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Impact of MAITRI training programme on knowledge level of rural youth in Tamil Nadu

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Abstract
The present analysis was carried out in the state of Tamil Nadu to assess the knowledge level of Multipurpose Artificial Insemination Technician for Rural India (MAITRI) trainees regarding livestock rearing practices and veterinary services. The analysis was done amongst 53 trainees who were attended one month training programme on various theoretical and practical aspects of livestock rearing and veterinary services at Veterinary College and Research Institute, Orathanadu during the year 2018-2019. A well structured interview schedule was prepared and collected data to find out the difference in their knowledge level both prior and after the training programme. The collected data was analysed by using percentage analysis and the findings expressed that more than 98.48 per cent of the trainees acquired high level of knowledge on feeding management and general management of livestock followed by 97.3 per cent of them gained high level knowledge on reproductive and breeding management of livestock after completion of the training programme compared to before training on the above aspects. Further, 96.58 & 95.14 per cent of the MAITRIs acquired high level of knowledge on general aspects of MAITRI training programme and disease management of livestock respectively. It concludes significant difference in knowledge of trainees due to the training programme. Hence, greater emphasise need to be given to similar training programmes for enlightening the knowledge level of Artificial Insemination Technicians.

Keywords: Knowledge level, MAITRI, training, Tamil Nadu, livestock rearing, veterinary services

Introduction
Tamil Nadu is an agriculture based state with livestock rearing as supporting livelihood option for landless, marginal and small farmers. Unfortunately, 2011 census shows that number of farmers doing agriculture farming becomes down when compare to the previous census *i.e* the population of 49.3% farming community in 2001 was reduced to 42.1% in 2011. This was due to number of factors *viz*. unavailability of labourer, disasters, seasonal variation, price fluctuations etc. However, livestock rearing is supporting as a sustainable source of income for the farming community and also support the farmers in lean period of agriculture farming. The state is bestowed with outsized number of livestock species but the productivity is not up to the mark because of unavailability of proper veterinary care and services. The function of livestock sector in supporting the livelihood of rural poor people is vital but unfortunately it was not fully realized as social and economic development (Pradhan, T.K. 2014). But in the current scenario, livestock farming business steadily agreed and preferred by rural youth up as a flourishing enterprise option thus plays an impetus role in providing employment opportunities and creation of self employment among rural as well unemployed youth. Hence, stipulation of sufficient livestock services is a prerequisite for increasing the production and productivity of livestock. Dispensaries and AI sub centres operated under the State Department of Animal Husbandry (SDAH), Govt of Tamil Nadu are the principal sources of providing veterinary services to livestock and owners. But these institutions mainly provide health services like treatment, vaccination, deworming, services on disease diagnosis, surgeries, gynaecology and obstetrics problems and artificial insemination but very limited extension services are being provided by these institutions. Hence, government realized that the role of village level field workers in providing insemination at the farmer's door step as well as extension services like delivery of needful information for the farmers. In this background, Government of India has taken an initiative through various schemes especially National Project on Cattle and Buffalo Breeding (NPCBB) project has developed private AI workers named as Multipurpose Artificial Insemination Technician in Rural India (*Maitris*) in all over the country. In this regard, State of Tamil Nadu is implanting this scheme through Tamil Nadu Livestock Development Agency with the motive of providing artificial insemination services,

