



IDENTIFYING THE LEVEL OF SATISFACTION OF DATE PALM ORCHARD OWNERS REGARDING ADVISORY, PREVENTIVE, AND SUPPLY SERVICES PROVIDED IN AL-SUWAYRA DISTRICT, WASIT GOVERNORATE

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ABSTRACT

The research aims to identify the level of satisfaction of date palm orchard owners regarding the advisory, preventive, and supply services provided to them in Al-Suwayra district, Wasit Governorate. The study population consisted of all date palm orchard owners in Al-Suwayra, totaling (1694) individuals. A random sample of (9%) was selected, resulting in a sample size of (152) respondents. Data was collected using a questionnaire covering the satisfaction of orchard owners with the advisory, preventive, and supply services offered to them. The data was analyzed using the SPSS statistical analysis program, assigning weights (1, 2, 3) to the levels of farmers' satisfaction (dissatisfied, somewhat satisfied, satisfied). Thus, the highest value a farmer could receive was (3) and the lowest was (1). The scale was divided into three levels: dissatisfied (1-1.667), somewhat satisfied (1.668-2.334), and satisfied (2.335-3). Statistical methods such as standard deviation and mean were employed.

The results of the first domain indicated that the level of satisfaction among respondents regarding advisory services was somewhat satisfied, with a percentage of (44.7%) and a mean score of (2.058) and a standard deviation of (0.402). For the second domain, the level of satisfaction of date palm orchard owners regarding preventive services was also somewhat satisfied, with a percentage of (45%) and a mean score of (2.005) and a standard deviation of (0.518). In the third domain, the level of satisfaction regarding supply services was somewhat satisfied with a percentage of (47%) and a mean score of (2.105) and a standard deviation of (0.473).

The researcher recommends the formation of a comprehensive technical committee composed of specialized employees in date palm services (advisory, preventive, and agricultural supplies) to oversee the processes related to the cultivation of new orchards, maintenance of existing ones, harvesting, marketing, and processing to achieve the satisfaction of orchard owners. Additionally, it is essential to improve advisory, preventive, and supply services comprehensively to enhance orchard owners' satisfaction and productivity.

Keywords: Extension services, agricultural equipment, palm trees.



التعرف على مستوى رضا اصحاب بساتين النخيل عن الخدمات الإرشادية ، والوقائية ، والتجهيزية المقدمة لاصحاب البساتين في قضاء الصويرة/ محافظة واسط .

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الخلاصة

استهدف البحث الحالي الى التعرف على مستوى رضا اصحاب بساتين النخيل عن الخدمات الإرشادية، والوقائية، والتجهيزية المقدمة لاصحاب البساتين في قضاء الصويرة/ محافظة واسط . حيث شمل مجتمع البحث من جميع أصحاب بساتين النخيل في قضاء الصويرة/ محافظة واسط والبالغ عددهم (1694)، وقد سحبت عينة عشوائية بنسبة (9 %) من أصحاب البساتين فكان مقدار حجم العينة (152) مبحوثاً . وجمعت البيانات باستخدام الاستبانة شملت (3) محاور لتحديد رضا اصحاب البساتين وهي (الرضاعن الخدمات الارشادية، الرضا عن الخدمات الوقائية، الرضا عن الخدمات التجهيزية) المقدمة لهم، وتم تحليل البيانات باستخدام برنامج التحليل الاحصائي spss أعطيت الاوزان (1,2,3) لمستويات قياس رضا الزراع (غير راضي، راضي نوعاً ما، راضي) ، وبذلك اعلى قيمة يحصل عليها الزراع (3) درجة واقل درجة هي (1) درجة، تم تقسيم المقياس الى ثلاث مستويات غير راضي (1-1,667)، راضي نوعاً ما (1,668-2,334)، راضي (2,335-3) . واعتمدت الاساليب الاحصائية مثل ، الانحراف المعياري ، والمتوسط الحسابي . وظهرت نتائج البحث للمحور الاول/ ان مستوى رضا المبحوثين عن الخدمات الارشادية كانت راضي نوعاً ما بنسبة (44,7 %) وبمتوسط حسابي (2,058) وانحراف معياري (0,402)، واما نتائج المحور الثاني/ تحديد مستوى رضا أصحاب بساتين النخيل عن الخدمات الوقائية كانت راضي نوعاً ما بنسبة (45 %) وبمتوسط حسابي (2,005) وبانحراف معياري (0,518)، وجاءت نتائج المحور الثالث/ تحديد مستوى رضا أصحاب بساتين النخيل عن الخدمات التجهيزية كان راضي نوعاً ما بنسبة (47 %) وبمتوسط حسابي (2,105) وبانحراف معياري (0,473) ويشير ذلك الى وجود ضعف في تكامل الخدمات المقدمة وعدم رضا اصحاب البساتين عن تلك الخدمات. واوصى الباحث بضرورة تشكيل لجنة فنية متكاملة تتألف من مجموعة من الموظفين المتخصصين في مجال خدمة النخيل (الارشاد والوقاية والتجهيزات الزراعية) تكون مسؤوليتها الاشراف على سير العمليات المتعلقة بزراعة البساتين الجديدة وعمليات خدمة البساتين المنتجة وحتى جني المحصول وتسويقه وتصنيعه وتحقيق رضا اصحاب البساتين، وضرورة تحسين الخدمات الارشادية والوقائية والتجهيزية لاصحاب بساتين النخيل بشكل متكامل لتحقيق رضاهم ولتحسين انتاجياتهم.

الكلمات المفتاحية: الخدمات الإرشادية، التجهيزات الزراعية، النخيل.

INTRODUCTION

The development of the agricultural sector is an urgent necessity due to its significant role in the national economy of countries. This requires these countries to adopt programs aimed at increasing production and productivity, as well as improving agricultural conditions through the use of modern agricultural technologies in both plant and animal sectors. This aims to provide diverse sources of food crops, including dates, for the common uses of community members (Arab Organization for Agricultural Development, 2000).

