



EVALUATING THE PROJECT OF SHEEP ESTRUS SYNCHRONIZATION PROVIDED BY THE DIRECTORATE OF AGRICULTURAL EXTENSION AND TRAINING, MINISTRY OF AGRICULTURE, IRAQ

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Abstract

The objective of this study was to evaluate the sheep estrus synchronization project, provided by Directorate of Agricultural Extension and Training, Ministry of Agriculture (organizing, planning, implementation, follow-up and evaluation), and identifying the weaknesses and strengths in it. In order to achieve the objectives of this study, an assessment framework has been prepared included five aspects where 24 criteria were determined according to relevant procedures, with a group of experts in the field of agricultural extension. The study has concluded that the project of unifying sheep estrus synchronization lacks specialized arrangements, the planned extension activities related to the project were very few and most of them had not been implemented. In addition to the weakness of following-up, the implemented extension activities as well as the absence of objective evaluation for the project. It is recommended to create a specialized organizational unit in the field of unifying sheep estrus synchronization and define its tasks and duties in addition to the necessity of providing the requirements and supplies regarding unifying sheep estrus synchronization.

Key words : Sheep estrus synchronization, project, relevant procedures.

Introduction

Livestock is an essential sector of the agricultural production and an important component of food supplement. It can be considered as indirect production in agricultural lands for consuming agricultural natural resources and produce animal protein, which is represented by their meat and milk (Odeh, 2010). Sheep occupies an advanced position of livestock production, due to the economic advantages that are available when breeding them (Amin, 2003; Ismail and Al-Haheisha, 2005; Farid, 1997 and Muhammad, 1997).

1. Little capital is needed for establishing sheep breeding projects compared to projects of breeding cattle and buffalo.
2. Quick capital turnover, as lambs can be marketed after 4-6 months of birth.
3. High reproductive efficiency and ability to produce twins.

4. Diversity of its production, which is the production of meat, milk, wool and leather.
5. Sheep increases land fertility, as the faces resulting by them has high fertilization value.

In consideration of the importance of sheep breeding, Arab countries including Iraq have been interested in breeding them. Iraq ranked as the tenth following Sudan, Syria, Algeria, Morocco, Somalia, Saudi Arabia, Mauritania, Yemen and Tunisia among the Arab countries in terms of sheep population at the year 2006, with a total of 6,200,000 heads, which composed of 3.4% of the total sheep population in the Arab world during similar year (Arab Organization for Agricultural Development, 2007: 95).

Iraqi sheep belong to Asian sheep and distributed into three main breeds (Hussein, 2011) which are:

- The A wassi breed, which are located in the northwestern central region and include 60-65%

of total Iraqi sheep population.

- The Karadi breed, which are existed in northern Iraq and composed 20% of total Iraqi sheep population.
- The Iraqi breed, which are existed in southern provinces with 20% of total Iraqi sheep.

Although, there are various breeds of sheep in Iraq, their populations have decreased to become 2,629,000 heads in 2010 (Arab Organization for Agricultural Development, 2011: 100). This requires more attention to increase their numbers by enhancing lambing rate to get new births (Noaaemi and others, 2009). The sheep are seasonal animals with poly estrus cycles (www, 2004) that requires synchronization to unifying their estrus cycles through artificial intervention using artificial lighting systems or hormones treatment (Ishwar, 1990). Thus, estrus synchronization is used to improve the reproductive efficiency of sheep (Ozyurtlu *et al.*, 2008: 464-467). This has many benefits, for example making a larger group of ewes experience the estrus cycle to facilitate their mating and to synchronize their giving births in appropriate season (Bearden, 2004). Despite this importance, yet, reports of the Arab Organization for Agricultural Development pointed out that the breeders do not use the technology of estrus synchronization due to many reasons (Barkawi, 2006):

- Lack of clear plans for genetic improvement of sheep.
- Spreading of the pastoral production system.
- Absence of instructional role in improving animal production with depending of young breeder on their own experiences.
- Lack of trained specialists in the field of artificial insemination.

In view of the aforementioned reasons, the Directorate of Agricultural Extension and Training has implemented the project of estrus synchronization, which started in 2010 and continues until now. The Agricultural Extension is responsible of it to convey the scientific knowledge regarding the technology of estrus synchronization and to convince breeders by providing many activities. Due to the importance of this technique in increasing the reproductive efficiency of sheep, this study identified the strengths and weaknesses of the project through answering the following question:

- What is the reality of the project of sheep estrus synchronization, which is implemented by Directorate of Agricultural Extension and Training in terms of organization, planning,

implementation, follow-up and evaluation?