vaccination at door step and also to provide sufficient information on the need of cross breeding, genetic up-gradation and scientific rearing of livestock. MAITRIs need to be supported with knowledge on livestock rearing practices in turn to educate farmers since knowledge occurs when an individual is exposed to some new thing or an idea and gain some understanding about the idea (Ray, 2011) [3]. Hence, assessing the knowledge level of MAITRIs is foremost important to provide right information at the right time for the right people, thus the study is being carried out with the objective of assessing the gain in knowledge level of MAITRIs after attending the training programme on various aspects of veterinary health care and breeding services.
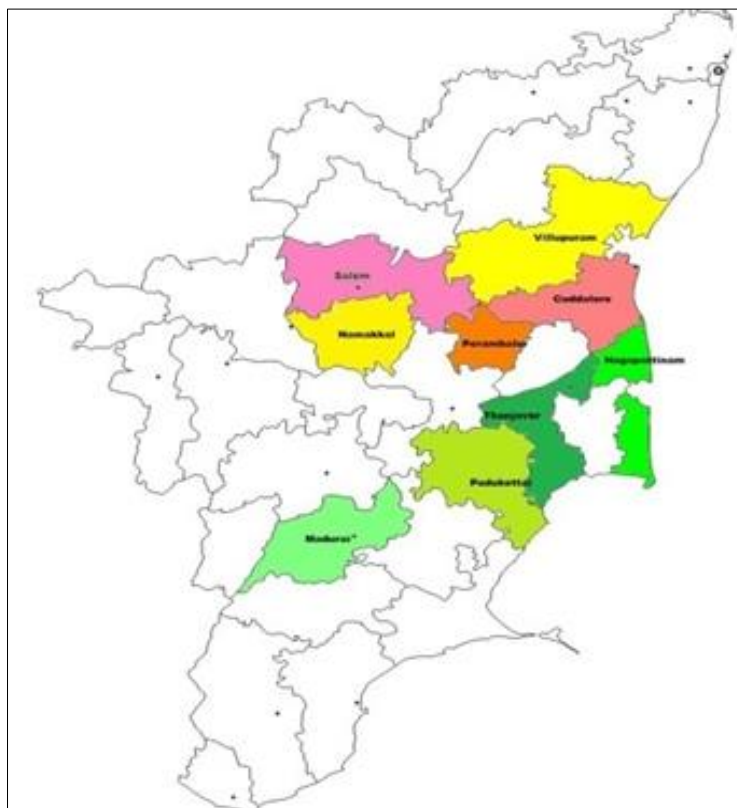
Materials and Methods
Study area
The present study was conducted in Veterinary College and Research Institute, Orathanadu, Thanjavur district during the year 2018-2019. One month training programme was provided to rural youth of Tamil Nadu state on Multipurpose Artificial Insemination Technician for Rural India (MAITRI) sponsored by Tamil Nadu Veterinary Livestock Development Agency (TNLDA) under National Programme for Bovine Breeding (NPBB) scheme.

Participants of the study
The present investigation was carried out among two batches of trainees 26 and 27 *i.e.* 53 unemployed youth from various districts of Tamil Nadu *viz.* Thanjavur, Pudukkottai, Nagapattinam, Madurai, Perambalur, Cuddalore, Villupuram, Kallakurichi and Namakkal were attended in the training programme from 25.04. 2018 – 24.05.2018 and 04.11.2019 to 03.12.2019 respectively. As per the norms of TNLDA, 10th standard passed as well as unemployed youth were selected as participants for the training programme.

Map Source: https://d-maps.com/carte.php?num_car=32343&lang=en

Fig 1: Map depicts the trainee's districts

Data collection tool
Though interacting with the subject matter specialists and experts from the department of Veterinary Gynecology and Obstetrics, VCRI, Orathanadu data collection tool *i.e* questionnaire was prepared. Based on the experts opinion the questionnaire comprises series of questions in vernacular language *i.e.* 40 open and closed ended questions regarding general aspects of MAITRI (5 items), livestock feeding (5 items), reproductive and breeding (14 items) and disease management aspects (7 items) and general management practices namely veterinary services namely livestock insurance, record maintenance, facilities for getting bank loan and state and central government schemes regarding livestock keeping (5 items) etc. The prepared data collection instrument was used to obtain data from the trainees both before and after completing the training programme.

Collection of data and statistical analysis
Focus group discussion was conducted to assess in depth knowledge level. The respondents were awarded a score of one for each correct and zero to incorrect answer. Knowledge gain is described as the difference between prior and after administering the interview schedule amongst the respondents. The knowledge index was computed for each trainee by applying the formula to assess the overall knowledge gain.

Knowledge index = Obtained score by a trainee / maximum obtainable score x100

The statistical analysis of frequency, percentage and mean, Standard deviation were applied and the obtained findings were discussed with appropriate references.

Results and Discussion

Knowledge gain of MAITRIs about general aspects of MAITRI training programme

With the objective of assessing the knowledge gain of MAITRIs on general aspects of MAITRI training programme 5 questions were included in the questionnaire for collection of information pertaining to the above said programme. Fig 1 revealed that the respondent's *i.e.* trainees had very low level of knowledge before attending the training programme. But, the training has huge impact on knowledge gain and it was described in the figure 1. Cent per cent of the trainees gained

