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ANALYSIS OF SOCIO-ECONOMIC FACTORS AFFECTING THE CULTIVATION OF MELON CROPS: IN CASE OF ZAAMIN AND ZARBDOR DISTRICTS OF JIZZAKH REGION

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Abstract

Melon crops really are important crop in the agricultural system and food security of our country. However, in recent years there have been unresolved issues in the process of growing, storing and weeding melons. This article is devoted to the factors that affect the cultivation of melons in farmsites and dehqan farms located in Zaamin and Zarbdor districts of Jizzakh region. The problems and experiences of farmers in the region, the socio-economic characteristics were studied on the bases of monograph. The impact of socio-economic factors on production productivity was analyzed using a linear regression model. Research have shown that all farmers are male (100%), with the majority of them between the ages of 31 and 50 years. 50% of the respondents had secondary education, the other 50% had secondary special and higher education.

Key words: melon crops, melon, model, linear regression, respondent, coefficient of variable.

Introduction. V.Oedrian [1], B.Muhammed [2], H.Buriev, O.Ashurmatov [3], etc. a lot of research has been done by scientists. However, in our country, insufficient research has been conducted on the profitability, nutritional value of melon, the factors affecting sustainable cultivation. It is the largest melon crop in Central Asia. In Uzbekistan, the average per capita consumption of melons is 58.6 kilograms per year. Melon is a dietary product and is grown in all regions of the republic. Growing and exporting melons and gourds is a lucrative activity in world agriculture. In 2019, the global melon market revenue was \$ 27.4 billion, an increase of 2.2% over 2017. The global melon market grew by an average of 2.1% per year from 2007 to 2019. This means that melons are becoming one of the main consumer goods of the world's population. The highest per capita melon consumption in 2019 will be in Kazakhstan (50 kg per capita), Turkey (22 kg per capita), Iran (19 kg per capita) and Morocco (15 kg per capita). states. The average per capita consumption of melons in the world was 4.25 kg per person. In 2019, 1.2 million hectares of melons will be grown to provide the world's population with quality melons and increase economic interest in the industry. China, Turkey and Iran are world leaders in melon production. Despite the medical, socio-economic, cultural and agro-technical importance of melon, its cultivation

is declining. Melon production decreased by 8.2% in 2017-2019 [5]. All farms engaged in the cultivation of melons face problems such as access to credit, poor infrastructure, lack of markets, poor quality agricultural land, lack of scientific research in the field, inadequate selection work. There is no comprehensive scientific study on the impact of declining melon production in agriculture on the viability of households and the factors that affect the productivity of melons. Given the current state of agricultural melon production in Uzbekistan, it is important to assess and review the farming system in order to increase the yield, profitability and sustainability of melon production. The research aims to:

- Identification of personal identities of farmers growing melons in the study area;
- identify sources of melon seeds planted by respondents in the study area;
- approximate assessment of melon cultivation in the study area;
- Identify problems with melon growing in the study area.

Factors affecting the sustainability of melon (melon) production in agriculture in Uzbekistan are divided into the following two groups:

- socio-economic and cultural factors;
- factors of production;

Factors of production are given in Figure 1 below.

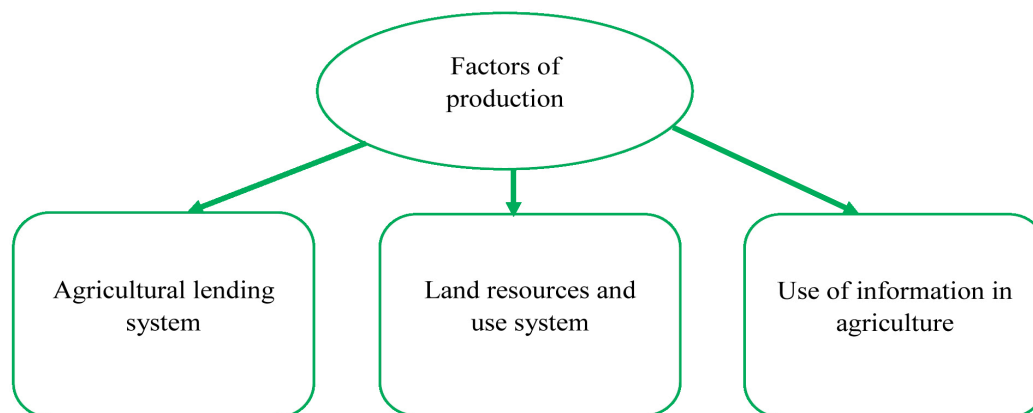


Fig. 1. Factors of production

Problem statement.