Objective of study

The objective of study was to identify the reality of the project of sheep estrus synchronization which is prepared by Directorate of Agricultural Extension and Training in terms of organization, planning, implementation, follow-up and evaluation.

Materials and Methods

Study methodology

The current study comes within the framework of exploratory and diagnostic studies, which lies under the descriptive approach that depends on interpretation of the phenomenon as it is in reality, namely through data and information regarding the project of standardization estrus synchronization prepared by directorate of Agricultural Extension and Training.

Study area

Directorate of Agricultural Extension and Training in Abu Ghraib.

Study tools

A study framework was prepared to evaluate the estrus standardization project prepared by Directorate of Agricultural Extension and Training through accessing the annual reports and documents issued by Directorate of Extension, in addition to having an interview with the head of the Animal Production Department at the same Directorate. Accordingly, the framework included 24 points divided into five areas: organization, planning, implementation, monitoring and evaluation. Furthermore, the draft questionnaire was presented to a group of experts at the Extension Department to express their opinions on the questionnaire, which was 80%. Therefore, the points of the questionnaire were kept as they are. Statistical means represented by mean arithmetic and percentage were also used.

Results and Discussion

The results were written depending on the reports and documents issued by Directorate of Agricultural Extension and Training as well as the personal interview. The results were discussed according to the following:

1. Organization

An organization for the project of sheep estrus synchronization was appeared within the organizational structure which takes the responsibility to aware breeders of this technique. Although, there are specialized extensional sections within the organizational structure, they do not include a specialized organizational

department, division or unit for the project, but they are found within the department of Animal Production that their tasks are identified by providing extensional service for the project.

1. The objectives of the project of sheep estrus synchronization are identified as follows:
 - a. Raising the awareness of breeders about the technique of sheep estrus synchronization.
 - b. Unifying the efforts of breeders in terms of veterinary genital care during one season, so the costs will be reduced.
 - c. Increasing the production of newborns, so the breeder's income will be increased.
 - d. Specifying the date of estrus synchronization to have the process succeeded, which leads to unifying the pollination of animals to get newborns of the same age.
 - e. Proportionality of the lamb's ages when marketing, which increases the process of the project and improves the income of breeders.
2. The tasks and duties of workers was identified in the project of sheep estrus synchronization.
 - a. Implementation of the annual extensional plan by directorates, divisions, centers and extension farms related to Directorate of Agricultural Extension and Training.
 - b. Implementing the projects of investment plan.
 - c. Developing plans and stages regarding the development of sheep.
 - d. Working on spreading the technology of sheep estrus synchronization to increase the production of newborns and that will increase the breeder's income.
3. Existence of a mechanism for coordination and communication through official letters, telephone calls and Internet.

2. Planning

Plan of Directorate of Agricultural Extension and Training

There are extensional and training activities in the field of estrus synchronization for the years 2011-2014 which came within the extensional and training plan of Directorate of Agricultural Extension and Training which distributed according to its sections and centers in the governorates. The results of analyzing extensional and training activities determined for the years 2011-2014 for the plan of Directorate of Agricultural Extension and

Training for the project of unifying estrus synchronization particularly were as follows:

First : Extensional and training activities for the project of unifying estrus synchronization in Directorate of Agricultural Extension and Training for the year 2013.

1. At the level of Iraq

- a. The total of activities was 21 which form 1.8% of total extensional and training activities determined in the plan of directorate of Agricultural Extension and Training for the same year of totaling 1218 activities, with an average of 1.1 activities regarding estrus synchronization per governorate annually.
- b. These activities were divided into 6 types: Explanatory fields, field days, television extensional items, local extensional seminars, extensional publications and agricultural training, which were 1, 3, 2, 4, 4 and 7 respectively and their percentages are 19%, 19%, 9.5%, 14.2%, 4.7% and 33.3%, respectively, of the total extensional and training activities in the plan of Directorate of Agricultural Extension and Training.
- c. The extensional and training activities determined in the field of estrus synchronization, which are missing from the plan of Directorate of Agricultural Extension and Training which are as follows: agricultural journalism, central extensional seminars, radio extensional items, exhibitions and festivals, field observations, practical extensional workshops as shown in table 1.

It is concluded from the table above that the number and averages of extensional activities in the field of unifying estrus synchronization within the plan of Directorate of Agricultural Extension and Training is described as very weak compared to the importance of the project.