knowledge on livestock breeding schemes of the government and about the MAITRI programme after attending the training whereas before training knowledge level was very less i.e. 34 and 28.3 per cent respectively. Further 98.1 per cent of them gained knowledge on the uses of MAITRI programme. 94.5 & 90.5 per cent of them were gained knowledge on TNLDA and role of MAITRIs in livestock farming respectively when compared to before training. These results clearly explains that the thrust of trainees towards attending the training programme and becoming an artificial insemination technician.
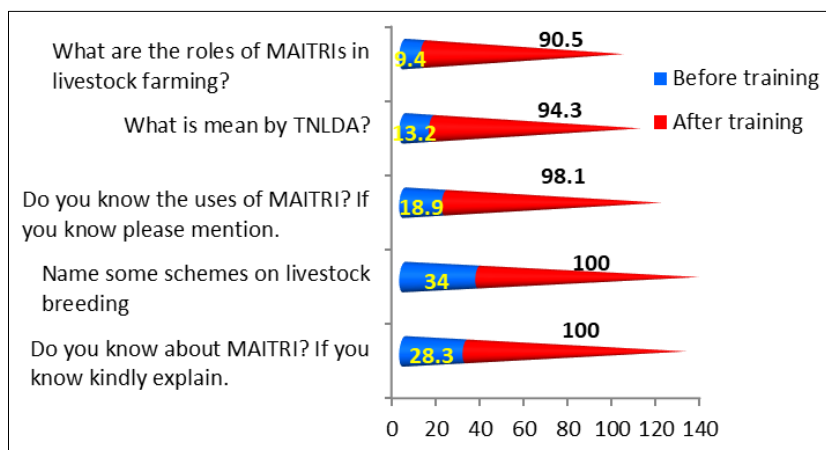

Fig 1: Gain in Knowledge level of MAITRIs about the training programme (n= 53)

Knowledge gain of MAITRIs on reproductive management

According to the opinion of subject matter specialists 14 questions regarding reproductive and breeding management were included in the questionnaire and assessed the knowledge gain based on the difference of answers before and after attending the training programme and the results are depicted in Table 1. With regard to the breeds of cows and buffaloes 77.35 per cent and 71.7 per cent of knowledge gain was observed as compared to before attending the training. Similarly, 73.4 per cent of knowledge gain was found regarding estrus cycle as compared to before attending the programme *i.e.* a meager 24.52 per cent. Likewise, 71.7 per cent and 69.81 per cent of the trainees gained knowledge on

gestation period of cows and buffaloes respectively.

Further, 98 per cent of the trainees gained knowledge on pregnancy diagnosis and 94.3 per cent of them gained knowledge on cross breeding techniques. Cent per cent of the trainees gained knowledge on theoretical and practical aspects of artificial insemination techniques and methods and post partum heat in dairy animals. Similarly, 98.11 per cent of the trainees gained knowledge on various aspects like difference between natural and artificial insemination, storage of frozen semen straws and common reproductive or breeding problems of dairy cattle. All these results clearly explains that the trainees interest and inquisitiveness towards leaning of artificial insemination techniques to become a successful inseminator.

Table 1: Knowledge on reproductive management

(n =53)

Sl. No	Questions	Score (1 for right answer, 0 for wrong answer)		Knowledge gain * Frequency (%)
		Before training Frequency (%)	After training Frequency (%)	
1	Can you name two breeds of cows?	12 (22.64)	53(100.00)	41(77.35)
2	Can you name two breeds of buffaloes?	15 (28.30)	53(100.00)	38(71.7)
3	What is mean by oestrus cycle?	13 (24.52)	52(98.11)	39(73.4)
4	What is the gestation period in cows?	12(22.64)	50(94.33)	38(71.7)
5	What is the gestation period in buffaloes?	14(26.41)	51(96.22)	37(69.81)
6	When do pregnancy diagnosis in dairy animals?	22(41.50)	52(98.11)	30(56.60)
7	What is the period of post partum heat?	18(33.8)	53(100.00)	35(66.03)
8	Do you know about cross breeding? If you know explain it	25(47.16)	50(94.33)	25(47.16)
9	What is mean by Artificial insemination?	22(41.50)	53(100.00)	31(58.49)
10	Name few differences between natural and artificial insemination	18(33.8)	52(98.11)	34(64.15)
11	What is mean by frozen semen straw?	10(18.9)	48(90.56)	38(71.69)
12	How to store frozen semen straw?	8(15.09)	52(98.11)	44(83.01)
13	What is mean by thawing of semen straws?	10(18.9)	51(96.22)	41(77.35)
14	Do you know any breeding problems of cattle? If you know please mention.	15(28.30)	52(98.11)	37(69.81)

* The difference of knowledge level among MAITRIs between before and after training (Figures in the parenthesis indicates percentage)

