

Farmers's awareness of the negative effects of weed seeds in organic fertilizers in Al-Kassic Region\ Talafer

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Abstract

The study aimed to distinguish between personal, social, economic and communicative features of farmers in Al-Kassic Region, identify the Farmers's awareness of the negative effects of weed seeds in organic fertilizers at the study area, and determine the correlation between some of the independent variables studied and the level of Farmers's awareness in negative effects of weed seeds. The study was conducted in Al-Kassic Region\Talafer District\Iraq; systematic random sample was selected from farmers (152 respondents). Data were collected by questionnaire through personal interviews, Pearson simple Correlation was used, percentages coefficient to data analysis.

Key words: Farmers's awareness - organic fertilizers-weed seeds

I. Introduction

Grasses are unwanted plants in a particular condition and may be harmful, dangerous or economically harmful. Grasses pose a serious threat to primary production and biodiversity. They reduce the productivity of farms and forests, displace local species and contribute significantly to land and water degradation. Grasses can cause significant losses in yield. Knowledge about the grasses occurring, their apportionment within fields and their impacts on the crop yield is important for effective control of grasses. Grasses are undesirable plants that infect various crops and negatively affect their yield. There are countless reports of weed effects on crop plants (Bhownik & Doll, 1992; Javaid et al., 2007). Usually grass competition is complicated where grasses compete with crop plants by filling space, which will be available for planting crops. Anything that reduces this area reduces plant growth (Wright et al., 2001). Water requirements for grasses growth are particularly important through competitive position with the crop plant for available humidity (Gibson, 2000). Studies indicate that the structure of grasses and umbrellas, especially the height of the plant and the location of branches and the height of the maximum leaf area identify the impact of competition on light and thus have a significant impact on crop yield (Cudeny et al., 1991). Agricultural Extension Officers act as intermediaries between important information / research and farmers. On the one hand, they communicate between farmers and research scientists, and on the other hand between farmers and policy makers. Their goal is to help

farmers make decisions by guarantee that effective knowledge is gained in order to achieve successful results. Because agricultural extension services in the country provide critical access to the knowledge, information and technology farmers need to improve productivity and thereby improve their quality of life and livelihoods (Sadia, et al,2016). Therefore, the best way to perform an inventory of grasses and their level of infection is through joint work to serve agricultural extension with farmers. To achieve this goal, both can be well trained to properly determine grasses, evaluate grasses cover and record data (FAO, 2006Particularly in developing countries, it is important to provide extension services to better identify weed plants and to increase knowledge about ways to manage grasses management more sustainably (Bryan et al., 2018)

Objectives of study: through the previous presentation of the research problem, this research aims to:

- 1- Identify the personal, social, economic and communicative characteristics of the farmers in Al-Kassic Region.
- 2- Identify the level of Farmers's awareness in negative effects of weed seeds in organic fertilizers.
- 3- Determine the relationship between independent variables following: (Age, Education level, Marital status, Occupation, Gender, Source of income, Type of tenure) and between level of Farmers's awareness in negative effects of weed seeds in organic fertilizers.

II. Materials and Methods

The study was conducted in Al-Kassic Region\Talafer District\mosul. Iraq.The population of this study consisted of 25% (190 farmers) of the total farmers (760 farmers). For the purpose of collecting research data, a questionnaire was prepared consisting of two parts the first part included the independent variables (farm size, agricultural experiment and age) measured by number of years, and Level of education included 7 levels the following: illiterate (1), read and write (2), graduated from primary education (3), secondary graduate (5), graduated from the Institute (6), college graduate (7) higher certificate. Marital status had four categories: single, married, divorced and widowed; and size of the family by number of persons. While the second part consists of a measure of farmers' awareness in negative effects of weed seeds in organic fertilizers. this scale consist of (12) items about the negative effects of weed seeds. through the presentation of their opinion about these items we can Identify the level of Farmers's awareness in negative effects of weed seeds.Respondents' responses were measured on a scale of four responses: high aware, medium aware, low aware and not aware. it is measured by giving numeric values as follows (4, 3, 2, and 1), respectively, and the scores assigned to each dimension were collected. Data were collected in the period between April to June 2018. The original data set included 17 paragraphs and the data were measured for validity and quality by specialist at the Agricultural Extension Department, Based on the evaluation process, three of the paragraphs were removed. Also, 30 questionnaires were excluded after determining the data consistency (total reliability coefficient was 0.82) (Pallant 2005). In this study, the data were essentially analyzed using a computer program called Statistical Package for Social Sciences (SPSS). However, some graphs were made using Microsoft Office Excel. First, all data is entered in Microsoft Office Excel. Then, the answers are encoded using numbers to indicate each different answer. Data were analyzed using different quantitative and qualitative methods and methods. descriptive statistical analysis was used to analyze quantitative data. The important statistical measures used to summarize and classify research data were the means, percentages, frequencies and standard deviations. The qualitative data were analyzed in part immediately during data collection to prevent missing and to enable filling gaps in quantitative data. (Kothari, 2003)

III. Results and discussions:

1- Identify the personal, social, economic and communicative characteristics of the farmers in Al-Kassic Region.

