Problems of date production in Hilla District / Babylon province

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Abstract

The research aims to identify the most important production problems of dates facing date palm growers in Hilla District / Babylon province . The production problems of dates facing palm farmers have been limited.Then he dealt with the analytical method used in the analysis of statistical data and statistical methods in analyzing the opinions of farmers that were collected through the use of a questionnaire form that included questions about the opinions of farmers about the most important problems they face with the order of problems. The results showed that the most influential production problems are the problems of palm varieties, where it ranked first with a weighted average of (3.597), and the problems related to the agricultural extension role came last with a weighted average of (2.834).Based on the results of analyzing the most important production problems of dates, it is necessary to emphasize the importance of dates as a staple food and a strategic source of food security, and to provide fertilizers, pesticides, and improved varieties, especially commercial ones and the government's interest in combating palm pests and insects that infect the governorate's orchards, and conducting air campaigns in all areas of the governorate on an ongoing basis and work on the introduction of mechanization in the palm service operations, and the emphasis on centers for receiving dates in the production areas, and activating the role of agricultural extension in the field of palm groves to become more effective.

Keywords: Dates production, dates production problems, Iraq.

Introduction and research problem

Interest in the agricultural sector is the starting point for economic development and other sectors in order to break the deadlock in which most developing countries find themselves[7]. The date palm is considered one of the perennial and evergreen trees, and it is grown for the purpose of obtaining fruits (dates) in most countries of the world. It is also cultivated as an ornamental tree in public gardens and homes [4] .It is involved in many food industries and the alcohol industry. It is also a source of energy in desert areas, in addition to its involvement in traditional industries such as furniture and ropes .Palm trees are used to provide shade in the courtyards and roads to protect them from the intense heat of the sun [9] . The palm tree also plays an important role in combating desertification and as a means of land reclamation in all countries[5]. Dates have a high nutritional value, as it is considered a desert fruit and one of the main foods for most of the world's population, especially the Arab peoples, as dates contain (75-80%) sugars, and (2.5%) fiber, and less than (2%) fats and 2 % of protein,It also contains amounts of (vitamin B1, vitamin B2, and vitamin A) and nicotinic acid [2]. The US Food and Drug Administration has approved dates as a healthy food, especially for children's schools in America [3]. Babylon province is one of the Iraqi provinces that was characterized by the production of dates and the best cultivars, where it dominated the local production in Iraq and came first in terms of production in 2023. Its production reached (104998) tons, with a rate of (15.5%)While it ranked third in terms of the number of trees in it, with a rate

of (11.5%) [6] however, the date palm in Babylon province currently suffer from many problems that contributed to the decline in the number of palm trees. Given the importance of identifying these production problems, this study came as an attempt to answer the following question:

What are the problems of date crop production in Hilla District / Babylon province?

Research importance:

The importance of the research comes from the importance of palm trees being one of the important agricultural sectors and what palm trees represent as a national wealth that contributes to supporting the national economy as well as representing a symbol and a historical identity for Iraq.

*Research aims:

1- Identifying the most important of production problems in each axis of the production problems of dates in Hilla district / Babylon province.

2- Descending order of the axes of date production problems in Hilla District / Babylon province.

Research methods:

*Research methodology: The descriptive approach was used to reach the objectives of the research, as this approach is compatible with the nature of the study, which includes identifying the problems of date production in the district of Hilla / Babylon province [1]

*Research area: Hilla district / Babylon province, which includes the center of Hilla, Abi Gharq district, and Al-Kifl district, was chosen as a region to conduct the study.

*The research community and its sample:

The research community included all the owners of palm groves in the district of Hilla, whose number is (2952) farmers.They are distributed in three regions: (Al-Kifl sub-district (1549 farmers), Abi Ghark sub-district (774 farmers), and Hilla center (629 farmers), (according to the statistics of the Directorate of Agriculture of Babylon for the year 2021). A random proportional sample of (10%) was drawn. (295) respondents.