Knowledge gain of MAITRIs on feeding management
Regarding feeding management of livestock results were obtained on most important 5 questions which were included in the questionnaire. Fig 2 clearly explains that majority of the trainees were possessed low to moderate knowledge level on the above. However, after attending the training programme cent per cent of the trainees gained knowledge on balanced feeding and per day milk yield of cross breed cows. Further, 98.11 per cent of the trainees gained knowledge on concentrate feeding requirements and importance of providing

mineral mixture for dairy animals and also 96.22 per cent of the MAITRIs were gained knowledge on the requirement of green and dry fodder for dairy animals. These findings explain that the trainees understood about the cost of livestock rising and it mainly depends on feeding management. Knowledge gain on feeding management of livestock will be very much helpful for the artificial inseminators while advising farmers and doing bottom level filed oriented extension activities.
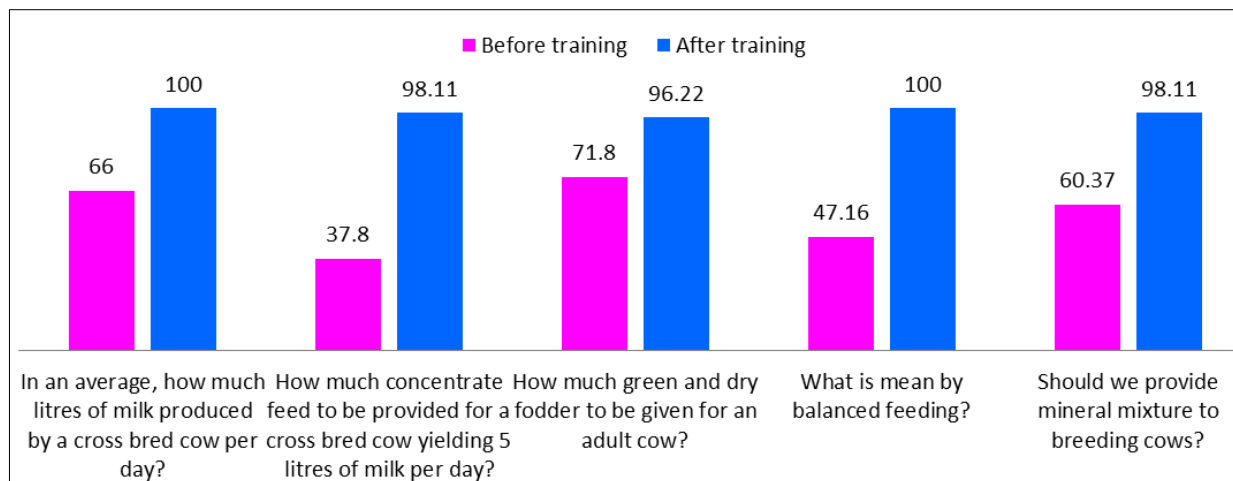

Fig 2: Knowledge level of MAITRIs on feeding management (n=53)

Knowledge gain of MAITRIs on disease management
Gaining knowledge on disease management of livestock has utmost important since they are working in the field, they need to communicate the sudden outbreak of diseases or unusual animal health ailments to the veterinary officers and to be educated the livestock farmers about preventive measures. With regard to disease management of livestock almost all the respondents gained knowledge on common disease affecting livestock followed by vaccination scheduled (98.11 per cent) and diseases which are likely transmitted through natural service. 94. 33 per cent of the trainees expanded their knowledge level on the problems of internal and external parasites and deworming schedules of livestock. Likewise, more than 90 per cent of the trainees gained knowledge on zoonotic diseases which are transmitted from animals to humans as well as humans to animals.

