KNOWLEDGE MANAGEMENT OF FARMERS' BEHAVIOR AND THEIR REIATIONSHIP TO SCIENTIFIC SOURCES OF INFORMATION AND RECOMMENDATIONS TO REDUCE THE EFFECT OF CHEMICA FERTIIZERS AND PESTICIDES ON ENVIRONMENT AND HUMAN HEALTH

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ABSTRACT

The research aims to Identify the level of managing farmers' knowledge and their relationship to scientific sources of information and recommendations to reduce the effect of chemical fertilizers and pesticides on the environment and human health, as well as determine the relationship Between the dependent variable and the studied This research was carried out in the Victory and Peace Agriculture Division of the Baghdad / Karkh Agriculture Directorate. The study population numbered (1045) farmers are registered, and the researcher selected a random sample from the study population of (160) farmers to study the chemical fertilizer axis, i.e. (15.3%), and the percentage (14.5%) of the study population was a random sample from the research community to study the axis of chemical pesticides, as the number reached (152) farmers. The questionnaire was used to collect data from farmers on a personal interview in January 2020, after all, The most important results were that the percentage of the field of chemical fertilizers was 73.75%, the field of chemical pesticides was 63.16%, and there was also no significant difference between the average levels of management knowledge of the behavior of farmers and the fields of study of fertilizers and chemical pesticides, and it was found that there are problems experienced by farmers in the management of Knowledge of the behavior of farmers in the areas of research fertilizers and chemical pesticides significantly, with regard to proposals by farmers, it is good and on the government agricultural agencies and support activating the role of agricultural extension in the field of fertilizers and chemical pesticides to change the behavior of farmers. The most important recommendations were to spread awareness among farmers and to use recommendations and scientific information in growing crops.

Keywords: Management Knowledge of farmers behavior, fertilizers, and chemical pesticides, environment and human health.

إدارة المعرفة لسلوك المزارعين وعلاقتهم بالمصادر العلمية للمعلومات والتوصيات لتقليل تأثير الأسمدة الكيماوية ومبيدات الآفات على البيئة والصحة البشرية

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المستخلص

يهدف البحث إلى التعرف على مستوى إدارة معرفة المزارعين وعلاقتها بالمصادر العلمية للمعلومات والتوصيات للحد من تأثير الأسمدة الكيمائية والمبيدات على البيئة وصحة الإنسان، وكذلك تحديد العلاقة بين المتغير التابع والمتغيرات المستقلة المدروس. تم إجراء هذا البحث في شعبة زراعة النصر والسلام في مديرية زراعة بغداد / الكرخ. وكان مجتمع الدراسة 1045 مزارعًا من المسجلين رسميا في الشعبة الزراعية، واختار الباحث عينة عشوائية من مجتمع الدراسة البالغ 160 مزارعًا لدراسة محور الاسمدة الكيميائية وبنسبة 15.3٪، وكانت نسبة عينة محور المبيدات 14.5٪ من مجتمع الدراسة أذ بلغ عددهم 152 مزارع. تم استخدام الاستبيان لجمع البيانات من المزارعين في مقابلة شخصية في كانون الثاني 2020، وكانت أهم النتائج أن نسبة مستوى إدارة معرفة المزارعين في مجال الأسمدة الكيماوية 73.75٪، ومجال المبيدات الكيماوية 63.16٪، وكذلك لا يوجد فرق معنوي بين متوسط مستويات المعرفة الإدارية لسلوك المزارعين ومحوري الدراسة الأسمدة والمبيدات الكيميائية، ووجد أن هناك مشاكل يعاني منها المزارعون في إدارة معرفة سلوك المزارعين في البحث في محوري الدراسة الأسمدة والمبيدات الكيميائية، وكانت مقترحات المزارعين جيدة وعلى الجهات الزراعية الحكومية دعم تفعيل دور الإرشاد الزراعي في مجال الأسمدة والمبيدات الكيميائية لتغيير سلوك المزارعين. وكانت أهم التوصيات هو نشر الوعي بين المزارعين واستخدام التوصيات والمعلومات العلمية في زراعة المحاصيل والاستفادة من مخلفات الحقلية بما يتناسب مع البيئة وصحة الإنسان.