Research tool:

The questionnaire was prepared in its initial form and in accordance with the objectives of the study, by informing the researcher of the literature and previous studies related to the subject of the study.Conducting personal interviews with specialists in the field of horticulture and economics, as well as obtaining the opinions of specialists in agricultural extension. The questionnaire consisted of several parts:

Part One: This part includes data related to the personal characteristics of the owners of palm groves, namely:

(Age, level of education, contribution of the crop to the annual income, agricultural experience, participation in agricultural and marketing training activities in the field of date palms and dates, type of possession of orchard land, exposure to information sources)
The second part included (52) problems distributed over (8) axes in the field of date production, which are climate: 7 problems), (soil and water: 4 problems), (fertilization: 6 problems), (pests and their control: 10 problems) (agricultural mechanization: 5 problems) (prices and production costs: 10 problems) (cultivated palm cultivars: 3 problems((the role of agricultural extension in production and marketing: 7 problems), which was obtained through the researcher's review of the literature and previous studies related to the subject of the study and conducting personal interviews with specialists in the field of horticulture and in the field of economics, as well as obtaining the opinions of specialists in agricultural extension, and through a personal interview with the owners of palm groves, After completing the arrangement of the problems,

five alternatives were put to answer in front of each problem representing the degree of its impact, which are (very big, big, medium, few, no problem) and the following numerical values (4,3,2,1,0) were determined for them, respectively. For the purpose of verifying the validity of the questionnaire and its ability to measure the subject of the research, an exploratory sample of (30) respondents was selected from the owners of orchards in the district of Hilla / Babylon province from outside the study sample.The data of the survey sample was collected for the period from (1-5/8/2022), in order to ensure the clarity of the questionnaire paragraphs and their understanding by the respondents, and to find the coefficient of stability and validity of the test paragraphs, and to ensure that there is information among the owners of the orchards in the fields and themes included in the study. The stability coefficient was measured using the split-half method, by dividing the paragraphs into odd and even pairs, and finding the correlation between them according to (Pearson's) equation. Its value was (0.80), which represents stability for half of the test, and to find the stability coefficient for the entire test, the correction equation (Spearman-Brown) was used, and its value was (0.89), and to obtain the test validity coefficient, the test coefficient was rooted and its result was (0.94) and the stability coefficient is acceptable if its value reaches (0.70) or more, and it is more acceptable if it approaches the correct one[8] and after applying the conditions of stability and validity to the test paragraph, the questionnaire form is ready for data collection.

* Data collection:

The research data was collected by answering the questionnaire paragraphs by means of a personal interview with the owners of palm groves, and the data collection process took place for the period from (10/8/2022 - 10/10/2022), and after completing the data collection, unloading and tabulating it, it was analyzed Using the SPSS statistical analysis program for social sciences.

Results and discussion:

The results were discussed according to the research objectives and through the following:

Identifying the most important paragraphs of production problems in each of the axes of the field of production problems of dates in the district of Hilla / Babylon province.

Through the results, it was found that the production axes were as follows:

The first axis: climate problems

The results showed that the weighted average of the climate problems paragraph ranged between (3.207-3.610), and the paragraph (dust-laden winds affect the appearance of dust spiders) came with the highest weighted average of (3.610).This may be due to the effect of dust-laden winds that lead to the emergence of insects, especially dust spiders, which results in significant negative effects on their dates, Panama, and the paragraph (strong winds affect the pollination of palm trees) came with the lowest weighted average of (3.207).The reason for this may be that strong winds may sometimes lead to the pollen being blown away and thus a decrease in the number of pollinated trees, and at other times it may cause an increase in pollination. Therefore, palm farmers have become aware that the wind has a limited effect on the production of their dates, so this paragraph came last. As shown in Table (1).

Table (1): Descending order of the climate problems paragraph according to the weighted average for each paragraph.

weighted average	Nothing	few	Medium	big	Very big	paragraphs	arrangement
3.610	0	1	16	80	198	Dusty winds affect the appearance of the dust spider.	1
3.464	0	0	24	110	161	Strong winds transport many insects from one orchard to another	2
3.406	0	1	54	64	176	Severe storms affect the fall of tall and weak palm trees.	3
3.369	0	0	41	104	150	Strong winds affect the falling of fruits before and after ripening.	4
3.335	0	1	44	105	145	Rainfall and its impact on the pollination process, disease incidence, and burning of female pollen.	5
3.322	0	4	44	100	147	The high temperature in the summer affects the dryness of dates and reduces their quality for some varieties of dates.	6
3.207	0	0	53	128	114	High winds affect the pollination of palm trees.	7

The second axis: soil problems and irrigation water

paragraph (difficulty in drainage and waterlogged lands prevent the roots from growing well) came with the lowest weighted average of (2.877).The reason for this is due to the fact that the height of the ground water affects the growth of roots and thus has an effect on the growth of palm trees and the quality of dates, as shown in Table (2).

