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Educational mechanisms in enhancing livestock nutrient management

Seyed Jamal F. Hosseini and Marzieh Arab Ameri

Department of Agricultural Extension and Education, Tehran Science and Research Branch, Islamic Azad University, Tehran, Iran

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ABSTRACT

The major purpose of this study was to identify educational mechanisms in enhancing livestock nutrient management in the Garmsar Township of Semnan Province. The total population of study was all 110 livestock unit managers in the Garmsar Township. The data was collected by using questionnaire through using interview method. The findings of this study indicated that majority of respondents believed group teaching methods increase their knowledge level. Respondents indicated that the newspaper was determined as the most effective mass teaching methods in helping them to increase knowledge, skills and change attitudes. The results demonstrated that respondents preferred face to face meetings as the most important individual teaching methods. It was also reported that educational classes was the most effective group teaching methods.

Keywords: Mass Teaching Method, Group Teaching Method, Individual Teaching Method, Nutrient Management, Livestock

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INTRODUCTION

The importance of agricultural extension in helping and persuading farmers to adopt technologies should not be ignored. Extension plays a critical role in mediating between farmers and researchers [1]. Extension organizations have a key role in capacity building, raising awareness, increasing knowledge and enhancing the skills of farmers[2].

The extension-teaching methods can help rural population to extend new knowledge and skills and helping them to have a successful experience of the new practice. The teaching methods can be classified based on their use: individual contacts, group contacts and mass contacts. Extension-teaching methods are also classified according to their forms, such as written, spoken and audio-visual.

Agriculture extension in Iran like many developing countries faces the problem of lack of knowledge and skills among beneficiaries. Livestock owners as a part of extension stakeholders need new knowledge and better skills to overcome the issue of increasing quantity and improving quality of livestock.

Based on reports by some researchers, major part of expenses in producing livestock is nutrients cost and in some instances more than 80 percent of the total cost of producing livestock is related to nutrients.

FAO in a study about nutrient management for animals in small size farms reported that nutrient management is a science and art of managing nutrients needs of animals [3].

Javanrooh and others indicated that major problems among livestock owners in management of their livestock units were weak technical knowledge and this resulted in lack of utilization of new findings[4].

In a research about assessment of educational courses for livestock owners, it was concluded that adaptability of educational contents with actual needs would increase knowledge level and skills of participants[5].

Fasset in a study about knowledge level of dairy producers show that education classes have improved and enhanced knowledge and skill levels of participants [6].

Bell et al (2005) in a study about different methods in diffusion of knowledge and information among livestock owners in Tanzania has pointed to this fact that changes in knowledge level of units mangers contributed in changes in management of their livestock units [7].

In a study by Ghasemi and Hajimirrahimi about educational needs nomad of about nutrient management, respondents indicated that educational needs of cattle breeders about nutrient management should be considered [8].

Currently, there are 110 livestock units are operating officially in Garmsar and fifteen, eighty five and ten are industrial, traditional and semi industrial units respectively. The total number of livestock is 17234 heads. Although, livestock units in this township spend a large amount of money for feeding animals, but there is still nutrient deficiency and this would lower the quality of dairy and meat production.

Garmsar Township due to its close proximity to Tehran, has a great potential to provide livestock productions, but lack of necessary knowledge and skill has hindered in increasing and improving the quantity and quality

Therefore, understanding the role of extension activities which would help livestock owners in increasing knowledge and enhancing skills about livestock nutrient management in the township of Garmsar in Semnan Province was investigated in this research.

MATERIALS AND METHODS

This research was an applied type research and descriptive/correlative method was used. The total population of study was all 110 livestock unit managers in the Garmsar Township. The data was collected by using questionnaire through using interview method.

The final questionnaire was divided into five sections. The first section was designed to gather information about personal characteristics of respondents. The second section dealt with questions about knowledge level of respondents regarding feed management. The questions about skill level were asked in the third section. The fourth section provided questions about attitudes of respondents about appropriate feed management. The last section dealt with questions about role of extension methods in increasing knowledge, skills and changing attitudes of respondents. Questions were presented in a 5-point Likert format. The variables and their measurement scale are presented in Table1.

Table 1: Variables and their measurement scale

Variables	Measurement Scale
Knowledge level	Five- point Likert
Skill Level	Five- point Likert
Attitudes	Five- point Likert
Extension methods	Five- point Likert

A panel of experts from Islamic Azad University, Science and Research Branch confirmed the face and content validity of questionnaire. Minor wording and structuring of the instrument were made based on the recommendation of the panel of experts.

A pilot study was conducted to determine the reliability of the questionnaire for the study. Computed Cronbach's Alpha score was 89.0%, which indicated that the questionnaire was highly reliable.

The data was analyzed by using descriptive and analytical methods. Dependent variable in the study was determined to be role of extension methods in changing attitudes and increasing knowledge, skill level of respondents. The independent variables in this research study were knowledge level, skill level and attitude of respondent. For measurement of correlation between the independent variables and the dependent variable correlation coefficients have been utilized and include Pearson test of independence. The stepwise regression method was also used to explain the variance in the perception of respondents about role of extension methods in feed management.

RESULTS AND DISCUSSION

The result of table 2 summarizes the demographic profile and descriptive statistics. The results of descriptive statistics show that mean age of respondents was 36 years old. Less than half of respondents had earned a high school diploma and only five percent were illiterate. The mean of working experience was less than 2 years. This is an indication of respondents in the middle age and with few years of experience in this field.

Table 2: Personal Characteristics

Sex	Male (100%)
Age/year	Mean=36.2
Degree	High school Diploma (41.8%)
Work experience/years	Mean=1.68

The perception of respondents about the knowledge level of respondents about nutrient management was displayed in table 3. The highest mean refers to knowledge level about methods of keeping animal foods (mean=3.78) and the lowest mean was to knowledge about advantages of auto feeders(2.45).