الكلمات المفتاحية: إدارة المعرفة بسلوك المزارعين، الأسمدة والمبيدات الكيميائية، البيئة وصحة الإنسان.

INTRODUCTION

There is no doubt that the indicative as an educational activity aims to develop the rural communities through the behavioral changes in the knowledge, skills, and attitudes of its audience, which requires effective indicative programs, It is mentioned (Al-Rahahleh, 2011) that the issue of administrative behavior of the managers of organizations is considered a relatively recent topic, and he was studying within the subjects of management until recently, but at present due to its organizational importance, many western universities have tended to establish their departments and are called These sections are (OB) Organization Behavior. He mentions(Laurie, 2010) states that the study of administrative behavior aims to know the causes and motives of individual behavior within organizations, for example: understanding the behavior of individuals within the organization, studying the causes and effects of these behaviors on the individual and the organization, and predicting the behavior of workers within the organization in different situations, choosing Appropriate

methods to change or modify the behavior of individuals in the organization to the desired behavior, and to know the attitudes and motivations of individuals and the individual differences between them. Determine appropriate rules for dealing with workgroups, and to address problems that occur between members of the organization, Determine appropriate rules for dealing with workgroups, and to address problems that occur between members of the organization. From that, (Qeshta, 2013) sees that the concept of knowledge is the cognitive framework of the individual, and it is how the individual's social experiences and knowledge are organized, and it is the result of total knowledge in which the individual perceives different social situations and responds to them, so the cognitive systems are the determinants and directors of human behavior. (Al-Shafei, 2011) states that knowledge is a mental and cumulative product of beliefs, ideas, concepts, theories, and experience. And That the environment is the medium or place in which man or other creatures live, and that it is contaminated with toxic chemical wastes that humans use in his environmental surroundings, especially in the agricultural side, and that pesticides and fertilizers are despite the importance of pesticides and their necessity in eliminating various pests and protecting agricultural production. The most important and most dangerous environmental pollutants, in addition to their toxic danger to humans and animals, especially in the case of wrong use, and failure to adhere to the instructions and instructions that are constantly provided by the Department of Prevention to farmers, as these used pesticides increase their risk and effects on the environment by increasing the use doses beyond the permissible limit, and non-compliance During periods of safety, and the arrival of pesticides to the soil, irrigation water and water sources, And also by not properly disposing of pesticide packages and residues, or leaving them randomly after use on the farm (Al-Quraishi, 2015) That there is a misconception that increasing the application of the pesticide or fertilizer benefits the plant more, and this is an incorrect belief because increasing the quantity and not adhering to the instructions given with the pesticide harms the plant because the pesticides, if the percentage of the pesticide increased, harms the plant a lot and brings negative results, while the increase in fertilizer causes dyspepsia such as What happens to humans from indigestion, the plant has a certain limit to saturation as well as humans, and there are farm owners who deal with the worker who does not realize the proper use of the pesticide and the safety period that must be adhered to, which is the period determined by the company manufacturing the pesticide that if we exceed it, the active substance of the pesticide will break down And thus affect the environment (Ghilan, 2018). Some pesticides require require a time from 7 days to 14 days, as the minimum permitted time is 7 days, and previously there were pesticides that needed 21 days, but the state prohibited their use of plants due to their harm to health. Option, for example, because it is sold to the market quickly, so the farmer does not wait for the specified period after spraying the pesticide but rather hastens to pick it, and this

