Factors Leading to Change in Farmers' Attitude towards Artificial Insemination

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ABSTRACT

The present study was carried out in Mathura district of Uttar Pradesh to study the effect of selected factors on the change in attitudes of farmers towards artificial insemination. All the farmers own cattle or buffaloes and a message on artificial insemination was communicated to them by using suitable audio-visual aids. The attitudes were measured before and four weeks after their exposure to the message. The results show that the attitude change was in favourable direction for the livestock owners who did not use artificial insemination technology in their animals, who dwell beyond 5 km radius from the artificial insemination centre, who have never used artificial insemination technology in their animals and among livestock owners of Farah, Mathura and Goverdhan blocks.

Key words : *Attitude; Artificial insemination; Attitude change;*

In India seventy percent of the livestock is owned by sixty seven percent of small farmers, marginal farmers and agricultural labourers or landless labourers reveals that the equitable distribution of livestock wealth among various sections of the society who are rearing farm animals with low growth rates, late maturity, low reproductive efficiency, poor production, etc. (*Rao, 1998*). The milking capacity of Indian cattle is very less yielding between 1-2 Kg milk/day and nearly 450-500 Kg milk/lactation. This yielding potential can be increased by improving the genetic potential of the livestock, which is possible through artificial insemination.

Artificial insemination technology has several advantages over natural service, viz., it is economic, genetic improvement of animals can be performed in a relatively short duration, semen of proven sires can be utilized in a better way, elimination of non-descript animals in relatively short period and large scale multiplication of characters can be done in a single step.

Despite a number of advantages of artificial insemination the adoption rate is still very less due to a number of reasons, viz., livestock owners misconceptions, superstitions, and doubts regarding artificial insemination, distant location of artificial insemination centre, poor detection of heat by the farmers, farmers do not spare time to take their animals to the artificial insemination centre, cost factors, etc. Hence, this study reports the effects of various selected factors on the changes in attitudes of farmers towards artificial insemination. The purpose is to understand these effects and to identify them for practical purposes.

METHODOLOGY

This study was carried out in Mathura district of Uttar Pradesh. There are 10 blocks in Mathura district. Each block was divided into two strata with one stratum comprising villages situated within 5 km radius from the artificial insemination centre and the other of those villages which are situated beyond 5 km radius from the artificial insemination centre. One village was selected randomly from each stratum. From each village, 15 farmers were selected by random sampling. In this manner, 300 farmers were taken up for study. All the farmers were owners of cattle or buffaloes and were aged 25 to 40 years.

The message was designed to give complete information on artificial insemination, i.e., what is artificial insemination, why is it necessary, advantages and limitations of artificial insemination, advantages of crossbred animals, oestrus cycle in cattle/buffaloes, signs of heat, age of puberty, easy ways to detect signs of heat in animals, suitable time to get animals artificially inseminated, suitable time to get animals artificially

inseminated after parturition and misconceptions, superstitions and doubts of farmers regarding artificial insemination technology, etc.

The particular message was designed in local language, i.e., Hindi, so that it can easily be readable and understandable by the farmers. The designed message was focused on the behavioural changes expected from the farmer. For administration of the message suitable audio-visual aids were also used in this study. To have a greater impact of message on the farmers, individual, group and mass contact methods were used. Under individual and group contact methods all the farmers of the concerned village were requested to assemble together, either at the artificial insemination centre of that area or at a particular place in that village itself. During administration of the message, suitable audio-visual aids like charts were used containing complete information regarding artificial insemination. Leaflets were also distributed to the farmers at the end of the meetings. For illiterate farmers the message was conveyed through suitable diagrams drawn on charts.

Under mass contact methods, the same message was disseminated to the farmers *via* radio in the form of group discussion thereby making more impact of the message among the livestock owners as well as to increase its faith in the artificial insemination technology. The message was disseminated to the livestock owners' twice.