Table 3: Means of respondents' views about their knowledge about nutrient management (1=Very Little, 5=Very Much).

Statement	Mean and Standard Deviation	
	Mean	SD
Knowledge about methods of keeping animal feeds	3.87	0.90
Knowledge about nutrient contents of animal feeds	3.69	0.91
Knowledge about economic value of animal feeds	3.58	0.93
Knowledge about animal diseases	3.49	0.91
Knowledge about impact of humidity on animal feeds	3.38	0.91
Knowledge about factors that damage the silos storing animal feeds	3.01	0.88
Knowledge about advantages TMR animal feeds	3.09	0.99
Knowledge about methods of storing animal feeds	2.95	1.06
Knowledge about advantages of auto feeders	2.46	1.34

Based on the perception of respondents, their skill in producing TMR was the highest in table 3 (mean=3.29), while their skills in application of auto feeders was determined to be the lowest (mean=2.36).

Table 4: Means of respondents' views about their skill about nutrient management (1=Very Little, 5=Very Much).

Statement	Mean and Standard Deviation	
	Mean	SD
Skill about producing TMR	3.29	0.92
Skill in controlling diseases in silos	3.28	0.96
Skill in decreasing the cost of animal feeds	3.25	0.84
Skill in identification of disease	3.20	0.90
Skill in analyzing economic values of animal feeds	3.15	1.16
Skill in application of auto feeders	2.36	1.30

The respondents indicated that their interest about acquiring information about appropriate method of feeding animal was the highest in table 5 (mean=4.64) and their interest in application of auto feeders was found to be the least important (mean=4.09).

Table 5: Means of respondents' views about their attitude about nutrient management (1=Very Little, 5=Very Much).

Statement	Mean and Standard Deviation	
	Mean	SD
Interested in acquiring information about appropriate feeding of animals	4.63	072
Interested in economic analysis of animal feeds	4.44	0.69
Interested in decreasing cost of animal feeds	4.36	0.74
Interested in acquiring knowledge about constraints in consuming feeds by animals	4.44	0.72
Interested in learning about new methods of diet	4.28	0.75
Interested in application of auto feeders	4.09	1.07

Slightly less than half of respondents (48.2%) reported that mass teaching methods had increased their knowledge about nutrient management, and newspaper was found to be the most important among mass teaching methods. The results regarding role of mass teaching method on skills and attitudes show that more than 47 percent and 36 percent of respondents confirmed this method have increased and changed their skills and attitude respectively. Newspaper was determined to be the most important mass method in increasing skills and changing attitudes.

In regard to role of individual teaching methods, more than 46 percent indicated that this teaching method had increased their knowledge about nutrient management and among individual teaching methods, face to face meeting was determined as the most important. Less than half of respondents (49%) and about two third of respondents (33%) indicate the importance of individual teaching methods in increasing skills and changing attitudes respectively. It was also reported that face to face meeting was considered the best individual teaching method in increasing skills and changing attitudes.

Majority of respondents (50%) indicated that group teaching methods had helped them to increase their knowledge about nutrient management and educational classes was the most important individual methods. Respondents indicated the importance of group teaching methods for increasing skills (52%) and changing attitudes (45%) and preferred educational classes as the best group teaching methods.

Spearman coefficient was used to measure the relationship between independent variables and dependent variable. Table 6 shows that there was relationship between perception of respondents about role of mass, group and individual teaching methodsas independent variables and increasing skill as dependent.

Table 6: Correlation measures between independent variables and dependent variable

Independent variables	Dependent variable	r	p
Group teaching methods	Increasing skills about nutrient management	0.239	0.016*
Individual teaching methods	Increasing skills about nutrient management	0.228	0.021*
Mass teaching methods	Increasing skills about nutrient management	0.228	0.022*

***p<0.05*

Table 7 shows the result for regression analysis by stepwise method. The result implies that 14% of the variance in the perception of respondents could be explained by role mass teaching methods in increasing skills (Beta coefficient: 0.380, sig.: 0.000). Other variables were not statistically significant.

Table 7: Multivariate Regression Analysis

	B	Beta	T	Sig.
Constant	0.259	-------	7.836	0.000
Mass teaching methods	0.276	0.380	3.870	0.000

R^2=. 14

As the regression analysis showed, mass teaching methods caused 14% of variance on the perception of unit operators regarding the role of teaching methods in acquiring skills. This result is not consistent with findings of study by Okunade (2007) in which skill is better acquired through group contact methods. These methods have the nature of practical demonstration which will help the clientele from desire stage through conviction and probably into taking action. The individual contact method and mass method is considered to be important tools to acquire knowledge. This may be as a result of the nature of the methods of giving information and deeper understanding of the innovation concerned[9].

However, extension agents in Egypt preferred mass teaching methods because it is the most appropriate method in increasing knowledge level of participants [10]. The findings of this study also indicated that majority of respondents believed group teaching methods increase their knowledge level.

Based on the results of the mean score, respondents indicated that the newspaper was determined as the most effective mass teaching methods in helping them to increase knowledge, skills and change attitudes.

CONCLUSION

The results demonstrated that respondents preferred face to face meetings as the most important individual teaching methods. It was also reported that educational classes was the most effective group teaching methods.

The results of study show that respondents preferred mass methods compared with individual and group teaching methods. Although variety of teaching methods of teaching is used, but agricultural agents generally tend to use more individual methods than the other agents. Farm visits and on-farm demonstrations model the early farm demonstration method of providing research-based recommendations to the local producer.

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