



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

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### Abstract

This study was planned to identify evaluating the extension and training activities of Sheep Estrus Synchronization provided by the Directorate of Agricultural Extension and Training, Ministry of Agriculture. 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.

**Keywords:** Sheep, Estrus, Synchronization

### 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).

- Little capital is needed for establishing sheep breeding projects compared to projects of breeding cattle and buffalo.
- Quick capital turnover, as lambs can be marketed after 4-6 months of birth.
- High reproductive efficiency and ability to produce twins.
- Diversity of its production, which is the production of meat, milk, wool and leather.
- 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 Awassi 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 (Noaemi and others, 2009). The sheep are seasonal animals with polyestrus 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). 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 Evaluating the extension and training activities of Sheep Estrus Synchronization provided by the Directorate of Agricultural Extension and Training, Ministry of Agriculture

### 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:

#### Extensional and training activities determined in the field of unifying estrus synchronization for the year 2011.

##### At the level of Iraq

- The total number of activities was 37, which represented 3.2% of total extensional and training activities determined to be applied according to the plan of Directorate of Agricultural Extension and Training for the same year, which are totaling 1137 with an average of 2 activities for estrus synchronization annually / governorate.
- The activities were divided into seven: fields of clarification, field days, television extensional items, radio extensional items, central extensional seminars, local extensional courses, and agricultural training. These activities are numbered respectively: 11, 4, 3, 2, 3,

4 and 10 which represents the following percentages: 29.7%, 10.8%, 8.8%, 5.4%, 8.1%, 10.8% and 27%, respectively, within the activities of the plan of Directorate of Agricultural Extension and Training for the year 2011.

- The extensional training activities determined in the field of estrus synchronization do not include the agricultural press, exhibitions, festivals, field observations, and scientific extensional workshops which included in the plan of directorate, as shown in Table 1.

#### Second: The plan of directorate of Agricultural Extension and Training in 2012

- It was clear that more than 52% of activities determined in the plan of directorate of extension for the year 2011 are local extensional seminars and agricultural training.
- The percentage of activities that depend on learning by work and observation does not exceed 14% of total activities of Directorate of Agricultural Extension and Training.

It is concluded that the extensional and training activities determined in the plan of Directorate of Agricultural Extension and Training are fewer than they were in the previous year.

#### Third: Extensional and training activities determined in the field of unifying estrus synchronization in 2012.

##### 1. At the level of Iraq

- The total is 25 activities, representing 2.9% of total extensional and training activities in the plan of Directorate of Agricultural Extension and Training for the same year which are 841 activities, with an average of 1.5 activities regarding estrus synchronization per governorate annually.
- The activities were divided into eight types: field days, television extensional items, radio extensional items, agricultural journalism, central extensional seminars, local extensional seminars, extensional publications, agricultural training which reached the number of 2, 2, 2, 1, 3, 7, 2 and 6 respectively with a percentage of 8%, 8%, 8%, 4%, 12%, 28%, 8% and 24%, respectively, of the total activities in the plan of Directorate of Agricultural Extension and Cooperation in 2012.
- Extensional and training activities in the field of estrus synchronization do not include the following activities:
- Explanatory fields, exhibitions and festivals, field observations, and practical extensional lessons, as in Table 3.

#### Implementation

##### (a) Implementation rates of Directorate of Agricultural Extension and Training for the year 2011

The number of agricultural extensional and training activities implemented for the said year was 1137 activities, with an increase of 271 activities over the determined plan for the same year. The increase did not include the types of activities, but focused on radio extensional items, local extensional seminars and farmers training, as 225 central seminars have been implemented with an increase of 62 local extensional seminars and 406 farmers training courses with

an increase of 16 courses. This increase depends mainly on the way of presentation only.

**(b) Implementation of extensional and training activities in the field of estrus synchronization project for the year 2011.**

**At the level of Iraq**

The total extensional and training activities implemented in the field of estrus synchronization were 7 activities with an average of 7.1 activities/governorate. The percentages are as follows:

- 1.1% of total extensional and training activities determined to be implemented in the plan of Directorate of Agricultural Extension and Training for the year 2011 which were totaling 1408 activities.
- 93.3% of total extensional and training activities which were implemented in 2011 in the governorate which were totaling 1137 activities.
- 48.6% of total extensional and training activities determined to be implemented regarding estrus synchronization in the plan of directorate of Agricultural Extension and Training which were totaling 37 activities, as shown in Table 9.

**Implementation rates of the plan of Directorate of Agricultural Extension and Training for the year 2012**

The number of extensional and training activities implemented for the mentioned year was 1028, with an increase of 187 activities over the plan determined for the

previous year. The increase was concentrated on the field of central extensional seminars and farmers training as 321 seminars were implemented with an increase of 211 seminars and 140 training courses with an increase of 28 agricultural courses. This increase depends on the theoretical nature and not on work and field observation.

**Implementation of extensional and training activities in the field of sheep estrus synchronization in 2012.**

**(a) At the level of Iraq:**

The total extensional and training activities implemented in the field of unifying sheep estrus synchronization were 17 activities with an average of 1 activity / governorate which forms the following percentages:

- a. 68.2% 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 2012 reached 1028 activities.
- b. 122.2% of total extensional and training activities which were implemented in the governorate in 2012 reached 841 activities.
- c. 73.9% of total extensional and training activities determined in the field of unifying sheep estrus synchronization in the plan of Directorate of Agricultural Extension and Training reached 17 activities as shown in Table 11.

