder and dry fodder fed to the animal (balanced feeding)	8.00	56.00	36.00	18.00	70.00	12.00
7	Adding salt regularly in the cattle feed	4.00	26.00	70.00	20.00	24.00	56.00
8	Using chaff cutter to cut grass and feed the animals	-	-	100	-	-	100
9	Cutting the green fodder manually and feed the animals	-	40.00	60.00	-	14.00	86.00
10	Providing calcium in the form of lime water to avoid milk fever	10.00	16.00	74.00	24.00	16.00	60.00
11	Providing mineral blocks to animals	2.00	22.00	76.00	10.00	12.00	78.00
12	Feeding the cow/buffalo immediately after milking	-	14.00	86.00	10.00	16.00	74.00
	<b>Breeding</b>						
13	Practice of AI	86.00	14.00	-	60.00	24.00	24.00
14	Time of inseminating the animals after showing heat signs	90.00	10.00	-	80.00	20.00	-
15	Testing the animal for pregnancy	46.00	54.00	-	54.00	26.00	20.00
16	Right time of inseminating the animal after calving	6.00	14.00	80.00	54.00	46.00	-
	<b>Management</b>						
17	Ligating navel chord of new born calf	10.00	14.00	76.00	14.00	18.00	68.00
18	Day old weaning of calf	-	-	100	-	-	100
19	Dehorning of calf	14.00	6.00	80.00	-	-	100
20	Deworming of calf	22.00	78.00	-	52.00	24.00	24.00
21	Record keeping	-	20.00	80.00	82.00	18.00	-
	<b>Health</b>						
22	Following a schedule of activities to control calf mortality	-	-	100	-	-	100

23	Conducting mastitis detection test (strip cup test)	-	-	100	-	-	100
24	Washing the hands before & after milking	100	-	-	100	-	-
25	Washing the udder with antiseptic solution	6.00	10.00	84.00	10.00	18.00	72.00
26	Periodical vaccination	10.00	52.00	38.00	38.00	20.00	42.00
27	Treatment of animal by Vet's	100	-	-	100	-	-

**FA- Full adoption, PA-Partial adoption, NA- Non-adoption**

### **i) Full adoption**

The results indicated that all the respondents (100 %) were found to adopt full extent on the scientific practices viz., colostrum feeding, washing the hands before and after milking and treatment of animals by veterinarian in both cattle and buffalo farming systems. Next, majority of the respondents adopted the practices of right time of feeding the animals, right time of inseminating the animals and practice of artificial insemination in both farming systems.

In the buffalo farming system, record keeping, testing the animal for pregnancy, right time of inseminating the animal after calving, and deworming of calf were adopted fully in contrast to cattle farming system. It indicates that the important husbandry practices which have got direct bearing in the health aspect of animals were well received and adopted by the farmers.

### **ii) Partial adoption**

Feeding the animal based on milk production and balanced feeding were adopted partially by majority of the respondents in both cattle and buffalo farming systems. Deworming of calf, periodical vaccination and pregnancy diagnosis were adopted partially by majority of the respondents in cattle farming system. This result differs with the finding of Saini *et al.*, (2006).

### **iii) Non-adoption**

Non-adoption of practices were found on the following practices; day old weaning of calf, schedule of activities to control calf mortality, using chaff cutter and conducting mastitis detection test in both cattle and buffalo farming systems. Almost similar results were reported by HemaTripathi and Kunzru (2000), Misra *et al.*, (2006) and Roy *et al.*, (2007).

Considerable respondents did not adopt, washing the udder with antiseptic solution, ligating the naval chord of new born calf, feeding the cow after milking, calcium supplementation, adding salt in cattle feed, criteria of feeding young calf, quantity of milk fed to calves, cutting green fodder, and providing mineral blocks. In this context, strenuous efforts by extension agencies are certainly warranted to make the farmers adopt the above recommended practices. Moreover the dairy farmers would suffer in the long run because of non-adoption of recommended scientific practices like clean milk production practices which could lead to mastitis and cause economic loss. Further mineral supplementation is also essential to control infertility problems in bovines.

Another point of discussion which needs attention is the quantity of milk fed to young calves. Young calves should be fed milk based on 1/10<sup>th</sup> of its body weight, which comes around 2 litres / day / calf for a calf with 20 kg body weight, but in actual field condition, this is not so. The calves are fed less quantity of milk arbitrarily and the rest of the milk is sold to cooperatives / private agencies. Young calves should be fed adequate quantity of milk during the initial growing stages, which could lay a healthy foundation for a good milking mother in future. Hence the dairy farmers must understand these aspects and try to adopt them.

## **IV. CONCLUSION**

On the whole, the extent of adoption of recommended scientific practices in cattle and buffalo farming systems yielded mixed bag of results. The practices which were not adopted or partially adopted need to be raised to full adoption category. Hence the role of all agencies involved in livestock development is crucial in enhancing the adoption rate of recommended practices. Even though milk production in India has reached remarkable position in the world, the export potential of

India relating to dairy products requires giant tasks at the grass root level. In this regard, the dairy farmers are to be motivated strongly for adoption of recommended practices in order to attain the global standards.

Moreover, through adoption studies only, the extension faculty will become aware about whether technologies / methods have reached the intended end-user or not. Hence, it is also emphasized that adoption studies in dairy farming aspects demand continuous updating by the extension faculty concerned so as to understand about the dynamics of livestock production system in rural areas and also the role of dairying as one of the major livelihood enterprises of rural farmers in India.

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