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Application Level of Agricultural Environmental Practices for Vegetable Growers in Qaber- Alabid Village / Hammam Al-Aleel Area/ Ninevah Governorate

ABSTRACT

The aim of this study was to determining the application level of agricultural environmental practices for vegetable growers in Qaber Al-abed village/ Hammam AL- Aleel Area / Ninevah governorate, for the agricultural environmental practices in general and arranging these agricultural environmental practices according to the level of application for the vegetables farmers in Qaber Al – abid village /Hammam Al- Aleel / Nineveh governorate and determining the correlation relationship between the vegetables farmers for the agricultural environmental practices and some independent variables . This research included all the farmer's vegetables in Qaber Al- Abid village /Hammam Al- Aleel / Nineveh governorate which are 200 farmers. The data were collected by questionnaire after testing face validity and reliability and then we analyzing the data by used the arithmetic mean, spearman rank and person correlation coefficient. The results showed that the farmers level application for the agricultural environmental practices was moderate tend to increasing and also the results show that were a significant correlation between the farmer's level of application for the agricultural environmental practices and the level of education also there is no significant correlation with (age, number of working year in agriculture and specialty in planting vegetables). The research included some of conclusions and recommendations.

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INTRODUCTION

The issue of the environment and protected, preserved it from all kinds of pollution and one of the most important issues of the era and one of the most serious problems experienced by the countries of the world and the developing countries in particular, which can leave effects difficult to cure in the long term (Allam et al., 2015). Over the past three decades, the world has been increasingly aware that the current development model is no longer appropriate after its consumption lifestyle has been linked to serious environmental crises such as loss of biodiversity, The shrinking tropical forest areas and air pollution and water also the high temperature of the earth and the degradation and salinization of agricultural land, to add to that, increasing the proportion of desertification, Prompting a number of critics of that development model to create a developmental model that works to achieve harmony between the achievement of development goals on the one hand and the protection and sustainability of the environment on the other hand (Koshash, 2009). And that environmental protection is the proper use of natural resources and to prevent contamination and maintain balance the face of this pollution of the environment to add to that the environmental laws and regulations, The problem of environmental pollution is one of the most serious environmental problems faced by modern-day

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humans at the same time, this problem must be worked out in order to find quick solutions to it, because the more serious and complicated the solutions become more difficult and expensive. Every resource that is depleted borne by all members of the community, even those who did not use that resource directly. Therefore, humans should reconsider how they deal with the environment and proper planning to exploit their resources and think about the possible consequences of exploiting these resources. Also, study the risks of industrial waste, fuel combustion products and the increased use of chemical pesticides and other contaminants (Nusrat, 2011). In recent years in the context of the rapid change of the food economy, food safety, quality and environmental sustainability of agriculture, the concept of good agricultural practices appeared to reduce risks associated with pesticide use, taking into account public health, safety and environmental considerations (FAO, 2003). Implementation of good agricultural practices has become in some cases a part of the food chain approach to ensure food safety and quality this approach starts at the farm level with the application of good agricultural practices and then develops along the food chain to include good manufacturing practices and good hygiene practices. FAO, 2006 defines good environmental practices as successive practices that address field processes in terms of the environmental, economic and social aspects and the quality and quality of agricultural products. Agricultural practices are used during the cultivation, harvesting, processing, packing and storage of fruits and vegetables to prevent microbial contamination, Aware from the Arab Organization for Agricultural Development for the importance of disseminating these practices in Arab agriculture and increasing their adoption rates and in line with the directions of the sustainable agricultural development strategy for the coming two decades, The FAO Plan in 2007 has a project to disseminate good agricultural practices in Arab agriculture, the components of which include the preparation of a documentary study on these practices in Arab countries (Al-Luzi, 2007). It is the responsibility of agricultural extension to transfer the results of research and other agricultural practices and new methods to farmers. the Success to increasing agricultural production without harming natural resources depends on farm use of these agricultural practices and techniques (Kachash, 2009). As the conscious use of natural resources depends on the decision taken by the farmer to use a certain quality of resources, fertilizers and pesticides On his information, knowledge and attitude towards the use of environmentally in friendly way, farmers must have the capacity to adopt agricultural practices and techniques to seek healthy food production and to help farmers manage their farms in a manner consistent with the preservation of the environment. This led to the researcher to carry out this study. Some studies were conducted in the field of agricultural practices, for example the study of (Abdel Aziz okhatun, 2007), which indicated that the level of adoption of agricultural practices amounted to 89% of respondents who fall in the lower and moderate levels, this study showed also there is no significant correlation between the level of adoption and variables like age, educational level of farmers, the type of possession of land and the area of cultivated land. In the study (Abbas and Abdul Razzaq, 2008), there was a significant correlation between the level of adoption and age and the results shows also there is no significant correlation between the variable of listening to agricultural radio programs and watching programs and level of adoption. Tawfiq (2009) found that the average level of application was moderate, and there was a significant correlation between the level agricultural television of application of wheat farmers to the recommended practices, and the educational level, the type of possession of land, age and there is no significant correlation between the application level and area of cultivated land.