Dates are considered one of the important national resources in Iraq, alongside natural resources such as crude oil and others. The advancement of date palm cultivation requires expanding its cultivation in various suitable areas and utilizing scientific technologies and recommendations, as well as implementing a series of productive and advisory projects to increase the number and production of date palms (Hassan, 2016).

Efforts to provide opportunities for increasing agricultural production under controlled conditions using modern technologies, such as types of fertilizers and their quantities and concentrations, chemical control of diseases and pests, and modern irrigation techniques in



pesticide spraying operations, enable farmers to achieve productivity that can reach more than five times that of traditional agriculture. This also improves product quality and increases the revenues of producers and their families, leading to their satisfaction (**Al-Jabouri, 2013**).

It is noteworthy that most farmers aspire to obtain services in various aspects that cover all their needs, achieving their satisfaction with what is offered to them, as they are capable of identifying the characteristics of those services (**Al-Hafez & Al-Taie, 2022**). Additionally, these services should meet their requirements by developing skills and knowledge in managing their agricultural activities to increase their productivity, production, and economic returns (**Al-Zaydi et al., 2016**), and should be based on scientific foundations according to the actual needs of farmers to enhance their performance and production efficiency (**Ridha et al., 2020**).

Therefore, the content of the services must address the primary needs of farmers within their agricultural activities and systems, achieving their goals while being modern and catering to their diverse needs and desires to ensure their satisfaction (**Shaib et al., 2019**). Moreover, it should address the problems and obstacles that hinder their agricultural work in areas such as financing, marketing, and certain administrative and technical aspects, thereby gaining the satisfaction of farmers and helping them adapt to the working environment and develop their skills (**Khamis et al., 2023**). There should also be attention to training and programs that enhance and improve their livelihoods and satisfaction with the integrated services provided (**Ridha & Ali, 2020**).

To improve the service reality, it is essential to enhance the efficiency and effectiveness of service activities by the relevant authorities, creating a continuous extension line to farmers effectively (**Al-Salhi, 2021**). Providing integrated services from responsible entities to farmers and intensifying service activities through training courses, advisory seminars, and various advisory fields, along with continuous communication with them, is crucial (**Armsh, 2023**).

The agricultural field has witnessed developed modern trends, methods, and mechanisms, including allowing non-governmental agricultural companies or the private sector to participate in the development of agriculture. This means providing opportunities for non-governmental agricultural organizations to participate in delivering advisory services in general and supplying agricultural technologies in particular. Empowering farmers with agricultural supplies largely depends on meeting their needs and is facilitated through the effectiveness of related advisory, supply, and service activities, which ensures farmer satisfaction (**Al-Shammari, 2014**).

It is essential that the services provided are multi-sourced and not limited to the government sector, but also involve responses from other sectors to farmers' requests, keeping pace with agricultural developments and changes to achieve their satisfaction with comprehensive services for all their needs (**Iskandar, 2014**).

Al-Taie (2014) emphasized the need to move away from traditional service delivery, where the service provider acts as a teacher and the farmer is merely a recipient. Their satisfaction is achieved by following modern policies that stem from the actual needs and problems faced by farmers. Expanding management practices also improves the specialized efficiency of farmers, leading to progress in their satisfaction with service management and a complete belief in developing their capabilities through expanding government support for



small and medium-sized farms to enable owners to develop them and achieve satisfaction with the services provided (**Sami, 2021**).

Satisfaction is a critical factor in facing the challenges farmers encounter. It is understood through farmers' feelings of comfort towards agricultural advisory and development organizations, as a result of the educational activities and opportunities provided to them and their relevance to their circumstances, aiming to improve their situation, meet their needs, and address the fundamental problems they face to enhance production (**Al-Darb, 2013**).

Moreover, satisfaction is significantly important for farmers, especially in developing date palm orchards. The roles of all supporting agencies, such as advisory services, pest control, supplies, and follow-up, must be activated to enhance agricultural reality, as well as develop the knowledge and skills of farmers to increase production and improve quality and their satisfaction with it (**Al-Salhi, 2016**). The greater the benefits and advantages an individual receives, the more motivated they become to exert intensive efforts in performance (**Abd & others, 2024**).

Several targeted projects have emerged to improve farmers' situations and their satisfaction, including those provided by the General Authority for Agricultural Guidance and Cooperation, the General Authority for Plant Protection, and agricultural supplies, which reflect on farmers and improve their social and economic conditions, achieving their satisfaction. However, farmers rarely achieve complete satisfaction. **Al-Taie (2006)** found that satisfaction cannot be realized among farmers unless there is specialization in agricultural work and its fields, as it is an effective means and strategy for its advancement.

Weak execution of advisory activities, a shortage of agricultural advisors, insufficient supplies, and a lack of full coverage for farmers, along with the limited presence of plant protection engineers in the field, and the absence of various factors, including weak advisory, preventive, and supply services provided to farmers of this agricultural style, contribute to this situation. Additionally, there is a lack of studies on palm trees economically and socially and their importance in the lives of residents and farmers (**Majid, 2021**).

Based on the above, the research problem crystallized in identifying the level of satisfaction among orchard owners of palm groves in Essaouira district, Wasit governorate regarding the advisory, preventive, and supply services provided to them. The current research aims to answer the following question:

What is the level of satisfaction among orchard owners of palm groves in Al- Suwaira district, wasit governorate regarding the advisory, preventive, and supply services provided to them?

Research Objective

- To identify the level of satisfaction among orchard owners regarding the advisory, preventive, and supply services provided to them in the Al-Suwaira district, Wasit Governorate.

Research Methodology

The descriptive method was used in conducting the research, which aims to reveal the studied reality by accessing data that indicates the satisfaction of date palm orchard owners



regarding the advisory and preventive services provided to them. It falls within survey research that provides appropriate data and information about a specific phenomenon or desired incident (Malham, 2000). It involves accurately describing reality through qualitative expression that describes the phenomenon and clarifies its characteristics or quantitative expression that gives us a numerical description of reality through data collection, followed by analysis and announcing the results of that data analysis to come up with a set of proposals and scientific recommendations to guide work in the present and future.