The results showed that the weighted average for the paragraph of soil problems and irrigation water ranged between (3.359-2.877), and the paragraph (high salinity water affects date production) came with the highest weighted average of (3.359). The reason for this is due to the dwarfing of the roots and their effect on high salinity, and thus this affects the production of dates, while the

Table (2): Descending order of the paragraph of soil and water problems according to the weighted average for each paragraph.

weighted average	Not hing	few	Medium	Big	Very big	Paragraphs	arrang ement
3.359	0	0	44	101	150	Water with high salinity affects the production of dates.	1
3.071	0	6	52	152	85	The lack of water in sufficient quantities affects the lack of date palm production.	2
2.966	0	4	71	151	69	The high costs of extracting water increase the costs of palm production from dates.	3
2.877	0	4	80	159	52	Difficulty in drainage and swampy soils that prevent the roots from growing well.	4

The third axis: fertilization problems

The results showed that the weighted average of the paragraph of fertilization problems ranged between (3.722-2.844), and the paragraph (lack of fertilizer share (NBK) for the date crop by the state) came with the highest weighted average of (3.722).The reason for this may be due to the insufficient quota distributed by the state for fertilizing palm trees, because most farmers cannot buy fertilizers from the local markets due to their high prices. While the paragraph (double knowledge of date palm growers of determining the appropriate quantities for palm fertilization) came with the lowest weighted average of (2.844)paragraph. The reason for this is due to the farmers' lack of knowledge of the importance of determining the appropriate quantities, as shown in Table (3)

The fourth axis: pest problems and their control

The results showed that the weighted average for the paragraph of pest problems and their control ranged between (2.111-3.769), and the paragraph (lack of government support represented by the Ministry of Agriculture on the side of pesticides) came with the highest weighted average of (3.769).The reason for this may be the state's lack of great interest in providing pesticides to combat insects and diseases, and the inability of farmers to purchase these pesticides from the local markets due to their high prices. While the paragraph (palm trees infested with many bushes, including halva, tartee, and thorns) came with the lowest weighted average of (2.111). Table (4).

Table (3)Descending arrangement of the paragraphs of fertilization problems according to the weighted average for each paragraph.

weighted average	Not hing	few	Medium	Big	Very big	paragraphs	arrang ement
3.722	0	0	8	66	221	Lack of fertilizer share (NBk) for the date crop by the state.	1
3.054	0	0	54	171	70	Weakness of date palm growers' interest in using microelements in crop fertilization.	2
3.050	0	2	69	136	88	Lack of benefit from spreading fertilizers on the surface of the soil to fertilize palm trees.	3
2.952	0	6	48	195	46	Weak commitment of date palm farmers to the appropriate dates for palm fertilization.	4
2.925	0	1	61	192	41	Lack of awareness of date palm farmers of the importance of using organic fertilizers.	5
2.844	0	6	83	157	49	Weak knowledge of date palm growers of determining the appropriate amounts of palm fertilization.	6

The fifth axis: (problems of agricultural mechanization)

The results showed that the weighted average of the paragraph of agricultural mechanization problems ranged between (3.074-3.291), and the paragraph (the farmers' use of primitive machines in palm tree pruning) came with the highest weighted average of (3.291), and the reason for this is due to the farmers' lack of knowledge of using modern machines.While the paragraph (lack of control machines used in manual control of palm trees) came with the lowest weighted average of (3.074).The reason for this is the lack of government support for such machines or the high prices in the local markets, as shown in Table (5).

Table (4): Descending order of the paragraph of pest problems and their control, according to the weighted average for each paragraph.