This study came to answer the following queries:

- What is the level of application of vegetable growers in the village of Qaber Al- Abd ,Hammam AL- Aleel Area Ninevah province the agricultural environmental practices in general?
- What the relationship between the level of vegetable growers to the agricultural environmental practices and for all of the following independent variables (age, educational level, number of years work in agriculture, specialization in vegetables farming)
- what the reasons that drive farmers to do some agricultural practices wrongly?

Research Objectives

The objectives of the current research are as follows:

- 1 - To determining the level of application of vegetable growers in the village of Qaber Al- Abd ,Hammam AL- Aleel Area Ninevah province the agricultural environmental practices in general.
- 2 - To arrangement of agricultural environmental practices according to the level of application to the farmers of vegetables in the village of Qaber Al- Abd ,Hammam AL- Aleel Area Ninevah governorate.
3. To determining the relationship between the level of vegetable growers to the agricultural environmental practices and for all of the following independent variables (age, educational level, number of years work in agriculture, specialization in vegetables farming).
- 4 - To identify the reasons that drive farmers to do some agricultural practices wrongly.

Hypotheses of the Study

The following hypotheses will be tested:

- 1- There is no significant correlation relationship between the level of vegetable growers to the agricultural environmental practices and age vegetable,)
- 2- There is no significant correlation relationship between the level of vegetable growers to the agricultural environmental practices and educational level vegetable
- 3- There is no significant correlation relationship between the level of vegetable growers to the agricultural environmental practices and vegetable of number of years work in agriculture.
- 4-There is no significant correlation relationship between the level of vegetable growers to the agricultural environmental practices and vegetable Of specialization in vegetables farming.

METHODOLOGY

The number of the respondents of this study was (70) were selected from (200) farmers belong to vegetable farmers in the village of Qaber Al- Abd ,Hammam AL- Aleel Area Ninevah province. We choose the respondents by random sampling of rate (35%). Aquestionnaire was prepared divided in to two parts: the first included the following independent variables, age was measured by the number of years for farmers, and the educational level was measured by assigning numerical codes for each level (1, literate, 2, Illiterate 3 primary 4, Intermediate elementary 5, Secondary school 6 intermediate 7, Institute 6, College), and the number of years worked in vegetable farm was measured by counting the number of years in which farms are engaged in vegetable growing. The specialization in vegetable farm was measured by assigning numerical symbols to the following levels (vegetables as main crops, secondary crops).

The second part of the questionnaire included (23) statements to measure the level of application of vegetable growers in agricultural environmental practices and was identified after reviewing the previous studies and literature related to the research topic (Tawfiq 2009, FAO 2003) and we put three alternatives to each statements (I apply always, apply rarely, don't apply we numbering the alternatives (3,2,1) respectively, so that the total score is representative of the level of application of agricultural practices by farmers. The validity of the questionnaire was verified after being presented to specialists in the Agricultural Extension Department and the Horticulture in College of Agriculture and Forestry and based on their notes we removed some statements and we redrafted others. Cronbach's alpha to obtained are reliability which (0.91) exceeding SPSS software was used to analyze the data collected, statistics such as frequency, percentage, mean, standard deviation and correlation was used. The data collected by personal interview based on a structured questionnaire.

RESULTS AND DISCUSSION

First: to determining the application level of agricultural environmental practices for vegetable growers in Qaber Al- abed village/ Hammam AL- Aleel Area / Ninevah governorate. The application level was classified into three categories using the mean and the standard deviation. The standard deviation (6.790) was combined with the mean (55.94) and in second steps we

mines the standard deviation with the mean to determine the middle category, which ranged between (49- 63). Since the lowest score was 38 and the highest score was 68, the first category was determined between 38-48 and the third category between (64-68) as shown in Table (1)

Table (1) Distribution of respondent according to application level of agricultural practices

Application level	Frequency	Percentage
38- 48 low	7	10
49-63 Moderate	50	71.429
64-68 High	13	18.571
100	70	Total

Table (1) shows the (71.4%) of respondents have a moderate level of agricultural practices, This may be due to the fact that farmers are accustomed to some of the traditional methods they used to grow vegetables, and this result is consistent with what they found (Abdel Aziz and Khattoun, 2007), also (10%) of respondents have low level of agricultural practices and for the percentage of high level is (18.5%).

