

Training Needs of Farmers in the Field of Fig Fruit Breeding in Rania District: Sulaymaniyah Governorate and Relationship with Some Variables



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ABSTRACT

The study aimed to identify the training needs of the farmers in the field of fig fruit breeding and to determine the relationship between training needs and some variables. The study area included Rania District in Sulaymaniyah Governorate. The research population involved 5205 farmers. The research sample was 104 respondents who were taken using a simple random sampling method, representing 2% of the study population. The research included 20 villages that were included in the research. Data were collected through the questionnaire and personal interviews. The results showed that more than 74% of fig farmers were between (medium and high levels) in need of training in their field of work, and the average training need reached 53.25°. The results showed that there is a statistically significant relationship between the training need and the economic level and the number of years working in the field of fig breeding. The study also showed that there is no significant relationship between the training need and (the area used for raising figs). The study recommended that the responsible authorities increase extension services and activities (such as seminars, training courses, and extension magazines) to increase farmers' skills and thus increase production.

Index Terms: Training needs, Fig fruit farmers, Fig plant breeding.

1. INTRODUCTION

Figs (Latin: *Ficus carica*), which is a seasonal fruit tree, is cultivated in West Asia and the Middle East, but its habitat extends from Turkey to northern India and is spread in the Mediterranean countries. It reached southern California in 1759 [1]. Figs provide the human body with vitamins, minerals, and fiber. They contain a large proportion of sugar and major mineral salts, such as calcium, phosphorous,

and vitamin C and have health benefits such as getting rid of acne and pimples, preventing constipation, high blood pressure and protecting against prostate cancer [2]. Fig fruit is famous and favorite throughout history. It is a fruit that has been appreciated since ancient times in its dry and greenish form, and it is grown in several regions, such as Palestine, Persia, Iraq, Syria, Jordan, Lebanon, Libya, Saudi Arabia, and the Sultanate of Oman. Warm and temperate, it is called (in English: *Ficus Caria*) [3], [4]. The main compound found in figs is dextrose, which is 50% of the fig composition - vitamins A, B, and C - containing high levels of iron, calcium, potassium, and copper salts - which gives high calories. Hence, every 100 g of green figs gives 70 calories, and dry figs give the same weight 270 calories [5]. The fig plant is an evergreen perennial that includes many genera and species, some of which are eaten - such as parchment and

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sycamore figs - which contain many proteins, carbohydrates, vitamins, minerals, and digestive enzymes [5]. Figs are one of the most water-rich summer fruits and are delicious in taste [6]. They are not eaten unless ripe, unlike some other fruits whose acid is eaten. It is rich in minerals, fresh, and dried. Figs are classified as a member of the Moraceae family and its fruits ripen in the summer. Figs are grown in various regions of the world, but its fertile crescent is located in the Levant and Iraq, and it is grown in regions with relatively warm winters that are not exposed to frost [7]. Furthermore, some types of it grow in rocky areas [8]. It comes to Saudi Arabia and the Gulf from various regions, but modern farms in the south and north of the kingdom supply the market with large quantities of it. Figs are varieties of it: the Esmeralda, the American, the common, and the wild, known as the fig stallion. It also has small, delicious varieties that grow in the Taif and southern regions, and it is called "hamat" there [9]. Medical uses and benefits: there are several uses and benefits of figs, including the manufacture of syrups, soothes the skin, softens it and removes pimples, removes the problems of colds and colds and their effects on the nose and throat - Figs are used on dental abscesses, gum infections, tumors in the mouth and others. It strengthens the liver and activates it and removes the enlargement of the spleen. Among the benefits of fig fruits are strengthen the kidneys, increasing blood circulation activity, and treating chest diseases, coughs, asthma, and infections [10]. It prevents the pooling of water in the heart, lungs and body that results by gently reducing pressure, and preventing bleeding - the brain and blood circulation in it activates so the brain functions in a better way, especially if it is eaten with materials rich in phosphorous such as nuts, almonds, pistachios and pine nuts - treats circulatory diseases in the brain such as phlegm and tremor Blotting - treats skin diseases such as vitiligo - treats gout diseases and works to excrete uric acid salts from the body through urine and through sweating. It treats joint diseases and pain [11]. Figs treat mental illnesses, calm nerves, remove anxiety, fear, frustration, and tension. Figs are an important source for strengthening and stimulating sexual energy for men and women, similar to strawberry and blueberry [8].