Research Community and Sample

The research community included all date palm orchard owners in Al-Suwaira district, Wasit Governorate, totaling 1694. A random sample of 9% was drawn from the orchard owners, resulting in a sample size of 152 participants.

Data Collection Tool

To achieve the desired results from the research, the researcher used a questionnaire as a data collection tool related to the research topic, due to its suitability for the methodology employed. The questionnaire aims to gather data and facts, providing more objective data compared to other data collection methods. It consists of three parts to assess the satisfaction of orchard owners regarding the advisory, preventive, and supply services provided to them. The preparation of the questionnaire went through several stages:

1. **Initial Preparation:** The initial questionnaire was developed to assess the satisfaction of date palm orchard owners concerning the advisory, preventive, and supply services provided to them, based on sources, studies, and feedback from professionals in related institutions.
2. **Development of the Questionnaire and Scale:**
 - The items of the questionnaire were presented to 10 experts (or judges) with specializations in plant protection and agricultural advisory services to evaluate their agreement with each item. They were asked to indicate their agreement on a three-level scale (Agree, Agree with Modification, Disagree) and to suggest modifications or additional items. This step is crucial for assessing face validity and content validity. Validity is an important characteristic that measurement tools should possess (Aliyan *et al.*, 2010), and specialized judges are a primary source for assessing validity.
 - A cut-off threshold (criterion) for retaining any item in its final form was set at 75%, which indicates the tool's validity (Al-Zibari, 2011).
 - Numerical values were assigned to the agreement scale as (2, 1, 0) respectively, and the mean scores of the experts' agreements were calculated. All items achieved an agreement rate exceeding the cut-off threshold.
3. **Finalizing the Questionnaire:** The final version of the questionnaire regarding the satisfaction of date palm orchard owners about the advisory and preventive services provided to them was produced.
4. **Reliability Testing:**

An initial test was conducted on the items regarding the satisfaction of date palm orchard owners concerning the advisory, preventive, and supply services provided to them using a sample of 30 participants selected randomly (outside the main research



sample). The questionnaire was administered through interviews to check reliability and verify its suitability for collecting the necessary data, making any required adjustments. Reliability is a critical characteristic that measurement instruments should possess; a reliable tool yields the same results when applied repeatedly to the same individuals under the same conditions (Al-Jadari *et al.*, 2009). Reliability indicates the degree of consistency in measurement results upon repetition (Al-Zibari, 2011). The split-half method was used to measure reliability, resulting in a reliability coefficient of 0.94 and a validity coefficient of 0.98.

Data Collection and Analysis

Data were collected from the 152 date palm orchard owners in the research sample using the questionnaire through interviews that assessed their satisfaction with the advisory, preventive, and supply services provided to them. Data collection took place over three months: April, May, and June 2024. After completing data collection, sorting, and tabulation, data were analyzed using the Statistical Package for the Social Sciences (SPSS). Weights of (3, 2, 1) were assigned to the levels of farmer satisfaction (Dissatisfied, Somewhat Satisfied, Satisfied), where the highest score a farmer could achieve is 3 and the lowest is 1. The scale was divided into three levels: Dissatisfied (1 - 1.667), Somewhat Satisfied (1.668 - 2.334), and Satisfied (2.335 - 3). Statistical methods such as split-half, frequencies, percentages, standard deviation, and mean were employed.

Presentation and Discussion of Results

The aim is to identify the level of satisfaction among date palm orchard owners regarding the advisory, preventive, and supply services provided to them in Al-Suwaira district, Wasit Governorate.

First Axis: Determining the Satisfaction Level of Date Palm Orchard Owners Regarding the Advisory Services Provided to Them

The research results indicated that the highest percentage of satisfaction is 44.7%, categorized as "Somewhat Satisfied" with a mean score of 2.058 and a standard deviation of 0.402. Additionally, 37.5% of the participants fell within the "Satisfied" level, with a mean score of 1.406 and a standard deviation of 0.383. The lowest percentage, at 17.8%, was categorized as "Dissatisfied," with a mean score of 2.735 and a standard deviation of 0.483, as illustrated in Table 1.

Table (1): Distribution of Respondents According to Satisfaction with the Advisory Services Provided to Them.

Satisfaction Level	Satisfaction Degree	Number of Farmers	Percentage %	Mean Score	Standard Deviation
Satisfied	1 – 1.667	57	37.5	1.406	0.383
Somewhat Satisfied	1.668 – 2.334	68	44.7	2.058	0.402
Dissatisfied	2.335 – 3	27	17.8	2.735	0.483
Total		152	100	2.066	0.422

It is clear from Table (1) that the level of satisfaction among respondents regarding the advisory services was somewhat satisfied. This may be attributed to the fact that the services



provided by the advisory organization do not fully meet their needs and do not address all the issues faced by date palm orchard owners.

1) Satisfaction with the Method of Providing Advisory Services

The items related to the field of "satisfaction with the method of providing advisory services," consisting of 5 items, received mean scores ranging from 1.605 to 2.395, with standard deviations ranging from 0.529 to 0.72, as shown in Table (2).

Table (2): Distribution of Respondents According to Satisfaction with the Method of Providing Advisory Services.