Second : plan of directorate of Agricultural Extension and Training regarding the project of unifying estrus synchronization for the year 2014

1. It was clear that 54% of activities determined in the plan of Directorate of Agricultural Extension and Training for the year 2014 are local extensional seminars and farmers training.
2. The percentage of extensional and training activities focuses on learning through work and observation as it was 13% of total activities of the plan and most of its activities were of a theoretical nature.

Table 1: Plan of extensional and training activities for Directorate of Agricultural Extension and Training for the year 2013.

No.	Activity	Total extensional and training activities			Extensional and training activities in the field of estrus synchronization			
		Number	%	Average Governorate Activity	Number	%	% of the plan of Directorate of Extension	Average Governorate Activity
1.	Explanatory fields	89	7.3	5.9	4	19	4.4	0.2
2.	Field days	126	10.3	8.4	4	19	3.1	0.2
3.	TV. extensional items	44	3.6	2.9	2	9.5	4.5	0.1
4.	Radio extensional items	100	8.2	6.6	0	0	0	0
5.	Agricultural journalism	2	0.1	0.1	0	0	0	0
6.	Central extensional seminars	214	17.5	14.2	0	0	0	0
7.	Local extensional seminars	253	20.7	16.8	3	14.2	1.1	0.2
8.	Extensional publications	11	0.9	0.7	1	4.7	9.0	0.07
9.	Exhibitions and festivals	3	0.2	0.2	0	0	0	0
10.	Farmers training	250	20.5	16.6	7	33.3	2.8	0.1
11.	Field observations	109	8.9	7.2	0	0	0	0
12.	Practical extensional workshops	17	1.3	1.1	0	0	0	0
	Total	1218	100	83.7	21	100	1.8	1.1

Table 2 : Plan of extensional and training activities in directorate of Agricultural Extension and Training for the year 2014.

No.	Activity	Total extensional and training activities			Extensional and training activities in the field of estrus synchronization			
		Number	%	Average Governorate Activity	Number	%	% of the plan of Directorate of Extension	Average Governorate Activity
1.	Explanatory fields	97	7.3	6.4	1	4.1	1	0.06
2.	Field days	89	6.4	5.9	2	8.3	2.2	0.1
3.	TV. extensional items	58	4.2	3.8	2	8.3	3.4	0.1
4.	Radio extensional items	100	7.2	6.6	5	20.8	5	0.3
5.	Agricultural journalism	3.	2.7	2	0	0	0	0
6.	Central extensional seminars	32	2.3	2.1	0	0	0	0
7.	Local extensional seminars	502	36.4	33.4	3	12.5	0.5	0.2
8.	Extensional publications	16	1.16	1.0	1	4.1	6.2	0.06
9.	Exhibitions and festivals	2	0.14	0.1	0	0	0	0
10.	Farmers training	280	20.3	18.6	10	41.6	3.5	0.6
11.	Field observations	149	10.8	9.9	0	0	0	0
12.	Practical extensional workshops	21	1.2	1.4	0	0	0	0
	Total	1376	100	11.4	24	100	17	1.5

Third : Agricultural Extensional and Training activities determined in the field of estrus synchronization for the year 2014.

3-1 At the level of Iraq

- The total activities were 24 which represent 1.7% of total extensional and training activities determined by the plan of Directorate of Agricultural Extension and Training for the same year, which is totaling 1376 activities with an average of 1.5 activities for unifying

estrus synchronization per governorate annually.

- These activities are divided into 7 types: Explanatory fields, field days, radio extensional items, TV extensional items, local extensional seminars, extensional publications, farmers training, whose numbers were respectively, 1,2,2,5,3,1 and 10 and with percentages forms 4.1%, 8.3%, 8.3%, 20.8%, 12.5%, 4.1% and 41.6% in sequence, of total number of activities in the plan of Directorate of Agricultural

Table 3 : Total extensional and training activities implemented by Directorate of Agricultural Extension and Training in 2014.

No.	Activity	Total extensional and training activities of Directorate of Agricultural Extension and Training				Implemented extensional and training activities regarding estrus synchronization project			
		Determined number	Implemented number	% of implementation	Average of implemented activities in the governorate	Determined number	Implemented number	% of implementation	Average of implemented activities in the governorate
1.	Explanatory fields	97	80	82	5.3	1	0	0	0
2.	Field days	89	51	57	3.4	2	1	50	0.06
3.	TV. extensional items	58	68	117	4.5	2	2	100	0.1
4.	Radio extensional items	100	114	114	7.6	5	2	40	0.1
5.	Agricultural journalism	30	63	210	4.2	0	0	0	0
6.	Central extensional seminars	32	63	196	4.2	0	0	0	0
7.	Local extensional seminars	502	300	59	20	3	2	66.6	0.1
8.	Extensional publications	16	16	100	1.0	1	0	0	0
9.	Exhibitions and festivals	2	2	100	0.1	0	0	0	0
10.	Farmers training	280	153	54	10.2	10	8	80	0.5
11.	Field observations	149	91	61	6.0	0	0	0	0
12.	Practical extensional workshops	21	12	57	3.8	0	0	0	0
	Total	1376	1013	73.6	70.3	24	15	62.5	0.8

Extension and Training.