is what causes health damage (Lazem, 2018). According to the reports of the Food and Agriculture Organization of the United Nations (FAO,2008) it appears that the use of pesticides and chemical fertilizers in agriculture has become a double-edged sword, between the necessity to strengthen production and provide food security, and the risks of overuse or misuse, and the global demand for fertilizers is expected to reach, To 247 million tons, by the year 2020, the use of pesticides and chemical fertilizers has been dramatically reflected in agricultural production, and it has been a key element in achieving agricultural renaissance in the world, Currently, at least half of the Earth's population depends for their food on crops produced using chemical fertilizers, especially fertilizers, Nitrogenous, but masking those tempting benefits, Due to the importance of fertilizers and chemical pesticides, some dangers related to the nutritional value, and the presence of harmful substances that negatively affect human health, also, these substances may affect the biological balance and the environment surrounding humans and may pollute the water supply, but the crops that have relied on fertilizers are associated And pesticides, which subjected humans to fatal injuries in recent years, perhaps the most prominent of which is cancer, among those diseases that threaten these farmers more than ordinary people are lymphomas, skin cancer, brain, and prostate cancer, The enthusiasm of farmers to increase the quantities of their crops led them to gradually overuse fertilizers, which have become damaging to the soil instead of making it more fertile. The remember (Arslan et al., 2016) agricultural pollutants, which include fertilizers and pesticides, which enter the water through irrigation and washing water, and that the composition of these complex materials about or to or with or concerning pesticides leads to the appearance of plants in a lean way or the presence of spots on the leaves or dryness of leaves and plants. Also, any decrease or increase in fertilization may affect the quality of the crop, as well as its toxicity, leads to pollution of the environment and affect human health when used incorrectly according to scientific information and recommendations, and then affect the Earth's atmosphere about oxygen and nitrogen gas. Mentioned (Al-Mansi, 2010) It seems that the goal of a large and fast profit is the biggest motivation for farmers to use fertilizers and chemicals, whether pesticides or hormones, to grow their crops and amplify crops in number, form and even color, which opened a large door for the manufacturers of these fertilizers to compete in creating everything that would gain the satisfaction of farmers not interested in what it causes of Harmful health and serious diseases to humans. (Al-Mallah and Al-Jabouri, 2018) And for the success of the process of producing a healthy plant and abundant food, there are several factors such as water, air, and light in addition to the nutrients present in the soil that we can control and provide by adding the correct fertilizers such as Compost and silage. Fertilizers are divided into two main types: organic fertilizers and chemical fertilizers manufactured from major components such as nitrogen, phosphorous and, potassium. The correct selection of the type of fertilizer, the appropriate

time, and the method of adding to the soil contribute greatly to the maximum benefit of the crop in terms of the amount of production and the strength and health of the plant. The quality of the crop, such as the color variation of the fruit, or a change in the flavor of some vegetables after they are cooked. (Al-Dagher et al., 2018) There are facts when pesticides are used to protect crops from insects, weeds, fungi, and other pests, but pesticides have a toxic effect on humans, and they can lead to both acute and chronic health effects. Either, depending on the size and how people are exposed to it. Some years old, inexpensive pesticides may still be present in the soil and water. These chemicals have been banned from agricultural use in developed countries, but they are still used in many developing countries, including Iraq. Farmers are required to reduce the quantity and quality of pesticides and fertilizers used to the minimum necessary to protect their crops and then protect the environment from pollution, preserve human health, as well as increase production through the optimal use of field crop residues and convert them into fertilizers and pesticides beneficial to the environment and human health, and from the above we can put forward The following questions:

1. What is the level of knowledge management of farmers' behavior and its relationship to scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health?

2. What is the relationship between knowledge management for farmers' behavior with scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health and between the studied variables?

Research Aims

1- Identify the level of knowledge management of farmers' behavior and its relationship to scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health?

2- Determine is the relationship between knowledge management for farmers' behavior with scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health and between the studied variables: (age, educational qualification, area of agricultural land owned, area of cultivated land of the total size, Years of practicing agriculture, the production of dunums of crops grown, the degree of use of modern agricultural techniques, the farmer himself is distinguished between that).

3-Identify sources of agricultural information that affect knowledge management of farmers' behavior and its relationship to scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health .

4-Identifying the problems that affect the knowledge management of farmers' behavior and its relationship to scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health.

5-Identifying the suggestions and solutions for developing the knowledge management of farmers' behavior and its relationship to scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health.

METHODOLOGY:

MATERIALS AND METHODS

The social survey method was used to describe research data.