Item Number	Item Description	Mean Score	Standard Deviation	Rank	Satisfaction Level
1	Simplicity in providing advisory services	1.605	0.529	5	Satisfied
2	Clarity in the presentation of advisory services	2.151	0.628	2	Somewhat Satisfied
3	Opportunity for date palm orchard owners to ask questions and receive answers	2.105	0.653	4	Somewhat Satisfied
4	Opportunity for practical experimentation when possible	2.395	0.720	1	Dissatisfied
5	Use of diverse advisory methods (meetings, seminars, publications, etc.)	2.118	0.640	3	Somewhat Satisfied
Overall Mean		2.075	0.634		Somewhat Satisfied

It is clear from Table (2) that the item "Opportunity for practical experimentation when possible" ranked first with a mean score of 2.395 and a standard deviation of 0.720, falling within the "Dissatisfied" level. This may be attributed to the limited use of scientific applications by agricultural advisors, as experimentation is the practical application of agricultural facts, information, practices, and recommendations that have been proven effective. Through experimentation, new agricultural innovations can be implemented in the fields, leading to behavioral changes related to skill development for farmers.

The items related to "Clarity in the presentation of advisory services" and "Use of diverse advisory methods (meetings, seminars, publications, etc.)" ranked second and third, respectively, receiving mean scores of 2.151 and 2.118, with standard deviations of 0.628 and 0.640, respectively, both falling within the "Somewhat Satisfied" level. The reason for this is that the services are not provided in the required form and do not fully meet the need of the farmer in a timely manner.

The item regarding "Opportunity for date palm orchard owners to ask questions and receive answers" ranked fourth with a mean score of 2.105 and a standard deviation of 0.653, also falling within the "Somewhat Satisfied" level. In contrast, the item concerning "Simplicity in providing advisory services" ranked last with a mean score of 1.605 and a standard deviation of 0.529, falling within the "Satisfied" level.

2) Satisfaction with the Subject of Advisory Services and Their Objectives

The items related to the field of "satisfaction with the subject of advisory services and their objectives," consisting of 5 items, received mean scores ranging from 1.861 to 2.131, with standard deviations ranging from 0.810 to 0.946, as shown in Table (3).

**Table (3):** Distribution of Respondents According to Satisfaction with the Subject of Advisory Services and Their Objectives.

Item Number	Item Description	Mean Score	Standard Deviation	Rank	Satisfaction Level
1	Relevance to the needs of date palm orchard owners	1.882	0.821	4	Somewhat Satisfied
2	Addressing urgent problems affecting date palms	1.888	0.810	3	Somewhat Satisfied
3	Clarity of the goal(s) in the subject of the service	1.908	0.816	2	Somewhat Satisfied
4	Comprehensiveness of the advisory service across all fields and activities of date palm orchards	2.131	0.946	1	Somewhat Satisfied
5	Modernity and relevance of the subject of the service	1.861	0.822	5	Somewhat Satisfied
Overall Mean		1.934	0.843		Somewhat Satisfied

Analysis of Table (3)

It is evident from Table (3) that the item regarding "Comprehensiveness of the advisory service across all fields and activities of date palm orchards" ranked first with a mean score of 2.131 and a standard deviation of 0.946. The item concerning "Clarity of the goal(s) in the subject of the service" ranked second, receiving a mean score of 1.908 and a standard deviation of 0.816.

The item related to "Addressing urgent problems affecting date palms" ranked third, with a mean score of 1.888 and a standard deviation of 0.810. The item "Relevance to the needs of date palm orchard owners" came in fourth with a mean score of 1.882 and a standard deviation of 0.821. Lastly, the item regarding "Modernity and relevance of the subject of the service" ranked fifth, with a mean score of 1.861 and a standard deviation of 0.822.

All items in this area fell within the "Somewhat Satisfied" level, with an overall mean score of 1.934 and a standard deviation of 0.843. This may be attributed to the fact that the advisory service does not encompass all fields and activities of orchard management. Additionally, the objectives and topics of the advisory service do not adequately reflect the needs and problems faced by the orchard owners, as they are too general and do not contribute to improving production or maintaining correct practices.

3) Satisfaction with the Timing of Providing Advisory Services

The items related to the field of "satisfaction with the timing of providing advisory services," consisting of 4 items, received mean scores ranging from 1.868 to 1.914, with standard deviations ranging from 0.810 to 0.829, as shown in Table (4).

**Table (4):** Distribution of Respondents According to Satisfaction with the Timing of Advisory Services.

Item Number	Item Description	Mean Score	Standard Deviation	Rank	Satisfaction Level
1	Providing the service at times of request	1.868	0.811	4	Somewhat Satisfied
2	Providing guidance and warnings before issues arise	1.914	0.821	1.5	Somewhat Satisfied
3	Timing of service provision as needed or continuously	1.888	0.810	3	Somewhat Satisfied
4	Agricultural advisor spending enough time when visiting orchard owners	1.914	0.821	1.5	Somewhat Satisfied
Overall Mean		1.896	0.816		Somewhat Satisfied

Analysis of Table (4)

It is evident from Table (4) that the two items related to "Agricultural advisor spending enough time when visiting orchard owners" and "Providing guidance and warnings before issues arise" ranked first, each receiving a mean score of 1.914 and a standard deviation of 0.821. The item "Timing of service provision as needed or continuously" ranked third with a mean score of 1.888 and a standard deviation of 0.810. Meanwhile, the item "Providing the service at times of request" ranked fourth with a mean score of 1.868 and a standard deviation of 0.811.

All items in this area fell within the "Somewhat Satisfied" level, with an overall mean score of 1.896 and a standard deviation of 0.816. This may be attributed to the fact that agricultural advisors are bound by official work schedules that define their working hours, coupled with the large number of date palm orchard owners and the lack of resources to contact all of them at different times.

4) Satisfaction with the Providers of Advisory Services

The items related to the field of "satisfaction with the providers of advisory services," consisting of 4 items, received mean scores ranging from 1.026 to 1.901, with standard deviations ranging from 0.197 to 0.827, as shown in Table (5).