According to the data contained in the census, there is a variation in the annual production of figs, as production reached 24,418 tons of figs in 2017, and increased to 28,872 tons in 2018, then decreased in 2019 to 19531 tons, then increased in 2020–27,558 tons (Ministry of Agriculture - Kurdistan Region 2020).

The local product of figs is not sufficient to meet local needs, and for this reason, about 24,000 tons of figs are

imported annually from abroad, and during the past 5 years, 93,112 tons of figs were imported from Iran, Syria, Egypt, and southern Iraq to the Kurdistan Region (Ministry of Agriculture - Kurdistan Region 2019).

This difference in the quantity of production is due to several reasons:

1. Diseases that affect fig plants.
2. Insects that infect fig plants.
3. Training needs in fig plant breeding.

Hence, the idea of the current research is to study the training needs of fig farmers in managing the fig plant and the relationship between the training needs of farmers and some of their personal variables.

Accordingly, the current research is devoted to identifying the training needs of fig fruit farmers in fig plant breeding, and this research focuses on the following questions:

1. What is the level of training needs of fig fruit farmers in the field of fig breeding?
2. What is the relationship between the level of training needs of farmers and some of the following personal variables: (The economic level of the farmers, the area used to grow figs and how many years number worked in growing the fig plant)?

1.1. Research Aims

1. Determine the level of training needs of fig fruit farmers in the field of fig breeding.
2. Determine the relationship between the level of training needs of farmers and some of the following personal variables (the economic level of the farmers, the area used to grow figs and how many years number worked in growing the fig plant).

1.2. Research Hypothesis

There is no significant correlation between the training needs of fig fruit farmers and (the economic level of the farmers, the area used to grow figs, and how many years number worked in growing the fig plant).

2. RESEARCH METHODS

2.1. Research Method

The descriptive approach was used to conduct the current research [12], [13], which aims to uncover the studied reality by accessing data that identify the training needs of fig fruit farmers and in everything related to fig plant breeding.

2.2. Search Area

The research included farmers located within the Rania Agriculture Division located within the borders of Sulaymaniyah Governorate. This division was chosen to conduct the research because the number of fig farmers in it was large, reaching 5205 farmers.

2.3. Research and Sample Community

The number of agricultural villages reached 57 villages. The number of villages that were included in the research reached 20 villages, i.e., 37 villages were excluded due to the small number of farmers in them, as shown in Table 1.

The research included all fig farmers who own agricultural lands and are officially registered with the Agricultural Division in Rania district. A proportional random sample was selected from the community of farmers who were actually included in the research 5205 farmers with a ratio of 2% of fig fruit farmers were taken due to their large number. The sample of farmers who were included in the research reached 104 farmers, as shown in Table 1.

2.4. Prepare the Training Needs Scale

The researcher prepared a measure of the training needs of fig fruit farmers after reviewing the scientific literature in the field of (fig fruit farmers) and surveying the opinions of experts and specialists in this field [14].

The scale included two parts, as follows:

Part One: It includes a number of questions that are believed to be related to the personal variables of fig farmers, which are related to their training needs regarding dealing with the fig plant, and these variables are:

- The economic level of the farmers.
- The area used to grow figs.
- How many years number worked in growing the fig plant.

These variables were identified after field follow-up of the researcher in the target area, reviewing the relevant literature, and reviewing studies related to training needs [15].

Part Two: The researcher developed a measure of training needs in the field of fig cultivation according to the scientific literature and took the opinions of a group of specialists in horticulture and gardening engineering.

Two fields of research were identified and included 20 items as follows:

TABLE 1: The research population and sample

No.	Name of the village	The number of farmers	The ratio (%)	The sample
1	Sarkabkan	365	2	7
2	Dollaraqa	187	2	4
3	Charqorna	405	2	8
4	Shaedafaqeer	118	2	2
5	Boskeen	646	2	12
6	Qorago	243	2	5
7	Darband	188	2	4
8	Toopao	392	2	7
9	Qroocha	476	2	9
10	Golak	151	2	3
11	Grrjaan	582	2	11
12	Sarkhma	125	2	3
13	Qamtaraan	150	2	3
14	Astreelan	104	2	2
15	Galegolán	102	2	2
16	Kanemaran	281	2	6
17	Grdetle	222	2	4
18	Zangaranga	142	2	3
19	Cholea – Namrood	226	2	5
20	Garmkadaal	200	2	4
Sum		5205	2	104

- The field of managing the fig plant, which includes 13 items.
- The field of fig plant diseases includes 7 items.