Study tool: The researcher used the questionnaire, which is considered one of the successful tools in social research as a tool for collecting research data (Mohsen, 2011), and was presented to several specialists in the fields of fertilizers and pesticides as well as a group of specialists in agricultural extension and their views were expressed on the two axes of the study: pesticides and fertilizers and were Taking their opinions, amending, deleting and adding some paragraphs to the scale. A pre-test was conducted during December 2019 on 40 farmers from outside the research sample, for two areas in the Victory and Peace Agriculture Division. The first area was Al Zidan and the members of the initial test sample were on 20 farmers The Alpha Cronbach stability equation was used to verify the stability of the scale to the total degree of the axis of chemical fertilizers in the research, and the stability factor for the total degree of cognitive behavior management came out high, and its value (0.94), and this indicates that the study tool has the stability that Appropriate to the research objectives of the chemical fertilizer axis. The second area was the Hamdania region, and the second test sample was from 20 farmers The Alpha Cronbach stability equation was used to confirm the stability of the scale for the total degree and the axis of chemical pesticides in the research. Then he collected data in a personal interview for farmers for a month and a half starting from February 2020.

Research community and sample:

The research community was represented by all the farmers in the Victory and Peace Agriculture Division of the Baghdad / Karkh Agriculture Directorate,

which numbered (1045) farmers are registered, and the researcher selected a random sample from the study community, numbering (160) farmers to study the chemical fertilizer axis, i.e. (15.3%) of the study population, and (14.5%)of the study population, as a random sample, from the research community, to study the chemical pesticides axis, as the number reached (152) farmers, and was used to determine the size of the research sample for the two axes of the equation (Kreijcie & Morgan, 1970) and the law of equation(As the research community is homogeneous, as well as the fact that the farmers live in the same administrative boundaries of the agricultural division and have the same agricultural traditions, customs, and customs, knowing that the Victory and Peace Agriculture Division is sprawling and the number of villages in it is more than 45 villages. *[1], And annually they grow approximately 27,000 dunums of wheat, 7.000 dunums of potatoes, 600 dunums of tomato and cucumber crops, 400 dunums of grace, and other crops .... etc.

Measuring search variables:

First: The dependent scale: The level of management of cognitive behavior of farmers and their sources of information on scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health was measured by calculating the behavioral knowledge management for each respondent through his knowledge of the administrative behavior of the two axes of the study (the axis of chemical pesticides and the axis of chemical pesticides The number of paragraphs was 41, on a triple scale (low, medium, and high) and the scores were given (0, 1, 2), and thus the minimum scale score is 0 and the upper 82 degrees. Second: the independent variables:

1- Age: It was measured in the raw years of the respondent.

2- Academic qualification: they were measured (illiterate, read and write, elementary, intermediate, intermediate, bachelor's, higher degree) and grades were given to them (1, 2, 3, 4, 5, 6, 7) respectively.

3-The area of land owned by the agricultural: the raw area mentioned by the farmer.

4-Area of cultivated land out of total size: The actual cultivated area out of the total land owned by a farmer.

5- The number of years spent cultivating: It was measured by the number of years the respondent spent cultivating, in raw degree.

*1 Statistics of the Victory and Peace Agriculture Division, visit on 17/2/2020, Wednesday.

6- Donum production from cultivated crops: The dunum production of the cultivated crop was measured in tons and according to the type of crop.

7-The degree of use of modern agricultural techniques: It is measured through his behavioral and managerial knowledge of growing crops using modern technologies as soon as they appear in his area, through six graduated indicators, on a triple scale (agree, neutral, disagree) and scores are given (3, 2,1) on Accordingly, the scores obtained by each respondent are summed up.
8- The farmer considers himself distinguished among farmers: it is measured through his behavioral and managerial knowledge of growing crops better than others, through four leading indicators, on a triple scale (agree, neutral, disagree) and scores are given (3, 2.1) respectively. The scores obtained by each respondent are combined.
Third: Measuring sources of information, problems, and suggestions:
1-Sources of information: This variable was measured by giving one score for those who were not exposed to the information sources, and two degrees for those who were exposed to the source of information, and the degree of exposure to information sources is multiplied by the number of times of exposure, We obtain the total degree of exposure. Modern scientific recommendations.
2-Problems facing farmers: This variable was measured by giving a score for each problem that was mentioned by the respondent and was expressed and classified descriptively.