**Table (5):** Distribution of Respondents According to Satisfaction with the Providers of Advisory Services.

Item Number	Item Description	Mean Score	Standard Deviation	Rank	Satisfaction Level
1	They welcome you and listen when you meet them	1.092	0.352	3	Satisfied
2	Respect for the orchard owner	1.026	0.197	4	Satisfied
3	Interest in the ideas of orchard owners	1.855	0.817	2	Somewhat Satisfied
4	Spending enough time to discuss problems when visiting the orchard owner	1.901	0.827	1	Somewhat Satisfied
Overall Mean		1.469	0.548		Satisfied

Analysis of Table (5)

It is evident from Table (5) that the two items related to "Spending enough time to discuss problems when visiting the orchard owner" and "Interest in the ideas of orchard owners" ranked first and second, respectively, with mean scores of 1.901 and 1.855, both falling within the "Somewhat Satisfied" level. This may be attributed to the fact that advisory services are not always provided at appropriate times connected to agricultural practices. Advisors recognize that orchard owners have traditional agricultural experiences they believe are best for their orchards, and they may lack complete knowledge of modern techniques that could enhance their date palm cultivation.

The items regarding "They welcome you and listen when you meet them" and "Respect for the orchard owner" ranked third and fourth, receiving mean scores of 1.092 and 1.026, respectively, both indicating "Satisfied." This could be due to the performance level of agricultural advisors, who demonstrate good interactions with orchard owners, showing respect and listening to their concerns, which reflects positively on the satisfaction with the advisory services received.

5) Satisfaction with Advisory Follow-Up

The items related to "satisfaction with advisory follow-up," consisting of 3 items, received mean scores ranging from 1.907 to 1.921, with standard deviations ranging from 0.824 to 0.842, as shown in Table (6).

Table (6): Distribution of Respondents According to Satisfaction with Advisory Follow-Up.

Item Number	Item Description	Mean Score	Standard Deviation	Rank	Satisfaction Level
1	Following up with orchard owners to address problems when applying relevant scientific recommendations	1.907	0.824	3	Somewhat Satisfied
2	Continuous follow-up with orchard owners to provide necessary knowledge and skills for developing date palm cultivation	1.921	0.842	1.5	Somewhat Satisfied
3	Training orchard owners	1.921	0.842	1.5	Somewhat Satisfied
Overall Mean		1.916	0.836		Somewhat Satisfied



Analysis of Table (6)

From Table (6), it is clear that the two items related to "Continuous follow-up with orchard owners to provide necessary knowledge and skills for developing date palm cultivation" and "Training orchard owners" ranked first with a mean score of 1.921, indicating "Somewhat Satisfied." The item regarding "Following up with orchard owners to address problems when applying relevant scientific recommendations" ranked third with a mean score of 1.907, also within the "Somewhat Satisfied" level.

All items in this area fall under the "Somewhat Satisfied" level, with an overall mean score of 1.916 and a standard deviation of 0.836. This may be attributed to the weaknesses in follow-up and interaction between agricultural advisors and orchard owners, as well as a lack of support in addressing the challenges faced when implementing scientific recommendations. The insufficient training for orchard owners could negatively impact their perception of the advisory services provided.

Axis 2: Determining the Level of Satisfaction of Date Palm Orchard Owners with Preventive Services

The research results showed that the highest percentage was (45%) for those somewhat satisfied with the preventive services, with a mean score of (2.005) and a standard deviation of (0.518). Additionally, (34%) of respondents fell within the satisfied level, with a mean score of (1.502) and a standard deviation of (0.421). The lowest percentage was (21%), which was classified as dissatisfied, with a mean score of (2.663) and a standard deviation of (0.603), as shown in Table (7).

Table (7): Distribution of Respondents According to Satisfaction with Preventive Services Provided.

Satisfaction Level	Satisfaction Degree	Frequency	Percentage %	Mean Score	Standard Deviation
Satisfied	1 – 1.667	51	34	1.502	0.421
Somewhat Satisfied	1.668 – 2.334	69	45	2.005	0.518
Dissatisfied	2.335 – 3	32	21	2.663	0.603
Total		152	100	2.056	0.514

Analysis of Table (7)

It is evident from Table (7) that the level of satisfaction among respondents regarding preventive services was "somewhat satisfied." This may be attributed to the fact that these services are not provided according to the needs and problems of orchard owners and at the appropriate time, along with a lack of provision of necessary tools and pesticides to combat pests and diseases affecting the orchards, as well as poor communication from agricultural protection employees for awareness or training of farmers on the types of fertilizers and pesticides that address pests affecting date palms.

1) Satisfaction with Rapid Response in Providing Preventive Services

The items related to the area of "satisfaction with rapid response in providing preventive services," comprising (3) items, received mean scores ranging from (1.875 - 1.822), with standard deviations ranging from (0.811 – 0.840), as shown in Table (8).

**Table (8):** Distribution of Respondents According to Satisfaction with Rapid Response in Providing Preventive Services.

Items	Mean Score	Standard Deviation	Rank	Satisfaction Level
Satisfaction with the methods used by employees to achieve the goals of orchard owners	1.848	0.811	2	Somewhat Satisfied
Satisfaction with the prompt response to questions posed by orchard owners regarding issues they face while managing their orchards	1.822	0.822	3	Somewhat Satisfied
Direct contact with orchard owners	1.875	0.840	1	Somewhat Satisfied
Overall Mean for the Area	1.848	0.824		Somewhat Satisfied

Analysis of Table (8)

From Table (8), it is clear that the item "Direct contact with orchard owners" ranked first with a mean score of (1.875) and a standard deviation of (0.840). The second item, "Satisfaction with the methods used by employees to achieve the goals of orchard owners," followed with a mean score of (1.848) and a standard deviation of (0.811), also falling within the "somewhat satisfied" level. The third item, "Satisfaction with the prompt response to questions posed by orchard owners regarding issues they face while managing their orchards," ranked third with a mean score of (1.822) and a standard deviation of (0.822). All items related to this area were within the "somewhat satisfied" level, with an overall mean score of (1.848) and a standard deviation of (0.824). This could be attributed to delays in responses from protection workers and a lack of communication with orchard owners.

2) Satisfaction with the Subject of Preventive Services

The items related to the area of "satisfaction with the subject of preventive services," consisting of (2) items, received mean scores ranging from (1.822 - 1.842) with standard deviations ranging from (0.814 – 0.834), as shown in Table (9).