Age. The participants were aged between 18 and 65 years. The average age of the interrogators was (31.33) years with a standard deviation of (4.90). Participants were placed under four age groups.

Categories	Frequency	%
(18-29) year	5	3.28
(30-41) year	23	15.13
(42-53) year	77	50.68
(54-65) year	47	30.91
Total	152	100.00
x = 31.33		SD = 4.90

Table 1. Distribution of respondents according to age

The respondents aged 42-53 and 54-65 were in the majority (81.59%), followed by the age group 30-41 (15.13%), next by the age group 18-29 years (3.28%), as shown in the table 1. The results indicated that most of young people are not engaged in wheat growing. Due to their migration from the countryside to the city to work, they do not rely on the agriculture for their livelihood. On other hand, The results revealed that a large proportion of farmers aged between 30 and 50 years indicate that farmers were mainly middle-aged and that they in their active economic stage may be exposed to stress; this has an impact on farmers' productivity.

Education level. as evident from table 2, the distribution of respondents into categories is based on their education level. The percentage of the farmers, with illiterate, was 3.28%. About 15.13%, 11.84% of the respondents had read and write, and graduate of primary school, respectively.

Categories	Frequency	%
Illiterate	5	3.28
read and write	23	15.13
graduate of primary school	18	11.84
graduate of a secondary school	52	34.21
graduate of the Institute	20	13.15
graduate of college	26	17.13
Higher certificate	8	5.26
Total	152	100.00

Table 2. Distribution of respondents according to education level

While 34.21% of the farmers attained graduate of a secondary school and 13.15% had graduate of the Institute. 17.13% of the farmers had graduate of college and 5.26% of the farmers had Higher certificate. The studies have shown that farmers generally have an average level of education. The higher education the farmer receives, the more likely the adoption of agricultural technologies. This might be due to the fact that educated person has greater chances to access information about the technology and knows where and how he or she can be supported (Deshmukh et al., 2007), essentially if those techniques require instruction to understand and implement.

Marital status. The marital status of respondents in the study was placed under four categories. The results indicate that the percentage of respondents, who were married was 60.52%, followed by 25% of participants who were single. While, the proportion of participants, who were widowed was 9.88%. Only 4.60% of respondents were divorced, as illustrated in the table 3.

Categories	Frequency	%
Married	92	60.52
Single	38	25.00
Widowed	15	9.88
Divorced	7	4.60
Total	152	100.00

Table 3. Distribution of participants by marital status

Results show that more than half of participants are married. The hypothesis here is that married participants are more willing to accept or accept new farming techniques than unmarried respondents because they have a larger family workforce, a higher capital base and demand for the social, cultural and economic needs of their families.

Occupation. The results show that most (96.71%) of the participants were fully involved in agriculture as a great career, while 3.29% of the participants were engaged in other careers (Table 4).

Categories	Frequency	%
Farmers	147	96.71
Other	5	3.29
Total	152	100.00

Table 4:Apportionment of participants by occupation

This means that farmers, who consider agriculture the main career, are likely to invest more time, energy and money in agriculture as their main source of livelihood.

Gender. The results in Table 5 show that 93.42% of the farmers were male, while 6.58% were female. It is clear that the majority of participants are male

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Categories	Frequency	%
Male	142	93.42
Female	10	6.58
Total	152	100.00

Table 5. Distribution of respondents according to gender

As table 5 suggests, most of the farm work is undertaken by men in the study area because the work on the farm is generally perceived to be too physically strenuous, and this is suitable for men more than women because of the man's physical strength.

Source of income. Farmers keep on a farm, including both agricultural and non-agricultural resources. Table 6 shows the distribution of the respondents into four categories based on their source of income. Most of the respondents (74.34%) in the study region, work in agriculture and treat farm as a major source of income. 23.04% of respondents work on a farm also have additional source of income besides the farm. While, the proportion of respondents, who depend on their income from farm and disabled pension and farm as well as retired pension was 1.31%.

Categories	Frequency	%
Farm	113	74.34
Farm + employment outside the farm	35	23.04
Farm + disabled pension	2	1.31
Farm + retired pension	2	1.31
Total	152	100.00

Table 6. Apportionment of participants by source of income

As it can be seen from the above table, almost three-quarters of the respondents depend on agriculture for their income because, in fact, agriculture plays a strategic part in the process of economic development by increasing the income of the farmers and providing more jobs to unemployed people. This shows that farmers would like to improve their standard of living.