weighted average	Not hing	few	Medium	big	Ver y big	paragraphs	arrang ement
3.769	0	0	10	48	237	Lack of government support represented by the Ministry of Agriculture in terms of pesticides.	1
3.755	0	0	14	44	237	Date palms are infested with many insects such as Dubas insect, Hamira, dust spider, palm stem borer, and palm pollen disease.	2
3.677	0	0	17	61	217	Lack of air control campaigns implemented by government agencies to combat palm pests.	3
3.559	0	0	16	98	181	Lack of integrated control of insects, diseases and weeds	4
3.335	0	0	21	154	120	Neglecting most palm farmers to combat tall palm trees.	5
2.952	0	2	67	169	57	Lack of interest of palm farmers in the recommended quantities of pesticides.	6
2.837	0	0	83	177	35	Palm growers suffer from the weak efficacy of pesticides in the local markets.	7
2.806	0	4	96	148	47	Lack of trusted offices to sell pesticides to combat palm trees.	8
2.745	0	8	107	132	48	The lack or non-existence of most palm growers in preventive spraying before the date palms are infected with insects and weeds.	9
2.111	0	104	88	69	34	The spread of many bushes, including selvage, tartee, and thorns, around palm trees.	10

Table (5): Descending order of the paragraph of agricultural mechanization problems according to the weighted average for each paragraph.

weighted average	Nothing	few	Medium	Big	Very big	paragraphs	arrangement
3.291	0	0	27	155	113	Farmers use primitive machines to plant palm trees.	1
3.223	0	6	36	139	114	Not using agricultural machinery in the harvesting process.	2
3.196	0	0	52	133	110	Lack of availability of machines for pollination of palm trees.	3
3.115	0	0	51	159	85	Lack of small tillage machines that can enter the dense palm groves.	4
3.074	0	2	51	165	77	Lack of control machines used in manual control of palm trees.	5

The sixth axis: (price problems and production costs)

The results showed that the weighted average for the paragraph of price problems and price costs ranged between (2.796-3.623), and the paragraph (importing dates from producing countries) came with the highest weighted average of (3.623).The reason for this is due to the fact that either the prices of imported dates are low compared to local dates, or the quality of imported dates is more than the quality of local dates, while the paragraph (high labor wages) came with the lowest weighted average of (2.796).The reason for this may be due to the lack of manpower or its lack of availability in a timely manner, which made many farmers do a lot of work related to palm cultivation with their own hands, so it came last. As shown in Table (6).

The seventh axis: the problems of cultivated palm cultivars

The results showed that the weighted average of the paragraphs of the problems of cultivated palm cultivars ranged between (3.542-3.654), and the paragraph (weak awareness of farmers of the importance of cultivating commercial cultivars) came with the highest weighted average of (3.654). The reason for this is due to the farmers' lack of knowledge of the importance of commercial cultivars and the economic return of these cultivars, while the paragraph (double knowledge of date palm farmers by choosing good cultivars of stallions) came with the lowest weighted average of (3.542). The reason is due to the farmers' lack of knowledge of those good cultivars of stallions and their importance in increasing production As shown in Table (7).

Table (6): Descending order of the paragraph of price problems and production costs according to the weighted average for each paragraph.

weighted average	Nothing	few	Medium	Big	Very big	paragraphs	arrangement
3.623	0	2	23	59	211	Importing dates from producing countries.	1
3.372	0	1	38	106	150	High prices of chemical fertilizers and organic fertilizers that are used to fertilize dates.	2
3.220	0	0	41	148	106	Low prices of dates.	3
3.162	0	0	47	153	95	High rent of refrigerated warehouses that maintain the quality of dates.	4
3.044	0	2	47	182	64	The high costs of palm tree control operations.	5
2.972	0	2	63	171	59	High prices of pesticides used to control palm trees.	6
2.972	0	0	58	187	50	High wages for hours of plowing in the orchards, which can use machines to plow their lands.	7
2.888	0	2	89	144	60	Palm growers' reluctance to plant and propagate palm trees.	8
2.881	0	3	84	153	55	High fuel prices for irrigation.	9
2.796	0	3	91	164	37	High labor wages	10

Table (7): Descending order of the paragraphs of the problems of palm cultivars planted according to the weighted average for each paragraph.

weighted average	Nothing	few	Medium	Big	Very big	paragraphs	arrangement
3.654	0	0	8	86	201	Poor awareness of farmers of the importance of cultivating commercial varieties.	1
3.596	0	0	10	99	186	Expensive offshoots of profitable commercial varieties, such as Al-Barhi, Al-Maktoum, Al-Majhool, and others.	2
3.542	0	0	14	107	174	Weak knowledge of date palm growers in selecting good stallion varieties.	3

The eighth axis: (Problems related to the role of agricultural extension in palm trees and the production and marketing of dates)