Table (9): Distribution of Respondents According to Satisfaction with the Subject of Preventive Services.

Items	Mean Score	Standard Deviation	Rank	Satisfaction Level
Satisfaction with preventive services that meet the needs of orchard owners	1.842	0.834	1	Somewhat Satisfied
Satisfaction with the handling of issues faced by orchard owners in a timely manner	1.822	0.814	2	Somewhat Satisfied
Overall Mean for the Area	1.832	0.824		Somewhat Satisfied

Analysis of Table (9)

From Table (9), it is evident that the item "Satisfaction with preventive services that meet the needs of orchard owners" ranked first with a mean score of (1.842) and a standard deviation of (0.834), placed within the "somewhat satisfied" level. The second item, "Satisfaction with the handling of issues faced by orchard owners in a timely manner,"



followed with a mean score of (1.822) and a standard deviation of (0.814), also classified as "somewhat satisfied." This could be attributed to the fact that the topics of service and how they address the farmers' problems were not timely, impacting farmers' satisfaction with the services provided.

3) Satisfaction with the Timing of Preventive Services

The items related to the area of "satisfaction with the timing of preventive services," comprising (3) items, received mean scores ranging from (1.868 - 1.940) with standard deviations ranging from (0.831 – 0.848), as shown in Table (10).

Table (10): Distribution of Respondents According to Satisfaction with the Timing of Preventive Services.

Items	Mean Score	Standard Deviation	Rank	Satisfaction Level
Satisfaction with the distribution of organic and chemical fertilizers to orchard owners in a timely manner	1.940	0.831	1	Somewhat Satisfied
Satisfaction with the timely distribution of pesticides for pest control	1.875	0.848	2	Somewhat Satisfied
Satisfaction with the method of providing preventive services to orchard owners when needed and in case of problems	1.868	0.835	3	Somewhat Satisfied
Overall Mean for the Area	1.894	0.838		Somewhat Satisfied

Analysis of Table (10)

From Table (10), it is evident that the item "Satisfaction with the distribution of organic and chemical fertilizers to orchard owners in a timely manner" ranked first with a mean score of (1.940) and a standard deviation of (0.831). The second item, "Satisfaction with the timely distribution of pesticides for pest control," followed with a mean score of (1.875) and a standard deviation of (0.848). The third item, "Satisfaction with the method of providing preventive services to orchard owners when needed and in case of problems," ranked third with a mean score of (1.868) and a standard deviation of (0.835). All items in this area were classified as "somewhat satisfied" with an overall mean score of (1.894) and a standard deviation of (0.838). This may be attributed to the failure to provide preventive services, such as distributing fertilizers and pesticides on time, or in case of problems, which negatively impacts the usefulness and effectiveness of these services on orchard owners' satisfaction.

4) Satisfaction with the Benefits of Preventive Services Provided

The items related to the area of "satisfaction with the benefits of preventive services provided," consisting of (3) items, received mean scores ranging from (1.861 - 1.875) with standard deviations ranging from (0.794 – 0.830), as shown in Table (11).

**Table (11):** Distribution of Respondents According to Satisfaction with the Benefits of Preventive Services Provided.

Items	Mean Score	Standard Deviation	Rank	Satisfaction Level
Satisfaction with being provided with appropriate amounts of pesticides for timely use	1.875	0.799	1	Somewhat Satisfied
Satisfaction with the benefits of pest and disease control campaigns for date palm orchards	1.868	0.794	2	Somewhat Satisfied
Satisfaction with the availability of light traps for pest control in date palm orchards	1.861	0.830	3	Somewhat Satisfied
Overall Mean for the Area	1.868	0.807		Somewhat Satisfied

Analysis of Table (11)

From Table (11), it is evident that the item "Satisfaction with being provided with appropriate amounts of pesticides for timely use" ranked first with a mean score of (1.875) and a standard deviation of (0.799). The second item, "Satisfaction with the benefits of pest and disease control campaigns for date palm orchards," followed with a mean score of (1.868) and a standard deviation of (0.794). The third item, "Satisfaction with the availability of light traps for pest control in date palm orchards," ranked third with a mean score of (1.861) and a standard deviation of (0.830). All items related to this area were classified as "somewhat satisfied" with an overall mean score of (1.868) and a standard deviation of (0.807). This could be attributed to the fact that those providing preventive services do not supply orchard owners with appropriate amounts of pesticides and light traps, and there are insufficient campaigns for pest and disease control in date palm orchards.

5) Satisfaction with the Employees Providing Preventive Services

The sections related to the area of "satisfaction with the employees providing preventive services," which numbered (4) sections, received average scores ranging from (1.822 to 1.921), with standard deviations ranging from (0.826 to 0.814), as shown in Table (12).

**Table (12):** Distribution of Respondents According to Satisfaction with the Employees Providing Preventive Services.

No	Sections	Average Score	Standard Deviation	Rank	Satisfaction Level
1	Satisfaction with the development of knowledge and information for date palm orchard owners regarding scientific recommendations in fertilizers and pest control for crop service.	1.828	0.820	3	Somewhat Satisfied
2	Satisfaction with the training courses offered in identifying types of pesticides and fertilizers that treat pests affecting date palms.	1.921	0.826	1	Somewhat Satisfied
3	Satisfaction with the communication of employees working in prevention with date palm orchard owners.	1.822	0.814	4	Somewhat Satisfied
4	Satisfaction with the awareness efforts of employees working in crop protection regarding insect pests and diseases affecting date palms.	1.835	0.817	2	Somewhat Satisfied
	Average Score for the Area	1.852	0.819		Somewhat Satisfied

It is clear from Table (12) that the section "satisfaction with the training courses held in identifying types of pesticides and fertilizers that treat pests affecting date palms" ranked first with an average score of (1.921) and a standard deviation of (0.826). The second rank was for the section "satisfaction with the awareness efforts of employees working in crop protection regarding insect pests and diseases affecting date palms," with an average score of (1.835) and a standard deviation of (0.817). The section "satisfaction with the development of knowledge and information for date palm orchard owners regarding scientific recommendations in fertilizers and pest control for crop service" ranked third with an average score of (1.828) and a standard deviation of (0.820). The section "satisfaction with the communication of employees working in prevention with date palm orchard owners" ranked fourth with an average score of (1.822) and a standard deviation of (0.814).