Type of tenure. The results in table 7 indicate that the percentage of respondents who own land was 50.00% and those, who rent the land reached 16.44%, while the participation was 20,41%. The percentage of respondents with a contract type of possession of the land constituted 13,15% (table 7).

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Categories	Frequency	%
Owned	76	50.00
Rented	25	16.44
Contract	20	13.15
Participation	31	20.41
Total	152	100.00

Table 7. Apportionment of participants by form of tenure

The results show that half of farmers possess the land, and possessing land has many benefits. It removes the doubt the loss of rent and the impact it will have on the whole process. The accumulation of property rights in the land provides an excellent source of security for borrowed funds. Decisions on land management including selection of institutions, conservation practices and use of soil modifications are only the choice of the owner.

2-Identify the level of Farmers' awareness in negative effects of weed seeds in organic fertilizers.

The results showed that the highest value of Farmers' awareness in negative effects of weed seeds was (44) numeric value and the lowest value was (18) An average numeric value of (89.77) with a standard deviation of (11.88) (Table 8).

Table 8. Apportionment of participants by rank of Farmers' awareness in negative

Categories	Frequency	%
Low (18-26)	42	27.64
Medium (27-35)	79	51.97
High (36-44)	31	20.39
Total	152	100.00
x = 89.77		SD = 11.8

effects of weed seeds in organic fertilizers

The farmers were divided into three categories according to their awareness in negative effects of weed seeds. As it has been shown, only (27.64%) of the respondents were ranked in the low category of Farmers' awareness (18-26); whereas, most respondents were placed in the medium category (27-35), which was (51.97%), and high category (36- 44), which was (20.39%). This shows that the farmers' awareness in negative effects of weed seeds is medium with a tendency for low, as shown in the table (8).

3-Determine the relationship between independent variables and between level of Farmers' awareness in negative effects of weed seeds in organic fertilizers.

The correlation coefficient was calculated to find out the relationships between specific characteristics of farmers and farmers' awareness. The zero hypothesis was that there was no statistically significant relationship between the selected characteristics of farmers and farmers' awareness, as illustrated in Table 9.

Variables	Coefficient of correlation (r)
Age	0.410**
Education level	0.230*
Marital status	0.189*
Occupation	0.22
Gender	0.34
Source of income	0.360**
Type of tenure	0.210*

Table (9Relations between specific characteristics of farmers and the reality of extension services

The age had significant relationship with the Farmers' awareness in negative effects of weed seeds in organic fertilizers when (r) value was (0.410^{**}) at 1% level of importance. The education level had significant relationship with the Farmers' awareness when (r) value was (0.230^{*}) at 5% level of importance. This might be due the fact that educated person has greater chances to access information about the technology and where and how he or she can be supported (Junge et al., 2009).

Marital status had a great positive relationship with the reality of extension services when (r) amount was (0.189^*) at 5% level of importance. Therefore, assumption here is that the married respondents they more willing to receive or accept new farming techniques than unmarried participants because they have a larger family workforce and a higher capital base and demand that their families receive social, cultural and economic needs. Occupation had no great relationship with the reality of extension services when (r) value was (0.22). Gender had no significant relationship with the reality of extension services when (r) value was (0.34). Source of income had great relationship with the reality of extension services when (r) amount was (0.360^{**}) at 1% level of significance. Type of tenure income had great relationship with the reality of extension services when (r) amount was (0.210^*) at 5% degree of significance.

Conclusions

According to the aforementioned results, we conclude that: The majority (81.59%) of farmers were between 42-65 years, It was also observed that the Farmers' awareness in negative effects of weed seeds in organic fertilizers was generally medium with tendency for low. These factors relate either to farmer or may be technology related. Farmers' characteristics were found to be significant determinants of the Farmers' awareness in negative effects of weed seeds in organic fertilizers such as: a farmer's Age, Education level, Marital status, Source of income.

Recommendations:

- 1. Here, efforts need to be intensified to make agricultural extension services more effective so that farmers can obtain useful information to reinforce farmers' awareness of the negative effects of weed seeds. Farmers should be supported to shape and join cooperative societies to facilitate group dynamics. A sufficient enlightenment programs should be developed on the negative impacts of weed seeds. In addition to the features of the extension factors, one should go a long way to influence the farmers' awareness, therefore, they should have appropriate training before work and on the job to improve their features, e.g. communication ability.
- 2. The innovations that are transferred to farmers must have good comparative advantage and not to be too expensive for the farmers.
- 3. Agricultural development agencies must be very conscious of the culture that exists when designing innovation for development.

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