2.5. Validity Measure

For the purpose of examining the validity of the questionnaire, the questionnaire form was presented to agricultural extension and education experts to ensure that the questionnaire questions measured the training needs of fig farmers. As for measuring the validity of the content, it was measured by presenting the questionnaire to experts in the field of horticulture.

2.6. Measurement of Reliability and Validity Factor

Pre-test of the questionnaire form was conducted on August 16, 2020, to measure the validity and validity of the questionnaire and using the half-segmentation equation of (person) to obtain the stability and then the root of the reliability degree to obtain the degree of validity, and their value was 0.86, 0.927° and straight.

2.7. Data Collection

The process of collecting data from farmers in the two areas within the borders of Sulaymaniyah Governorate - Raparin District (Rania district) was carried out through the questionnaire form and the personal interview and recording of their answers for the period between June 9, 2020, and October 25, 2020, where 104 were collected forms.

2.8. Statistical Methods

After data were collected, unpacked, and tabulated, it was analyzed using the Social Sciences Statistical Analysis Software (SPSS).

3. RESULTS AND DISCUSSION

The first aim:

1. Determine the level of training needs of fig fruit farmers in the field of fig breeding.
2. Measuring the training need for fig fruit farmers in the field of fig breeding:

Table 2 concludes that the level of training needed for fig farmers is described as medium and tends to be high because 74% of farmers fall into this category, and the degree of training needed ranges between 51 and 100°, and the average degree of training needed is 53.25°.

The higher the score a farmer obtains through the questionnaire form, the more this means that farmers need training courses in their field of work.

This may be due to several reasons, the most important of which are the following:

- Through direct observation during the data collection process, it has been observed that farmers do not wish to read the manuals that are being distributed through extension agents.
- Through direct observation during the data collection process, it was noted that farmers do not wish to visit the Agricultural Extension Department in the event of an injury.

The second aim:

The second objective of the study: To identify the relationship between the training needs for fig fruit farmers and some personal variables that were dealt with in the study as follows (the economic level of farmers, the area

used to grow the fig plant, years number worked in growing the fig plant).

1. The economic level

To describe the economic level of the fig fruit farmer, the farmers were divided into three income levels (low level, medium level, high level). The highest percentage was for the average economic level and reached 77%, followed by 13% for the low economic level, and finally 10% for the high economic level, as shown in Table 3.

To determine the type of correlation between the training need and the economic level, the simple correlation equation (Pearson) was used and its value was found to be 0.295°. This indicates the existence of a positive correlation to verify the significance. For this relationship, the (t) test was used, the calculated value of which was 2.039°, and when compared to the tabular value (t) of 1.982°, this means that it is significant at the probability level of 0.05. Therefore, the hypothesis that there is a correlation between the training needs of fig fruit farmers and the economic level was accepted.

This can be explained by the existence of a significant correlation between fig growers and the economic level, which is that farmers at the medium - and high-income levels have an acceptable income and want to increase their income, and this positively affects their interest in the need or participation in training courses for raising fig trees.

Table 3 shows the economic level of fig farmers, their number and percentage, the average training need for each category, and the relationship between the economic level and the training need for farmers.

Table 5 shows the number of years of work in the field of fig cultivation, the number of farmers and their percentages, the average training need for each category, and the relationship between the number of years of work in the field of fig cultivation and the training needed for farmers.

2. The area is growing fig

To describe the area used to grow the fig plant, farmers were divided into 3 categories according to the cultivated area and the extent of each category 9 dunums, starting from 1 to 10 dunums and ending with 21–30 dunums. The number of farmers and the percentages for each category were calculated as shown in Table 4, and it appeared that the highest cultivated area in the field of fig cultivation was 30 dunums and the least cultivated area was 1 donum, and the

TABLE 2: Distribution of fig farmers according to the categories of degrees of training need

No	Categories of training needs degrees	Level of training needs	Frequency	Percentage	Average training needs
1	(21–50)	Low	25	26	40
2	(51–70)	Medium	35	36	62
3	(71–100)	High	40	38	79
Total			104	100	53.25

X=53.25, SD=11.7, N=104

highest percentage was 96% within a category 1–10 dunums, followed by 2% for each of the remaining two categories.

To find the type of correlational relationship between the training need and the area used to grow the fig plant, a simple correlation equation (Pearson) was used, and it was found that its value - 0.181 score indicates the existence of a correlation between them, and to verify the significance of this relationship, a t-test was used. Its calculated value is 0.101° and when compared with the tabular value of (t) of 1.982°, which means that it is a non-significant relationship. Therefore, we reject the research hypothesis, which states that there is a significant relationship between the training need and the area used to grow fig plants, and accept the statistical hypothesis which states that there is a non-significant relationship between the training need and the area used to grow fig plants.