All sections related to this area fell within a "somewhat satisfied" level with an average score of (1.852) and a standard deviation of (0.819). This could be attributed to the fact that the employees providing preventive services were not in continuous communication with date palm orchard owners to educate them about the damages caused by insect pests and diseases affecting date palms, as well as the lack of training courses to develop the knowledge and information of farmers regarding types of pesticides and fertilizers that affect the productivity of date palms.

Axis Three/ Determining the Level of Satisfaction of Date Palm Orchard Owners with Equipment Services

The research results indicated that the highest percentage is (47%) within the "Somewhat Satisfied" category, with an average score of (2.105) and a standard deviation of (0.473). The percentage of (34%) of respondents falls within the "Satisfied" level, with an average score of (1.527) and a standard deviation of (0.388). The lowest percentage is (19%) categorized as "Dissatisfied," with an average score of (2.703) and a standard deviation of (0.594), as shown in the table (13).

**Table (13):** Distribution of Respondents According to Satisfaction Level with the Provided Preparatory Services.

Satisfaction Level	Rating Range	Frequency	Percentage	Average Score	Standard Deviation
Satisfied	1 – 1.667	52	34	1.527	0.388
Somewhat Satisfied	1.668 – 2.334	71	47	2.105	0.473
Not Satisfied	2.335 – 3	29	19	2.703	0.594
Total		152	100	2.111	0.485

From Table (13), it is evident that the level of satisfaction of respondents regarding the preparatory services was "somewhat satisfied." This could be attributed to the fact that these services are not provided in a timely manner and in appropriate quantities, along with the lack of support to provide the necessary materials to develop date palm orchards, represented by fertilizers and light traps, which affects the increase in production and productivity.

1) Satisfaction with the Provided Supplies

The sections related to the area of "satisfaction with the provided supplies," which numbered (3) sections, received average scores ranging from (1.907 to 2.197), with standard deviations ranging from (0.641 to 0.853), as shown in Table (14).

Table (14): Distribution of Respondents According to Satisfaction with the Provided Supplies.

No	Sections	Average Score	Standard Deviation	Rank	Satisfaction Level
1	Satisfaction with the quantity of pesticides provided for pest control of date palms.	1.907	0.808	3	Somewhat Satisfied
2	Satisfaction with the quantity of organic and chemical fertilizers provided for combating pests and diseases affecting date palms.	1.973	0.853	2	Somewhat Satisfied
3	Satisfaction with the quality of materials provided to develop date palm orchards.	2.197	0.641	1	Somewhat Satisfied
	Average Score for the Area	2.026	0.767		Somewhat Satisfied

It is clear from Table (14) that the section "satisfaction with the quality of materials provided to develop date palm orchards" ranked first with an average score of (2.197) and a standard deviation of (0.641). The section "satisfaction with the quantity of organic and chemical fertilizers provided for combating pests and diseases affecting date palms" ranked second with an average score of (1.973) and a standard deviation of (0.853). The section "satisfaction with the quantity of pesticides provided for pest control of date palms" ranked third with an average score of (1.907) and a standard deviation of (0.808). All sections related to this area were within a "somewhat satisfied" level, with an average score of (2.026) and a standard deviation of (0.767). This could be attributed to the fact that the quantity of materials provided in terms of pesticides and fertilizers did not adequately cover the cultivated areas to combat pests affecting date palms, in addition to the lack of provision of good quality materials supplied to them for developing date palm orchards.



2) Satisfaction with the Timing of Providing Preparatory Services

The sections related to the area of "satisfaction with the timing of service provision," which numbered (3) sections, received average scores ranging from (2.138 to 2.177), with standard deviations ranging from (0.620 to 0.675), as shown in Table (15).

Table (15): Distribution of Respondents According to Satisfaction with the Timing of Providing Preparatory Services.

No	Sections	Average Score	Standard Deviation	Rank	Satisfaction Level
1	Satisfaction with the provision of service upon request.	2.177	0.620	1	Somewhat Satisfied
2	Satisfaction with timely preparations.	2.138	0.641	3	Somewhat Satisfied
3	Satisfaction with the continuity and sustainability of obtaining the required fertilizers and pesticides.	2.164	0.675	2	Somewhat Satisfied
	Average Score for the Area	2.159	0.645		Somewhat Satisfied

It is clear from Table (15) that the section "satisfaction with the provision of service upon request" ranked first with an average score of (2.177) and a standard deviation of (0.620). The section "satisfaction with the continuity and sustainability of obtaining the required fertilizers and pesticides" ranked second with an average score of (2.164) and a standard deviation of (0.675). The section "satisfaction with timely preparations" ranked third with an average score of (2.138) and a standard deviation of (0.641).

All sections related to this area were within a "somewhat satisfied" level with an average score of (2.159) and a standard deviation of (0.643). This could be attributed to the fact that the preparation process does not occur when needed and upon request and at the specified time, in addition to the fact that the preparation is not continuous, which may affect pest control or fertilization at the appropriate time.

3) Satisfaction with the Method of Providing Preparatory Services

The sections related to the area of "satisfaction with the method of providing service for preparation," which numbered (3) sections, received average scores ranging from (1.861 to 2.157), with standard deviations ranging from (0.400 to 0.806), as shown in Table (16).

Table (16): Distribution of Respondents According to Satisfaction with the Method of Providing Preparatory Services.