The results showed that the weighted average of the paragraph of problems related to the role of agricultural extension in palm trees and the production and marketing of dates ranged between (2.522-3.359).The paragraph (weak role of agricultural extension in educating and directing farmers towards the desired commercial cultivars and selecting good stallions) came with the highest weighted average of (3.359).The reason for this is the weakness of the extension activities directed to the production of palm trees, while the paragraph (weak role of agricultural extension in establishing extension activities for palm trees) came with the lowest weighted average of (2.522).The reason for this result may be that date palm growers are accustomed to the absence or weakness of the extension activities directed to them, so they did not concern themselves with the nature of these activities, as shown in Table (8):

Descending order of paragraphs of problems related to the role of agricultural extension in palm trees and the production and marketing of dates according to Weighted average for each paragraph.

weighted average	Nothing	few	Medium	big	Very big	paragraphs	arrangement
3.359	0	2	58	67	168	The weak role of agricultural extension in educating and directing farmers towards the desired commercial varieties and selecting good stallions.	1
3.183	0	2	57	121	115	The weakness of the role of agricultural extension by providing a mechanism for transferring the results of scientific research and transferring them to farmers.	2
2.945	0	2	72	161	60	The weak role of agricultural extension in educating farmers about the appropriate environment, processes and services for palm cultivation and date marketing.	3
2.640	0	10	136	99	50	The weakness of the role of agricultural extension in providing expertise in the field of date harvesting, sorting, grading and packaging in	4

						the correct ways for farmers.	
2.267	0	7	144	96	48	Weakness of the role of agricultural extension in guiding farmers about making use of date palm residues such as fronds and stems.	5
2.566	0	14	129	123	29	The weak role of agricultural extension in guiding farmers in the field of storing dates in the right ways for farmers.	6
2.522	0	10	159	88	38	The weakness of the role of agricultural extension in the establishment of extension activities on palm trees.	7

2- Descending order of the axes of date production problems in Hilla District / Babylon province.

The results showed that in the field of production problems of dates, the axis (the problem of palm cultivars) came in the first place within the field with a weighted average of (3.597).The explanation for this may be that this problem is real and existing for farmers.

As for the last rank, the axis (problems related to the role of agricultural extension) came within the field with a weighted average of (2.834). The reason for this may be the farmers' lack of awareness of the role of agricultural extension in developing the production process of dates. The general weighted average for the field of marketing problems for dates is (3.175). As shown below:

Table (9): Descending order of the axes of date production problems in Hilla District / Babylon province.

arrangement in the field	Weighted average of the axes	Problem axes	Overall weighted average	Problem areas
1	3.597	Palm tree problems	**3.175**	Dates production problems
2	3.387	climate problems		
3	3.179	Agricultural mechanization problems		
4	3.154	Pest problems and their control		
5	3.093	Price problems and production costs		
6	3.091	Fertilization problems		
7	3.068	Soil and water problems		
8	2.834	Problems related to the role of agricultural extension		

Conclusions and recommendations:

Conclusions:

1- Through the results of the research, it was found that the axis of the problems of cultivated palm varieties came in the first place with a weighted average of (3.597), and that the paragraph (weak awareness of farmers of the importance of cultivating commercial varieties) came in the first place within this axis with a weighted average of (3.654), and accordingly it can be concluded There is a lack of knowledge that may be caused by the weak role of agricultural extension in clarifying the importance of cultivating commercial varieties.

2- The axis of problems related to agricultural extension came in the eighth rank with a weighted average of (2.834), and the paragraph (weak role of agricultural extension in educating and directing farmers towards the desired commercial varieties and selecting good stallions) came in the first rank within this axis with a weighted average (3.359).

We conclude from this the clearly weak role of agricultural extension in guiding farmers towards choosing profitable commercial varieties and electing good stallions in the pollination process, and thus farmers remain on traditional varieties with little economic return.

Recommendations:

1- Emphasizing the importance of dates as a staple food and a strategic source of food security and a renewable national wealth, along with other natural resources in the governorate.

2- The need to provide fertilizers, pesticides and improved varieties, especially commercial ones.

3- Government interest in combating palm pests and insects, and conducting air campaigns in all areas of the governorate on an ongoing basis.

4- Work to introduce mechanization in palm service operations.

5- Emphasis on receiving centers for dates in production areas.

6- Effectively activating the role of agricultural extension in the field of palm groves.

7- Government agencies should support the national product of dates and reduce imports of dates from outside the country.

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