The explanation for this is that the cultivated area does not significantly affect the need of fig growers to participate in

training courses in their field of work. In other words, the greater the area planted with fig trees, the more it will have a very weak effect on the need for training courses.

Table 4 shows the area used to grow the fig plant, the number of farmers and their percentages, the average training need for each category, and a test of the relationship between the area used to grow the fig plant and the training need for farmers.

3. Years number worked in growing the fig plant:

To describe the number of years of work in the field of fig cultivation, farmers were divided into 3 categories according to the number of years of work in the field of fig cultivation, and the range of each category is 19 years, starting from 1 to 20 years and ending with 41–60 years. The number of farmers and the percentages for each category are calculated as shown in Table 5, where the highest percentage of years of work in fig cultivation reached 82% for the first category, 1–20 years, followed

TABLE 3: The relationship between the economic level and the training need of farmers

No	The economic level	Number of farmers	%To Farmers	Average training needs for each category	Correlation	Calculated (t)	Tabular (t)
1	Low	14	13	37.7	0.295	2.039	1.982
2	Medium	80	77	37.2			
3	High	10	10	33.1			
	SUM	104	100				

Tabular (T) value 1.982 at the probability level 0.05

TABLE 4: The relationship between the area used for growing figs and the training needs of farmers

No	Categories of cultivated area in pomegranate	Number of farmers	% To farmers	Average training needs for each category	correlation	Calculated (t)	tabular (t)
1	(1–10)	85	82	88.6	- 0.181	0.101	1.982
2	(11–20)	12	11	76.4			
3	(21–30)	7	7	77.3			
	SUM	104	100				

Tabular (T) value 1.982 at the probability level 0.05

TABLE 5: The relationship between the number of years working in the field of fig cultivation and the training needs of farmers

No.	Number of years of work in the field of pomegranate cultivation	Number of farmers	% To farmers	Average training needs for each category	Correlation	Calculated (t)	tabular (t)
1	(1–20)	85	82	66.1	0.221	2.138	1.982
2	(21–40)	10	10	67.8			
3	(41–60)	9	9	65.5			
	Sum	104	100				

Tabular (T) value 1.982 at the probability level 0.05

by 8% of years of work in fig cultivation for the other two categories.

To determine the type of correlation between the training need and the number of years working in the field of fig cultivation, the simple correlation equation (Pearson) was used, and its value was found to be 0.221° , which indicates the existence of a relationship. Correlation: To confirm the importance of this relationship, the (t) test was used, whose calculated value was 2.138° , and when compared to the tabulated value of (t) of 1.982° . This means that this relationship is significant at the probability level of 0.05. Therefore, the research hypothesis was accepted, which states that there is a significant relationship between the number of years of work in the field of fig cultivation and the training needed.

This result can be explained by the fact that fig farmers' experience in their work increases with the increase in the number of years of work, and thus, the need to participate in training courses increases to gain experience in their field of work and thus increase income.

Table 5 shows the number of years of work in the field of fig cultivation, the number of farmers and their percentages, the average training need for each category, and the relationship between the number of years of work in the field of fig cultivation and the training needed for farmers.

3. CONCLUSIONS

1. The results of the study showed that the training needed for fig farmers ranges from the average level to the very high level. From this, it was concluded that the agricultural educational extension services provided to fig farmers are diminished.
2. It appeared that there is a significant relationship between the training need and both the economic level and the number of years of work in the field of fig breeding. We conclude from this that the higher the economic level and the greater the number of years of work for the farmer, the greater the training need to learn about everything that has been developed in the field of fig breeding and thus we get to increase production, it appeared that there is a non-significant relationship between the training need and the area used in raising figs. This means that the area used in raising figs has no effect on the training needs of the farmers.

3.1. Recommendations

1. Given the general increase in the training need for fig farmers in their field of work, and the close relationship between the training need, the economic level and the number of years of work in the field of fig cultivation for them, the researcher recommends intensifying extension activities and services such as seminars, training courses, and the public that is accompanied by a government effort to raise the educational level of the fig farmers, so that they can understand the science brought about by the scientific revolution in the field of fig cultivation.
2. Given the high training needs of pomegranate farmers in the fields of fig plant disease control and fig cultivation management, it is recommended to focus on activities and extension services (seminars, training courses, and the public) in the first place in areas with a high and therefore minimal training need.

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