No	Sections	Average Score	Standard Deviation	Rank	Satisfaction Level
1	Satisfaction with the methods used to equip date palm orchard owners with necessary materials and develop them.	2.157	0.620	1	Somewhat Satisfied
2	Satisfaction with equipping orchard owners with light traps for pest control.	1.927	0.400	2	Somewhat Satisfied
3	Use of simple procedures by employees involved in preparation to provide necessary supplies for developing date palm orchards.	1.861	0.806	3	Somewhat Satisfied
	Average Score for the Area	1.982	0.608		Somewhat Satisfied



It is clear from Table (16) that the section "satisfaction with the methods used to equip date palm orchards with necessary materials and develop them" ranked first with an average score of (2.157) and a standard deviation of (0.620). The section "satisfaction with equipping orchard owners with light traps for pest control" ranked second with an average score of (1.927) and a standard deviation of (0.400). The section "use of simple procedures by employees involved in preparation to provide necessary supplies for developing date palm orchards" ranked third with an average score of (1.861) and a standard deviation of (0.806). All sections related to this area were within a "somewhat satisfied" level with an average score of (1.982) and a standard deviation of (0.608). This may be attributed to the fact that facilitating the procedures for providing the necessary materials and supplies to develop date palm orchards positively reflects on farmers and achieves their satisfaction with those involved in the preparation process.

4) Satisfaction with Government Support for Supplied Materials

The items related to the area of "satisfaction with government support for supplied materials," which consisted of (3) items, received average scores ranging from (2.243 to 2.184) with standard deviations ranging between (0.630 to 0.655), as shown in Table (17).

Table (17): Distribution of Respondents According to Level of Satisfaction with Government Support for Supplied Materials.

No	Items	Average Score	Standard Deviation	Rank	Satisfaction Level
1	Government support for providing necessary materials for developing date palm orchards.	2.243	0.630	1	Somewhat Satisfied
2	Continuous follow-up for supplying necessary materials for date palm orchards by relevant authorities.	2.190	0.638	2	Somewhat Satisfied
3	Support for the supplied quantities.	2.184	0.655	3	Somewhat Satisfied
	Average Score for the Area	2.206	0.641		Somewhat Satisfied

It is clear from Table (17) that the item "government support for providing necessary materials for developing date palm orchards" ranked first with an average score of (2.243) and a standard deviation of (0.630). The item "continuous follow-up for supplying necessary materials for date palm orchards by relevant authorities" came in second with an average score of (2.190) and a standard deviation of (0.638). The item "support for the supplied quantities" ranked third with an average score of (2.184) and a standard deviation of (0.655).

All items related to this area fell within a "somewhat satisfied" level with an average score of (2.206) and a standard deviation of (0.641). This may be attributed to the limited government support for providing necessary materials and support for supplied quantities, along with inadequate continuous follow-up, which directly affects the reactions of orchard owners and their satisfaction with the services provided to them.

5) Satisfaction with Employees Providing Supplied Services

The items related to the area of "satisfaction with the employees working in the service," totaling (4) items, received average scores ranging from (1.381 to 2.105) with standard deviations ranging from (0.526 to 0.881), as shown in Table (18).

**Table (18):** Distribution of Respondents According to Level of Satisfaction with Employees Providing Service.

No	Items	Average Score	Standard Deviation	Rank	Satisfaction Level
1	Cooperation of agricultural extension workers and pest control in providing advisory services to date palm orchard owners.	1.907	0.800	2	Somewhat Satisfied
2	Involvement of relevant parties (extension, pest control, supplies) in making necessary decisions.	2.105	0.632	1	Somewhat Satisfied
3	Employees' commitment to assist orchard owners and good interaction during supplies.	1.381	0.526	4	Somewhat Satisfied
4	Giving them enough time and listening to them.	1.631	0.881	3	Somewhat Satisfied
	Average Score for the Area / Standard Deviation for the Area	1.756	0.709		Somewhat Satisfied

From Table (18), it is evident that the item "involvement of relevant parties (extension, pest control, supplies) in making necessary decisions" ranked first with an average score of (2.105) and a standard deviation of (0.632). The item "cooperation of agricultural extension workers and pest control in providing advisory services to date palm orchard owners" came in second with an average score of (1.907) and a standard deviation of (0.800). The item "giving them enough time and listening to them" ranked third with an average score of (1.631) and a standard deviation of (0.881). The item "employees' commitment to assist orchard owners and good interaction during supplies" came in fourth with an average score of (1.381) and a standard deviation of (0.526).

All items related to this area were within a "somewhat satisfied" level with an average score of (1.756) and a standard deviation of (0.709). This may be attributed to the fact that employees providing supplies are not fully cooperative and do not have sufficient time to understand the essential supplies needed by date palm orchard owners, leading to a lack of complete satisfaction with these services.

CONCLUSIONS AND RECOMMENDATIONS

In light of the research results, it can be concluded,

- 1- The satisfaction is crucial for the integration of advisory, preventive, and supply services provided to date palm orchard owners in the Al-Suwayra district.
- 2- The provision of services that do not meet the needs of farmers and do not address their real problems, along with weak activities, are significant factors contributing to their low level of satisfaction with the advisory, preventive, and supply services offered to them.

Therefore, the researcher recommends,

- 1- The establishment of a comprehensive technical committee composed of a group of specialists in date palm services (advisory, preventive, and agricultural supplies). This committee should oversee the operations related to the cultivation of new orchards, the maintenance of existing orchards, and the harvesting, marketing, and processing of crops to ensure the satisfaction of orchard owners.
- 2- Additionally, it is essential to focus on raising awareness and educating date palm orchard owners through the development of specialized training and advisory programs. This



responsibility should fall under the Ministry of Agriculture (including the General Authority for Plant Protection, the General Authority for Agricultural Extension and Cooperation, the General Authority for Date Palm, and the General Company for Agricultural Supplies), in coordination with agricultural colleges.

- 3- Improving advisory, preventive, and supply services for date palm orchard owners is necessary to achieve their satisfaction and enhance their productivity.

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