Attitude is a mental position related to thinking, feeling or reacting for or against a psychological object. Being a psychological component, the human mind takes sufficient time to evaluate the technology by discussion among the participants. Hence, post evaluation of attitude was done four weeks after their exposure to the message. This enabled them and provided them with sufficient time to discuss the message with their peer groups, families etc.

The scale is of Likert type developed by *Koura and Singh (1968)* was used to measure the attitudes of livestock owners towards artificial insemination technology. The attitudes were measured before exposure to the message and four weeks after exposure.

RESULTS AND DISCUSSION

Attitude change among different blocks: The mean attitude change scores among the 10 blocks is presented in Table 1. The livestock owners of Farah block had significantly more favourable attitude change as compared to livestock owners of Naujheel, Chhata and Nandgaon blocks. However, the livestock owners of Mathura block had comparatively higher favourable attitude change as compared to livestock owners of Baldeo, Raya, Math and Choumah blocks. The livestock owners belonging to Goverdhan block also had significantly more favourable attitude change towards artificial insemination as compared to livestock owners of Naujheel, Chhata, Nandgaon, Raya, Math and Choumah blocks. This shows that the livestock owners of Farah, Mathura and Goverdhan blocks had significantly more favourable change in their attitudes towards artificial insemination, as compared to livestock owners of other blocks. This difference might be due to a number of factors *viz.*, prior exposure to knowledge of artificial insemination technology, availability of semen, distance of artificial insemination centre, contacts with extension agencies as well as on the socio-economic status of livestock owners.

Table 1. Mean attitude change scores among different blocks (n = 30 each)

Blocks	Mean attitude change scores*			S.D.
Baldeo	4.26			1.58
Naujheel	2.73			2.35
Chhata	2.90			3.77
Farah	5.33			3.12
Nandgaon	2.80			3.88
Mathura	7.16			4.38
Raya	3.73			3.56
Goverdhan	5.73			2.79
Math	3.50			2.90
Choumah	3.56			4.87
ANOVA				
Source	d.f.	S.S.	M.S.S.	F-value
Between groups	9	580.32	64.48	5.33**
Error	290	3506.66	12.09	

**Significant at 1% level of significance.

Attitude change in relation to use of artificial insemination : The results in Table 2 show that before the communication of the message, 211 (70.33%) livestock owners used artificial insemination technique in their animals whereas 89 (29.67%) livestock owners replied that they had never used it. After the message, it was found that 218 (72.67%) livestock owners used artificial insemination technique in their animals whereas 82 (27.33%) did not use it. Similar findings have also been reported by *Singh (1978); Nataraju and Channegowda (1984) and Dixit and Sinha (1993).*

The calculated t-value was found to be significant

at 1% level of significance among both the categories of livestock owners in relation to use of artificial insemination technology in their animals. It shows that the livestock owners who did not use artificial insemination technology in their animals showed more attitude change in the favourable direction as to livestock owners who use it.

Table 2. Mean attitude change scores regarding use of artificial insemination technique in their animals

Ever used AI tech. in their animals	N	%	Mean attitude	S.D.	t-value
Yes	218	72.67	3.73	3.39	3.378**
No	82	27.33	5.23	3.80	

**Significant at 1% level of significance.

Table 3. Mean attitude change scores of livestock owners in relation to distance of the artificial insemination centre

Distance (km)	N	%	Mean attitude	S.D.	t-value
0-5	150	50	3.64	3.18	2.48**
5-10	150	50	4.70	4.22	

**Significant at 1% level of significance.

Table 4. Mean attitude change scores regarding availability of semen

Blocks	Availability of semen			
	Yes	No	No response	
N	137	116	47	
%	45.67	38.67	15.67	
Mean attitude change scores	3.41	4.60	5.31	
S.D.	3.86	3.33	3.35	
ANOVA				
Source	d.f.	S.S.	M.S.S.	F-value
Between groups	2	161.73	80.86	6.11**
Error	297	3925.25	13.21	