- c. The plan of extensional and training activities for the year 2014 for unifying estrus synchronization project did not include agricultural journalism, central extensional seminars, exhibitions and festivals, field observations, and scientific extensional workshops as shown in table 2.

It can be concluded from table 2 which shows that there was a slight increase in the number of extensional and training activities of the plan of agricultural extensional and Training for the year 2014 compared to previous years, yet, the number of extensional and training activities regarding estrus synchronization has been decreased significantly.

Fourth : The percentage of implementation of the plan of Directorate of Agricultural Extension and Training for the year 2013

The number of extensional and training activities implemented during the mentioned year was 1412, with an increase of 194 activities over the determined plan for the aforementioned year. The increase was concentrated on central extensional seminars, local extensional seminars, and farmers training as 257 central extensional seminars were implemented with an increase of 43 seminars, 385 local extensional seminars were implemented with an increase of 153 seminars in addition to implementing 282 training courses. This increase occurred only in activities of theoretical nature.

Fifth : Implementation of extensional and training activities regarding sheep estrus synchronization for the year 2013

5-1 At the level of Iraq

The total extensional and training activities implemented in the field of sheep estrus synchronization were 16 activities with an average of 0.9 activity / governorate which forms the following percentages:

- 115.6% of total extensional and training activities, which were determined to be implemented in the plan of Directorate of Agricultural Extension and Training for the year 2013 reached 1412 activities.
- 93.8% of total extensional and training activities which were implemented during previous year in the governorate reached 1218 activities.
- 72.7% of total extensional and training activities which were determined to be implemented in

the field of sheep estrus synchronization in the plan of Directorate of Agricultural Extension and Training reached 16 activities.

Sixth : Percentages of implementation of the plan of directorate of Agricultural Extension and Training for the year 2014.

The number of extensional and training activities implemented for the year 2014 was 1013, with an increase of 363 activities over the plan determined for the previous year. The increase was concentrated on the field of radio extensional items only as 114 radio extensional items were implemented with an increase of only 14 radio items out of the number of activities of directorate of Agricultural Extension and Training.

Seventh : Implementation of extensional and training activities in the field of estrus synchronization for the year 2014.

1. At the level of Iraq

The total extensional and training activities implemented in the field of sheep estrus synchronization were 15 activities with an average of 0.8 activity / governorate, which forms the following percentages:

- a. 73.6% of total extensional and training activities, which were determined to be implemented in the plan of Directorate of Agricultural Extension and Training for the year 2014 reached 1013 activities.
- b. 70.3% of total extensional and training activities which were implemented during previous year in the governorate reached 1376 activities.
- c. 62.5% of total extensional and training activities determined in the field of estrus synchronization within the plan of Directorate of Agricultural Extension and Training reached 15 activities as shown in table 3.

It is concluded from table 3 that the extensional and training activities implemented in 2014 are very few as well as there was an absence of extensional activities which depend on work and observation.

3. Follow-up

1. Absence of specialized arrangements deals with following-up the extensional and training activities regarding sheep estrus synchronization.
2. Conducting field visits to the sites where implementing the extensional and training activities related to the project.
3. Following-up the project through phone calls and official letters.
4. Sending reports from sites of implementing extensional and training activities regarding estrus

synchronization to higher managements.

5. Absence of objective evaluation of extensional and training activities provided in the field of estrus synchronization which means losing the opportunity of evaluating the project and reaching to decisions which contribute to the project development.

It is concluded from the aforementioned that despite of the economic and nutritional importance of sheep, which considered one of the most important source of income for thousands of rural people and a source of meat and milk production, yet, the project of sheep estrus synchronization lacks a specialized arrangements, the planned extensional activities are very few and most of them have not been implemented, in addition to the lack of following-up the implemented extensional activities and the absence of objective evaluation of the project.

It is recommended to create a specialized organizational unit in the field of estrus synchronization and define its tasks and duties, the necessity of providing requirements and supplies regarding the technology of estrus synchronization, in addition to the necessity to conducting a continuous evaluation for the project.

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