3- The proposals or opinions submitted by the farmers: This variable was measured by giving a score for each proposal that was mentioned by the respondent and was expressed and classified descriptively.

RESULTS AND DISCUSSION

1-Managing knowledge of farmers' behavior and their relationship to scientific sources of information to reduce the impact of fertilizers and chemical pesticides on the environment and human health.

The range of the respondents' scores in knowledge management behavior in the chemical fertilizer axis ranged between a minimum of 15.8 degrees, a maximum of 74.8 degrees with an arithmetic mean of 58.6 degrees, and a standard deviation of 16.5 degrees, and it was found that the majority of respondents, 57.5%, had average cognitive behavior management. As for the extent of the respondents' scores in knowledge management behavior in the chemical pesticide axis, between a minimum of 9.5 degrees, a maximum of 81.2 degrees with an arithmetic mean of 58.4 degrees, and a standard deviation of 30.6 degrees, and it was found that one-third of the respondents, with a percentage of 34.2%, had low cognitive behavior management, As shown in Table 1.

Table. Distribution of respondents according to the level of knowledge management of farmers' behavior

level Knowledge / Domains	low level (0-41)		Medium level (42-68)		High level (69-82)		Total
	Frequency	%	Frequency	%	Frequency	%	
Chemical fertilizers	26	16.25	92	57.50	42	26.25	160**
Chemical pesticides	52	34.21	44	28.95	56	36.84	152*
Total number of sample respondents in the field of pesticides (n = 152)			Total number of sample respondents in the field of fertilizers (n = 160)				

Deduced from Table 1 The management of cognitive behavior of farmers and their sources of information on scientific recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health is described as low in the two axes of fertilizers and chemical pesticides, and this is due to several reasons, the most important of which is the weak access to recent recommendations and information by the concerned authorities. This indicates him (the Food and Agriculture Organization of the United Nations, reduce pesticide risks, 19) that training and information sources on pest management through farmer field schools throughout the agricultural season raise awareness of the health risks associated with pesticides and encourage farmers to reduce their use of them and replace them with feasible and low pesticides The cost is non-toxic or less toxic, The training will be useful in how to avoid commercial pressure to use pesticides, As well as for the proximity of their personal characteristics to the respondents. 2- Determine is the relationship between knowledge management for farmers' behavior with scientific sources of information and recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health and between the studied variables: (age, educational qualification, area of agricultural land owned, area of cultivated land of the total size, number of years that Her case in agriculture, the production of dunums of crops grown, the degree of use of modern agricultural techniques, the farmer himself is distinguished between that).

A- There are significant differences between the average knowledge management behavior of farmers and their sources of information on scientific recommendations to reduce the impact of fertilizers and chemical pesticides on

the environment and human health and between the axis of chemical fertilizers and the axis of chemical pesticides. To test the significance of the mean differences in the degrees of knowledge management behavior of farmers and their sources of information on scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health, and between the axis of chemical fertilizers and the axis of chemical pesticides the statistical hypothesis was formulated (there are exist differences between the average knowledge management behavior of farmers and their sources of information About scientific recommendations to reduce the impact of fertilizers and pesticides Chemicals on the environment and human health and between the axis of chemical fertilizers and the axis of chemical pesticides) and when performing a "t" test it was found that the calculated value of "t" is 0.931 which is less than the tabular 1,645 at the level of significance 0.05, which indicates the absence of significant differences between the mean of the two study axes We therefore reject the statistical hypothesis that "there is no significant difference between the average degrees of knowledge management of farmers and the sources of their information on scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment, human health and the two pillars of the study", that is, there is no significant difference between the management of knowledge of farmers' knowledge and sources of information on Scientific recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health and the two pivots of the study, fertilizers and chemical pesticides, as shown in Table 2.