Knowledge gain of MAITRIs on general management
General managemental information on livestock farming is essentially required for the artificial inseminators since they are the easily approachable functionaries for the farmers at their door step. Hence, they need to be acquired knowledge on various aspects of general management namely, how to identify animals, how to calculate age of dairy animas, how to get bank loan and subsidies and insurance of livestock. With this background data were collected on the above said aspects from the trainees to assess the knowledge gain. Fig 4 explained that there was a significant improvement in knowledge gain *i.e.* cent per cent of the trainees gained knowledge on identification methods of livestock and government schemes for livestock rearing. Further, nearly cent percent 98.11 per cent of them were gained knowledge on insurance of cattle and getting bank loan for enhancing the business and also 96 per cent of them gained knowledge on calculating age of cattle.
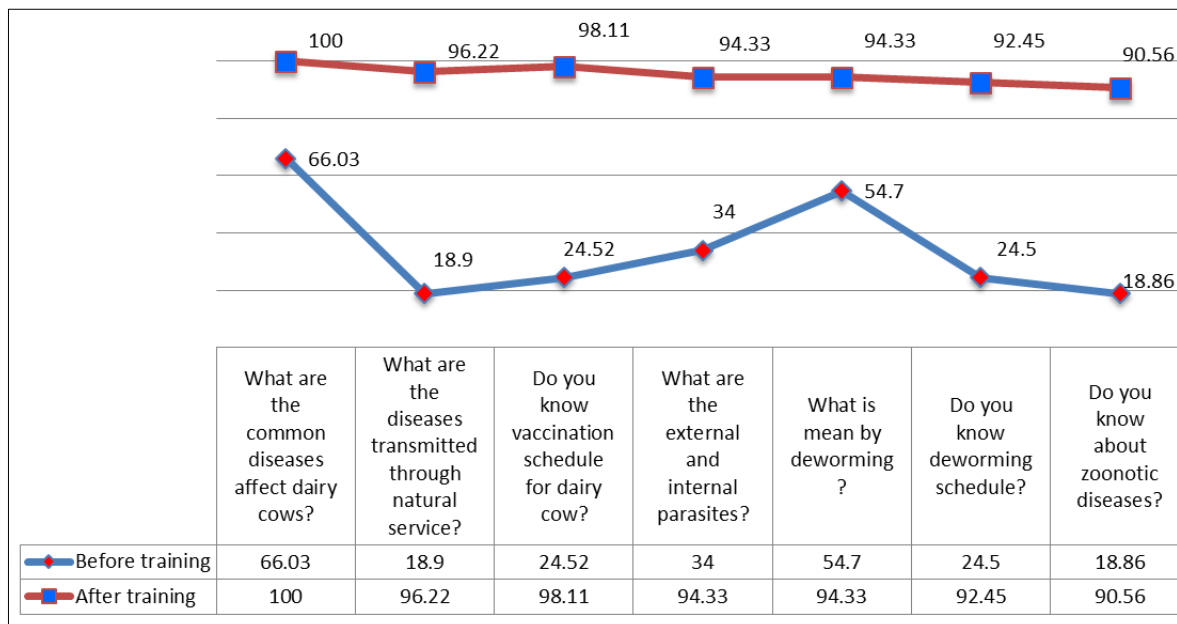
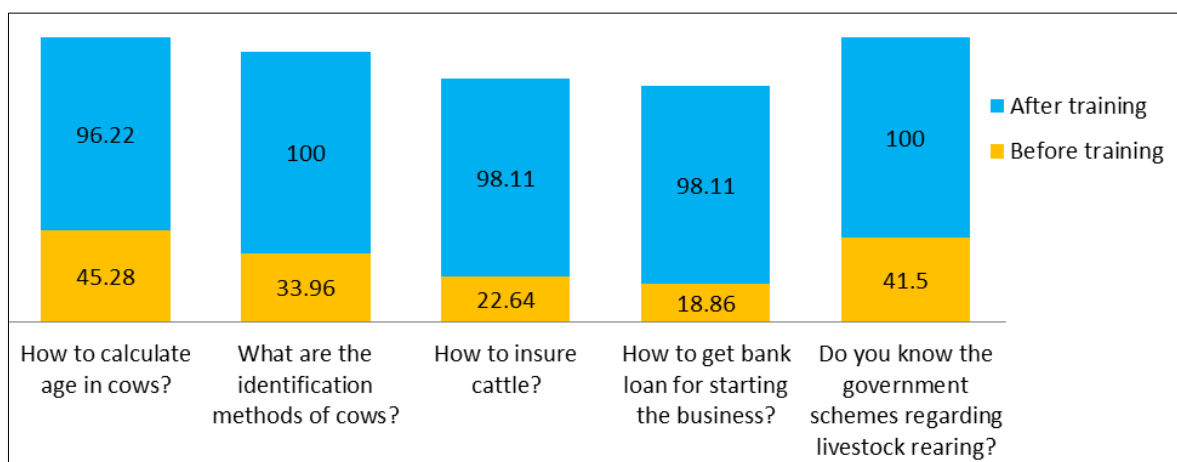**Fig 3:** Gain in knowledge level of MAITRIs on disease management

Fig 4: Gain in knowledge level of MAITRIs on general management (n=53)