Second: The arrangement of agricultural environmental practices according to the level of application of green farmers in the village of Qabr al-Abd . To achieve this objective, we get the mean of each statements of agricultural environmental practices and then we order of the averages descending as shown in table (2)

Table (2): The rank orders a agricultural practices items according application level for vegetable growers

Rank	The mean	Items
1	2.942	Farming in a good soil
2	2.8	Purification of seeds before farming them
3	2.785	Avoid the mixing of sewage with the irrigation water
4	2.77	Packing the vegetables crop in a clean cans
5	2.71	Using the organic fertilizers to improve the soil fertility
6	2.657	Getting reliable seeds from trusted resources
7	2.628	Protecting the fields and the resource of water from grazing to prevent the pollution
8	2.585	Recognizing the water resources which are specialized for farming
9	2.557	Using the crop rotation to improve the fertility soil
10	2.5	Protecting the soil superficiality layer washout
11.5	2.48	Avoid wasting by using chemical fertilizers
11.5	2.48	Reducing the use of chemical pesticides
13	2.47	Maintaining the irrigation equipment to limit of water leaking
14	2.442	Perform the process of killing diseases in time
15	2.38	Storing the pesticides in safe places and far from the places of storing the production
16	2.34	Storing the food products under healthy and suitable environmental circumstances
17	2.328	Use the scientific methods for marketing the crops
18.5	2.314	Doing the process of terminating the insects in time
18.5	2.314	Using the scientific ways to keep and store crops
20	2.3	Using the mechanical farming
21	2.28	Using the equipment of woody wind
22	1.54	Doing the process of irrigation at night to reduce the evaporation
23	1.3	Following the system of reusing water after purifying it

According to Table 2, the agricultural environmental practices according to their level of application to the vegetable farmers statement, (fertile soil agriculture) was reported to have the highest mean value (2.942). This is interpreted as that application of these practices has become widespread among most farmers, making them practice at the beginning of each crop. Table 2 also showed the statement, (water purification systems) have the least mean value. This is interpreted as that the respondent's don't have enough knowledge of how agricultural practices related to water reuse systems have been applied. This has been reflected in their low application of these agricultural practices.

Third: determine the correlation relationship between the level of vegetable growers to the agricultural environmental practices with each of the following independent variables (age, educational level, number of years work in agriculture, specialization in vegetable farming).

1- (Age):

In order to find the correlation between age and level of application of agricultural environmental practices, the correlation coefficient was (0.077) this mean that there is no significant correlations according to the value of (t) calculated (0.636), which is less than value tabular (1.671) this is interpreted as that the age Has with farmers' application of agricultural environmental practices.

2- education level:

In order to find the correlation relationship of the level of education and level of application of agricultural environmental practices, we used the Spearman coefficient which was (0.333) which is significant at (0.01) according to the value (t) calculated (2.912) Which is larger than the tabular value (2.390) This indicates that there is a significant correlation between the level of education and the level of application agricultural environmental practices. This may be due to the fact that the high level of education of the farmer makes it more receptive to the application of agricultural practices and this is reflected in the practice of agricultural work for the cultivation of vegetables.

3-The number of working years in agriculture:

To determine the correlation between the number of working years in agriculture and the level of farmers' application of agricultural environmental practices, the simple correlation coefficient was used, the value was (0.184), which is no significant according to the calculated value (t) (1.542) this degree less than the tabular value (1.671), this indicates that there is no significant correlation between number of working years in agriculture and the level of farmers' application of agricultural environmental practices.

4- Specialization in in vegetable farming:

To determine the correlation between the specialization in in vegetable farming and the level of farmers' application of agricultural environmental practices, we used the Spearman correlation the value was (0.018) which is no significant according to the value of (t) calculated (0.148), which is less than the tabular value (1.671). This result indicates that there is no significant correlation between the specialization in in vegetable farming and the level of farmers' application of agricultural environmental practices.

Table: (3) The correlation between application level of agricultural environmental practices and some variables

Variables	Frequency	%	r value	Rs. value	T	
					Calculated	Table
age (30-47)year (48-65)year (66-83)year	22 40 8	31.429 57.143 11.428	0.077	_____	0.636	1.671
Level of education Lit rate Illiterate Primary Intermediate Secondary school Institute College	0 21 19 15 6 3 6	0 30 27.142 21.429 8.571 4.286 8.571	_____	0.333	2.912	2.390
Number of working years in Agriculture (less than 30) (30 - 49) (49 More than)	30 29 11	42.857 41.429 15.714	0.184	_____	1.542	1.671
Main crop Secondary crop	51 19	72.857 27.143	-----	0.018	0.148	1.671

Fourth: To identify the reasons that drive farmers to do some agricultural practices wrongly.