Table 2. The difference between the averages of the behavior management scores defined for the respondents

Domains / Data	Chemical fertilizers	Chemical pesticides
Number	160	152
Mean	66.91	58.40
S.D	16.49	30.62
Calculated value of T	0.931	
value (T) Tabular	0.05 ** At the level1.645	

B - The significant relationship between the degrees of knowledge management of farmers behavior and its relationship to sources of information and scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health and between the following independent variables: To Test the significance of the relationship between the variable of the two axes of study (fertilizers and chemical pesticides) and the independent factors, the statistical hypothesis was formulated. Calculating the Spearman-Brown correlation coefficient shows 1-The field of chemical fertilizers: The presence of a direct moral relationship at the level of 0.05 between the levels of management knowledge of the studied agricultural behavior and the variable of the number of

years that you spent in agriculture, and thus can be rejected the statistical hypothesis that "there is no significant relationship between with the rest of the variables, which is age, and academic qualification, The area of agricultural land owned the area of cultivated land of the total size, and the production of donuts of crops grown, the degree of use of modern agricultural techniques, the farmer himself is distinct among farmers. 2-The field of chemical pesticides: a direct correlation at 0.01 level between the degrees of knowledge management of the studied farmers' behavior and each of the following independent variables: age, the area of land owned by the farmer, the area of cultivated land of the total size, and the number of years spent in agriculture, And the number of years spent in agriculture, and the production of acres of crops grown, here it is possible to reject the statistical assumption that "there is no relationship between the degrees of management of knowledge of the studied farmers' behavior and the independent variables mentioned above and the acceptance of the alternative hypothesis, while it was found that there was no significant relationship with the rest of the variables, namely: Age, educational qualification, and degree of use of modern agricultural techniques. The farmer himself is distinguished among farmers, as shown in Table 3.

Table 3. Simple correlation coefficient between managing knowledge of farmers behavior and their relationship Among the studied independent variables

T	Domains / Independent variables	Simple correlation coefficient R2	
		Chemical fertilizers	Chemical pesticides
1	Age.	0.01	0.34**
2	Qualification.	0.11	0.07
3	The area of land is owend by agriculture.	-0.03	0.37**
4	The area of cultivated land of the total size.	-0.02	0.25**
5	The number of years I spent in agriculture.	0.18*	0.99**
6	production Donum from cultivated crops.	-0.12	0.28**
7	The degree of using modern agricultural techniques.	0.04	-0.05
8	The farmer himself is distinguished among the farmers.	-0.01	0.14
	*The value is significant at the level of 0.05	**The value is significant at The level 0.01	

3-Agricultural information sources that manage the knowledge of farmers' behavior and their relationship to scientific information sources and recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health. The results of the research indicate the management of knowledge of the behavior of farmers and their relationship to sources of information and scientific procedures to reduce the impact of fertilizers and chemical pesticides on the environment and human health, that

the source of information from the Internet by 66,88%, 89,47% comes first to the study axes of fertilizers and chemical pesticides, respectively, and was 65.63%, 60.63% ranked second in a row, as shown in Table 4.

Table 4. Distribution of respondents according to information sources in the Department of Knowledge of Farmer Behavior

Series	Domains / Sources of information	Chemical fertilizers		Chemical pesticides	
		Frequency	% N=160	Frequency	% N=152
1	An agricultural page for the daily newspaper.	76	47.5	94	61.84
2	Agricultural magazines	66	41.25	95	62.50
3	Agricultural programs on television.	97	60.63	97	63.81
4	agricultural programs in Radio	63	39.38	43	28.29
5	Extensional Leaflet.	63	39.38	59	38.82
6	Internet	107	66.88	136	89.47
7	Agricultural branch of the region.	33	20.63	53	34.87
8	Friends and family are experienced.	105	65.63	87	57. 24
9	The agricultural association in the region.	38	23.75	60	39.47
10	District Research in the region.	27	16.88	5	3.29

Table 5: Distribution of the respondents according to the sources of information for the overall degree in managing knowledge of farmers' behavior

Knowledge level / Domains	low level		Medium level		High level		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Chemical fertilizers	69	43.12	65	40.63	26	16.25	160	100
hemical pesticides	47	30.92	63	41.45	42	27.63	152	100

4- The problems that affect the management of knowledge of the behavior of farmers and their relationship to sources of information and scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health A- Domains of chemical fertilizers:

Concludes from Table (6). The management of knowledge of the behavior of farmers and it is relationship to sources of information and scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health, there are problems experienced by the farmer at the cognitive level of the axis of chemical fertilizers, the percentage came (23.13%, 28.13%, 30.00%), for the paragraphs (cause diseases) Such as cancer, lymphatic

diseases, animal fertilizers and plant residues are better after being treated with some nitrogenous materials and they come in a more healthy and environmentally friendly crop, and the expiration of chemical fertilizers and this comes with an adverse outcome to crop production), respectively, which is the least problem ratio, while the ratio (70.63%, 66.25 %, 65.00%), for paragraphs(Counseling training raises awareness of the health risks associated with pesticides, reducing their use and replacing them with less dangerous pesticides, speeding crop growth and shortening the growth period, killing harmful insects of crops), respectively.

Table 6. Repeated distribution of the problems facing the respondents in managing knowledge of farmers' behavior In the effect of chemical fertilizers.

Series	The field of chemical fertilizers / problems of Chemical fertilizer	chemical fertilizers n=160	
		Frequency	Percentage
1	Production increases dramatically and dramatically to raise the amount of their crops.	113	70.63
2	The agricultural renaissance is being achieved on a great level.	106	66.25
3	Available in the market at affordable prices.	104	65.00
4	It improves the look of crops and especially the exterior that seduces the shopper, and gives an impression of quality and maturity.	101	63.13
5	Big and fast profit is the biggest motivation for farmers to use chemical fertilizers.	101	63.13
6	There are no standards when adding fertilizer and certain ingredients.	69	43.13
7	Excessive use of chemical fertilizers has not only destroyed the soil but also made it more fertile.	54	33.75
8	Chemical fertilizer expiration This comes with a reverse product of crop production.	48	30.00
9	Animal fertilizers and plant residues are better after being treated with some nitrogenous materials and they come in a more healthy and environmentally friendly crop.	45	28.13
10	It causes diseases such as cancer and lymphatic diseases.	37	23.13

B- The field of chemical pesticides:

Table 7. discusses the management of knowledge of the behavior of farmers and its relationship to sources of information and scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health, there are problems experienced by farmers in the knowledge level of the axis of chemical pesticides, the percentage came (17,11%, 33,55%, 38,16%), For the paragraphs (pesticides with a high concentration cause cancerous diseases, sterility and birth defects, that expired pesticides are inexpensive but remain in the soil and water for a long time, cause diseases, fighting some pesticides needs 7-21

days before harvesting and selling them to the citizen), Respectively, (97.37%, 92.76%, 96.10%) of the paragraphs (the extension training raises awareness of the health risks associated with pesticides and reduces their use and replaces them with less dangerous pesticides, faster crop growth and shortening the growth period, killing Harmful insects of crops), respectively.

Table 7. Repetitive distribution of problems faced by researchers in managing knowledge of farmers' behavior in the impact of chemical pesticides

Series	The field of chemical pesticides / problems of Chemical pesticides	chemical pesticides n=152	
		Frequency	Percentage
1	It kills harmful insects of crops.	146	96.10
2	People who face health risks from exposure to pesticides at work, home, or parks.	120	84.87
3	Rapid crop growth and shortening growth period.	141	92.76
4	It can be provided from local markets at competitive prices.	140	92.11
5	Non-compliance with guidelines and recommendations when using genetically modified seeds treated with pesticides.	138	90.79
6	Guidance training raises awareness of the health risks associated with pesticides and reduces their use and replacement with less dangerous pesticides.	148	97.37
7	Not disposing of empty bottles well, and using them at home or other work causing a serious environmental disaster.	76	50
8	Combating some pesticides takes 7-21 days before harvesting and selling crops For the citizen.	58	38.16
9	Expired pesticides are inexpensive but remain in the soil and water for a long time, causing diseases.	51	33.55
10	Pesticides with a high concentration cause cancer, infertility, and birth defects.	26	17.11

Table 7. discusses the Department of Knowledge of Farmer Behavior and its Relationship with Information Sources and Scientific Recommendations to Reduce the Impact of Fertilizers and Chemical Pesticides on the Environment and Human Health shows that there are problems that the farmer suffers at the knowledge level of the chemical pesticide axis significantly, as the important paragraphs that affect the human and his health and the environment came with low levels and ratios And the paragraphs that have contact with crops to raise production and productivity, with advanced salary and proportions, and this result may be attributed to many reasons, including when using these pesticides working to increase through incentives to bear them and this leads to a rapid growth of the crop and increases the fruits, and the size, shape and type of the fruit, This is a clear indication of the responsibility of the concerned departments for not alerting and guiding when using chemical pesticides, including the

Agricultural Extension Service in particular, and the agricultural directorates.