**Table 1:** Extensional and training plan of directorate of Extension and Training for the year 2011

No.	Activity	Total extensional and training activities			Extensional and training activities in the project of unifying estrus synchronization			
		Number	%	Average Governorate Activity	Number	%	In the plan of directorate of extension	Average Governorate Activity
1.	Explanatory fields	99	8.7	6.6	11	29.7	11.1	0.7
2.	Field days	83	7.2	5.5	4	10.8	4.8	0.2
3.	TV. extensional items	35	3.07	2.3	3	8.8	8.5	0.2
4.	Radio extensional items	205	18.02	13.6	2	5.4	0.9	0.1
5.	Agricultural journalism	32	2.81	2.1	0	0	0	0
6.	Central extensional seminars	160	14.7	10.6	3	8.1	1.8	0.2
7.	Local extensional courses	62	5.4	4.1	4	10.8	6.4	0.2
8.	Extensional publications	36	3.1	2.4	0	0	0	0
9.	Exhibitions and festivals	2	0.1	0.1	0	0	0	0
10.	farmers training	390	34.3	26	10	27	2.5	0.6
11.	Field observations	15	1.3	1	0	0	0	0
12.	Scientific extensional workshops	18	1.5	1.2	0	0	0	0
	<b>Total</b>	<b>1137</b>	<b>100</b>	<b>73.1</b>	<b>37</b>	<b>100</b>	<b>3.2</b>	<b>2</b>

It can be concluded from the previous table that the number of extensional and training activities in the field of estrus synchronization and their averages at the level of Iraq within the plan of Directorate of Agricultural Extension and Training is described as very few compared to the importance of the project and its capacity.

**Table 2:** Extensional and training plan for directorate of Agricultural Extension and Training for the year 2012

No.	Activity	Total extensional and training activities			Extensional and training activities in the project of estrus synchronization			
		Number	%	Average Governorate Activity	Number	%	% of their number in the plan of directorate of extension	Average Governorate Activity
1.	Explanatory fields	77	9.1	5.1	0	0	0	0
2.	Field days	50	5.9	3.3	2	8	4	0.1
3.	TV. extensional items	67	7.9	4.4	2	8	2.9	0.1
4.	Radio extensional items	100	11.8	6.6	2	8	2	0.1
5.	Agricultural journalism	32	3.8	2.1	1	4	3.1	0.06
6.	Central extensional seminars	110	13.0	7.3	3	12	2.7	0.2
7.	Local extensional seminars	173	20.5	11.5	7	28	4	0.5
8.	Extensional publications	10	1.18	0.6	2	8	20	0.1
9.	Exhibitions and festivals	3	0.3	0.2	0	0	0	0
10.	Agricultural training	112	13.3	7.4	6	24	5.3	0.4
11.	Field observations	91	10.8	6.0	0	0	0	0
12.	Scientific extensional lessons	16	1.9	1.0	0	0	0	0
	<b>Total</b>	<b>841</b>	<b>100</b>	<b>55.5</b>	<b>25</b>	<b>100</b>	<b>2.9</b>	<b>1.5</b>

From Table 3, it could come to a conclusion that the number of extensional and training activities for sheep breeders in the project of estrus synchronization in Iraq is low, because the activities are mainly based on theoretical nature not on the practical one except for small percentage of these activities; and the activities for this year are less than they were in 2011 in the field of estrus synchronization.

**Table 3:** Extensional and training activities which were implemented in Directorate of Agricultural Extension and Training for the year 2011

No.	Activity	Total implemented extensional and training activities				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	99	202	204	13.4	11	6	54.5	0.4
2.	Field days	83	67	80	4.4	4	1	25	0.06
3.	TV. extensional items	35	94	268	6.2	3	1	33	0.06
4.	Radio extensional items	205	205	100	13.6	2	2	100	0.1
5.	Agricultural essays	32	32	100	2.1	0	0	0	0
6.	Central extensional seminars	160	225	140	15	3	3	100	0.2
7.	Local extensional seminars	62	62	100	4.1	4	0	0	0
8.	Extensional publications	36	44	122	2.9	0	0	0	0
9.	Exhibitions and festivals	2	2	100	0.1	0	0	0	0
10.	Farmers training	390	406	104	27.0	10	5	50	0.3
11.	Field observations	15	38	253	2.5	0	0	0	0
12.	Practical extensional workshops	18	31	172	2.0	0	0	0	0
	<b>Total</b>	<b>1137</b>	<b>1408</b>	<b>123.8</b>	<b>93.3</b>	<b>37</b>	<b>18</b>	<b>48.6</b>	<b>1.1</b>

It is concluded from the table above that there is an increase in number of extensional and training activities implemented especially at field-level such as explanatory fields.

**Table 4 :** Extensional and training activities implemented by directorate of Agricultural Extension and Training for the year 2012

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	77	78	101	5.2	0	0	0	0
2.	Field days	50	60	120	4	2	2	100	0.1
3.	TV. extensional items	67	61	91	4	2	2	100	0.1
4.	Radio extensional items	100	100	100	6.6	2	1	50	0.07
5.	Agricultural journalism	32	30	93	2	1	1	100	0.07
6.	Central extensional seminars	110	321	29	21.4	3	1	33	0.07
7.	Local extensional seminars	173	94	54	6.2	7	2	28	0.1
8.	Extensional publications	10	10	100	0.6	2	3	150	0.2
9.	Exhibitions and festivals	3	3	100	0.2	0	0	0	0
10.	Farmers training	112	140	125	9.3	6	5	83	0.3
11.	Field observations	91	116	127	7.7	0	0	0	0
12.	Practical extensional workshops	16	15	93	1	0	0	0	0
	Total	841	1028	122.2	68.2	23	17	73.9	1

It can be concluded from Table 11 that although there is a significant increase in rates of activities implemented in the field of unifying sheep estrus synchronization, it is very few compared to the importance of the project. This is applied to the number of activities implemented at the level of the governorate which is very few especially in the field area that depends on work through observation.

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