Table (4) shows that the main reasons were the lack of controls that prevent farmers from doing some wrong practices by 89% of the total sample of farmers, Followed by a strong belief in the importance of using chemical fertilizers to increase production by 86%, then lack of experience and awareness of the harmful effects of the use of fertilizers and pesticides and the ignorance of farmers by scientific methods to market crops by 49 and lack of experience and awareness of the proper methods of irrigation water use by 45 followed by farmers return to practice Wrong with 23

Table: (4) Illustrate the distributing of respondents according to the reasons that makes them to perform some wrong practices

%	Frequency	Reasons
89	62	There is no rules prevent to the farmers from doing the wrong practices
86	60	The firm belief with the importance of chemical fertilizers to increase the production
70	49	lack of experience and the consciousness of wasting damages from using fertilizers and pesticides
70	49	The unawareness of the farmers with the scientific methods for marketing crop
64	45	lack of experience and the consciousness with the safety ways to use irrigation water
33	23	The farmers used to do the wrong practices

From the above we concluded

1. Most of the farmers in the research area have moderate level of application in agricultural environmental practices. This indicates that farmers in the research area still maintain some traditional methods and did not grow up to the required level of application of agricultural environmental practices to add to that the lack of requirements for implementing these practices
2. The educational level is related to farmers' level of application in agricultural environmental practices compared to other variables

3. The most agricultural practices applied by farmers are agriculture in fertile soil and purification of seeds before planting and the least applied is to follow the systems of reuse of water after purification
- 4 - One of the most important reasons for farmers to do some of the practices wrongly is the lack of controls that prevent farmers from doing the wrong practices followed by the farmers' belief in the importance of using chemical fertilizers to increase production.

recommendations

1. Dissemination of agricultural environmental practices through the mass media such as radio and television, which is one of the most widespread means and not neglecting the publications that indicate the importance of applying agricultural practices to increase production and improve quality.
2. Focus on extension activities on farmers with characteristics associated with increasing application without neglecting other farmers whose efforts should be intensified.
- 3 - Strengthening the role of extension in raising awareness of farmers the importance of agricultural environmental practices and away from the use of fertilizers chemical being a malpractice.
- 4 - Conduct similar studies to this research targeting other variables related to the level of application of agricultural environmental practices.

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مستوى تطبيق الممارسات البيئية الزراعية لزراع الخضر في قرية قبر العبد ناحية - حمام العليل / محافظة نينوى

زهراء ميسر البصو

قسم الإرشاد ونقل التقنيات الزراعية- كلية الزراعة والغابات- جامعة الموصل- العراق

المستخلص

هدف البحث الى تحديد مستوى تطبيق الممارسات البيئية الزراعية لزراع الخضر في قرية قبر العبد ناحية حمام العليل / محافظة نينوى بشكل عام وترتيب الممارسات البيئية الزراعية وفقا لمستوى تطبيقها لمزارعي الخضر في قرية قبر العبد ناحي حمام العليل / محافظة نينوى وتحديد علاقة الارتباط بين مستوى تطبيق مزارعي الخضر للممارسات البيئية الزراعية وبين بعض المتغيرات المستقلة. شمل البحث جميع مزارعي الخضر في قرية قبر العبد التابعة لناحية حمام العليل / لمحافظة نينوى والبالغ عددهم (200). وجمعت البيانات بوساطة استمارة استبيان بعد استخراج الصدق الظاهري للاستبيان وثباته وبلغ معامل الثبات (0.91) وحللت البيانات استخدم المتوسط الحسابي ومعامل ارتباط الرتب لسبيرمان ومعامل ارتباط بيرسن ، واوضحت النتائج ان معظم المزارعين مستوى تطبيقهم للممارسات البيئية الزراعية هو متوسط يميل الى الارتفاع ، وجدت علاقة ارتباط معنوية بين مستوى تطبيق المزارعين للممارسات الزراعية والمستوى التعليمي بينما لا توجد علاقة ارتباط معنوية مع العمر، عدد سنوات العمل في الزراعة ، والتخصص في زراعة الخضر . وقد تضمن البحث بعض الاستنتاجات والتوصيات.

الكلمات المفتاحية: الممارسات البيئية الزراعية، مستوى التطبيق.