5- Proposals and solutions to develop the management of knowledge of the behavior of farmers and their relationship to sources of information and scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health. The results of the research indicate that the management of knowledge of the behavior of farmers and its relationship to sources of information and scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health in farmers' proposals shows that the proportion (89,47%, 69,08%, 53,95%) of the paragraphs (activating the role of extension Agricultural in the field of fertilizers and chemical pesticides to change the behavior of farmers, influence the behavior of farmers that fertilizer and chemical pesticides cause cancerous diseases of all kinds, make guiding seminars by the agricultural people to change the directions of farmers before distributing fertilizers and chemical pesticides to determine the standards and quantities that can be used), respectively, as well Shown in remove table 8.

Table 8. Repeated Distribution of Researchers' Suggestions in Managing Knowledge of Farmer Behavior from the Impact of Fertilizers and Chemical Pesticides

Series	Domains / Suggestions	Chemical fertilizers		Chemical pesticides	
		Frequency	Percentage (n=160)	Frequency	Percentage (n=152)
1	Activating the role of agricultural extension in the field of fertilizers and chemical pesticides to change farmers' behavior.	119	74.38	136	89.47
2	Influencing farmers' behavior that fertilizer and chemical pesticides cause all kinds of cancerous diseases.	107	66.88	105	69.08
3	Extension seminars by the agricultural people to change Attitudes of farmers before distributing fertilizers and pesticides Chemical to determine the standards and quantities that can be used.	100	62.50	82	53.95
4	Activating the role of agricultural societies scattered in directorates All agriculture, regarding fertilizers and chemical pesticides He advised farmers on positive things and to stay away from Wrong	82	51.25	69	45.39

	practices.				
5	Work to close the borders and limit the import to benefit It is a locally produced crop.	75	46.87	88	57.89
6	Provide advisory brochures on fertilizers and chemical pesticides, And in an easy way such as drawings and diagrams.	46	28.75	74	48.68
7	Preventing the import of genetically modified seeds, except under conditions Examination by the state's quality control.	39	24.38	45	29.61

CONCLUSIONS AND RECOMMENDATIONS

1-The level of management of the cognitive behavior of farmers and their sources of information on scientific recommendations to reduce the impact of fertilizers and chemical pesticides on the environment and human health in the two axes of research, fertilizers and chemical pesticides, were between low and medium, meaning that the cognitive behavior of the farmers in the fertilizer axis was around 73.75%, and in the pesticide axis 63.16%.

2- There is no significant difference between managing the cognitive behavior of farmers and their sources of information on scientific recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health, and the two axes of the study are fertilizers and chemical pesticides.

3-It was found that farmers use their information to develop cognitive behavior management in growing crops from sources that are within reach, such as the Internet, agricultural programs, and experienced family, friends, and neighbors .

4-It has been established that there are problems that farms suffer from in terms of knowledge of the axes of fertilizers and chemical pesticides, largely in terms of recommendations and scientific information.

5- It became clear from the proposals that they are suitable for farmers, and that the agricultural and supportive government agencies should implement them and take them into account.

Developing the management of the cognitive behavior of farmers through scientific recommendations to reduce the impact of chemical fertilizers and pesticides on the environment and human health, By the competent agricultural departments from through planned extension programs such as holding

seminars, field days, individual and group meetings with farmers and periodically, and using practical clarification on how to use chemical fertilizers and pesticides, This is to reduce its impact on environmental pollution and human health, and the carcinogenic diseases they cause, and to teach and educate farmers to leave the use of fertilizers and chemical pesticides and to use alternatives to compost and silage because it is safer and healthier for the environment, human health and the best production.

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