Knowledge index to assess overall knowledge gain of MAITRIs about the training programme

Fig 5 clearly indicates that there is significant difference in knowledge level of the trainees in all 5 aspects of training programme as compared to after completing one month programme. First of all 98.48 per cent of them gained knowledge on general management practices and feeding management of livestock. Similarly, 97.3 per cent of the trainees obtained high level of knowledge on reproductive and breeding management of livestock. Further, 96.58 per cent and 95.14 per cent of the trainees gained knowledge on general aspects of training programme and disease management of livestock respectively as compared to before attending training programme. All these findings clearly explain that there is high level of interest and thrust of becoming an artificial inseminator or technician among the trainees.
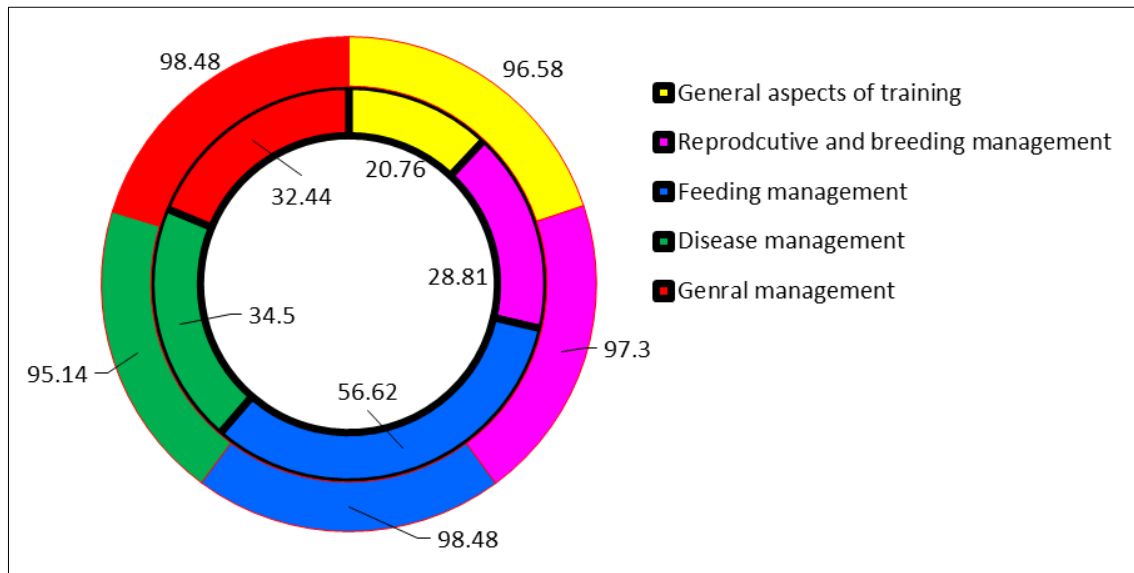
Fig 5: Overall knowledge gain about the training

Conclusions
This present study concluded that the MAITRIs gained significant increase of knowledge on various aspects of livestock farming activities. Especially they have gained high level of knowledge on breeding and reproductive management, feeding management, disease management and general management practices of livestock. Hence, their knowledge level can be well utilized for educating the farmers at their door step. Further efforts need to be taken to utilize the inseminators or technicians effectively in the field by the concerned functionaries.

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References
1. Chandraker K, Das BC, Swain P, Shweta K, Swain DP. Performance of Maitris in Delivering Veterinary Services in Chhattisgarh. Int. J Curr. Microbiol. App. Sci. 2018;7(10):1640-1645.
   DOI: https://doi.org/10.20546/ijcmas.2018.710.186
2. Khode N, Singh BP, Chander M, Bardhan D, Verma MR, Singh Y. Impact of training intervention on knowledge level of trained dairy animal owners: an application of Propensity score matching method. Int. J Agricult. Stat. Sci. 2018;14(1):285-291.
3. Ray GL. Extension communication and management. Kalyani publishers, 8th revised edition, 2011.
4. Chandraker K, Das BC, Swain P, Senapati S. Knowledge of MAITRIs on Livestock Breeding Services in Chhattisgarh. Indian Veterinary Journal. 2018;95(04):70-72.
5. Swain DP, Das BC. Performance of Gomitra in delivering veterinary and animal husbandry services in Jagatsinghpur district of Odisha. Unpublished thesis submitted to Orissa University of Agriculture and Technology, Bhubaneswar, Odisha, 2016.