**Significant at 1% level of significance.

Attitude change in relation to distance to the artificial insemination centre: The results in Table 3 show that the attitude change was more in livestock owners situated beyond 5 km from the artificial insemination centre. It shows that the message communicated to the livestock owners had more impact on those livestock owners who are situated beyond 5 km radius from the artificial insemination centre as compared to those who are situated within 5 km radius. This might be due to the fact that the livestock owners situated within 5 km radius from the artificial insemination centre were aware about the facts of artificial insemination, while livestock owners who were not aware about these due to distant location and misconceptions, superstitutions and other related factors might have influenced them to get their animals conceived by natural service in the fields during grazing. Studies conducted by *Saini (1975); Dana (1987) and Singh and Singh (1988)* also reported similar findings.

Table 5. Mean attitude change scores in relation to number of inseminations required for conception

	Number of inseminations required for conception							
	1	2	3	4	5	6	7	8**
N	10	59	32	60	25	9	16	89
%	3.33	19.67	10.67	20	8.33	3	5.33	29.67
Mean attitude	2.50	3.25	4.65	3.98	2.44	4.33	4.81	5.28
S.D.	2.40	3.30	4.58	3.17	2.45	3.90	1.52	4.05

**Have not used artificial insemination technology in their animals.

ANOVA				
Source	d.f.	S.S.	M.S.S.	F-value
Between groups	7	278.52	39.78	3.05**
Error	292	3808.46	13.04	

**Significant at 1% level of significance.

Attitude change regarding availability of semen at the artificial insemination centre : The results in Table 4 show the change in attitude of livestock owners as per their responses to the question, "Is semen always available when you go to get your cows inseminated at the artificial insemination centre?. Those who gave "No" response to the question of semen availability had significantly higher mean attitude change score as compared to those who said "Yes". The category of "No response" might have been of those who did not avail the facilities of artificial insemination but were not willing to declare it publicly; this category showed more change in the favourable direction than those who reported that semen was available. In addition, those who reported that semen was not available also showed greater change in a favourable direction than those who reported that semen was available. This shows that the message did work towards the favourable direction more in case of "No" and "No response" categories.

Attitude change in relation to number of inseminations required for conception: The results in Table 5 show the change in attitude of livestock owners towards artificial insemination as per their

responses to the question, "How many inseminations were required to make your animals conceived through artificial insemination ?. The results show that majority of the livestock owners conveyed that their animals get conceived after 4 inseminations, 19.67% livestock owners reported 2 inseminations/conception, 10.67% reported 3 inseminations/conception, 8.33% reported 5 inseminations /conception, 5.33% reported 7 inseminations/conception, 3.33% reported 1 insemination/ conception and 3% reported 6 inseminations/conception.

The livestock owners who reported that their animals required five inseminations/conception had significantly less favourable attitude change as compared to those who reported three inseminations/conception. This shows that the message could influence attitude change for the increase of reasonable favourable experience in the technology. Those who have not used artificial insemination technology in their animals showed higher favourable attitude change than those who reported 1, 2 or 5 inseminations/conception. This shows that the message has been more effective in case of non-adopters.

CONCLUSION

The results show that there is a need to give greater emphasis to educate the farmers on complete information regarding artificial insemination. Such information packages should be made available at veterinary hospitals, livestock extension centres, etc. vis a vis popularization of technology through mass media channels should also be undertaken. The artificial insemination centres should be opened in close proximity to the villages and layman inseminators /paravets should be trained to carryout artificial insemination activities in their corresponding villages. The castration of scrub non-descript bulls and male calves should be strictly followed by the veterinary officers. Efforts should also be made to ensure timely availability of semen and liquid nitrogen at the veterinary hospitals. Extension efforts should also be undertaken to motivate the farmers for adoption of artificial insemination technology.

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