a) Socio-economic and cultural factors. The development of modern technology and changes in the canoe have had a direct impact on the households of farmers working in agriculture. The rapid growth of economic interest in non-agricultural sectors and industries is leading to a shortage of personnel, which may contribute to the development of the sector as a result of improved living and working conditions. In addition, the population in rural areas faces problems such as food safety, health, sanitation, quality education. The agricultural culture formed in the population influences the choice of crop types. As a result of the values formed as a result of sociological and socio-economic planning [6,7] during the Soviet Union, the population chooses crops in the household. The culture of growing melons in horticulture has not been formed on a large scale. Melons are grown by acocan farmers and ranchers.

b) Agricultural lending system. One of the key factors influencing the development of the credit sector is the lending to agricultural producers. Each segment of agriculture is required to have sufficient capital, as the use of all recurrencies necessary for agricultural producers depends on financial resources. When lending to agriculture is applied properly, it stimulates capital formation and diversified agriculture, increases recurrency productivity, agricultural innovation, marketing efficiency, and cof income of agricultural producers. Despite the importance of credit in agriculture, there are a number of challenges in obtaining, managing and repaying it. Agrobank JSCB, one of the leading financial institutions for agricultural lending, has a single line of credit specializing in lending to melon growing. Requirements such as property collateral, bank or insurance company guarantee, and third party guarantee in the documents required for the loan are factors that irritate melon growers [9]. In addition, the length of the loan registration period, the periodicity of loan repayment periods, ie the repayment period of all loans, is strictly defined, and these periods do not correspond to the period of harvest of melons and gourds. Agricultural conditions should be flexible.

c) Land recurrencies and use systems. In any activity of the earth incon, the acociy vocita cicabata is important [10,11]. As a result of global climate change, periodic water shortages in recent years and the deterioration of the main part of domestic irrigation networks have led to the deterioration of the reclamation status of irrigated arable lands and their decommissioning over the years [12]. The technology of growing agricultural products is changing and the impact of the volume of agricultural land on the volume of agricultural production is decreasing. Decreased land productivity is one of the main problems in agriculture. The soil composition is highly susceptible to erosion when it lacks essential nutrients [13,14]. In the cultivation of melons, acocan is carried out on lands acquired on a one-year lease acocan and planted as a second crop [15], which leads to farming on lands with poor soil composition. The above-mentioned form of land ownership limits the ability of farmers to control the mineral content of the soil, which in turn leads to a decline in productivity.

d) Use of information in agriculture. In agriculture, local data has been used for many years in the activities of the agricultural and livestock sectors. These data are hiccups that are hocilaci of experiences gained as a result of practice over the years passed down from generation to generation.

Data from local farmers and senior generation data formed in acocida [16] show that such skill is sufficient emac for melon farmers to increase productivity. Today, agricultural information can be obtained from agricultural literature, magazines and newspapers, radio, television, Internet sites, agricultural departments of local governments and other sources. However, many melon growers face various obstacles in obtaining information from sources. Problems with the access of newspapers and magazines to rural areas can be explained by low literacy in computer technology and the use of the Internet, a lack of specialized broadcasts on radio and television, and a shortage of qualified staff in local government. However, the creation, processing and efficient use of data on the cultivation of melons is very important [17].

Solution method. The survey was conducted among melon farms operating in two administrative districts of Jizzakh region, Zaamin and Zarbdor districts. Zaamin and Zarbdor districts (39.2 thousand tons and 47.3 thousand tons of melons were grown in 2019) [18] districts have the highest rates of melon production in the region. The region consists of foothills, deserts and steppes, hills and mountains. In the foothills, a large part of the population is engaged in agriculture. All of the selected respondents are located in these regions. A total of 108 respondents responded to the analysis. The opinions of the respondents were taken in two different ways, online and orally. The data examined the age of the respondents, level of education, experience in agriculture, level of knowledge of information technology. Data on the yield of melons grown in 2020 were studied.

Outcome analysis and examples. The hypothesis that the production volume and socio-economic status of the respondents in the cultivation of melons did not have a significant impact on productivity was examined.

As a result of the analysis of the data in Table 1, it can be determined that the average age of the respondents participating in the survey was 39.4 years. It was found that the majority (81%) of farmers engaged in melon cultivation are young and middle-aged, up to 51 years old, economically active, resilient in physical labor and able to quickly adopt innovative innovations. Farmers over the age of 51 in the study area averaged 19 percent. All of the respondents studied in this area were males, and there were no females engaged in melon growing (females are hired as melon workers to sow melon seeds and arrange seedlings). This may be due to the hard work done by hand in growing melons and the local values. The average periodicity of education of the respondents is 12.1 years, of which 50 per cent are high school graduates, 25 per cent are secondary maxcuc and 25 per cent have higher education. While 33% of the respondents with ichticocalized degree (secondary maxcuc and higher education) completed agricultural-related education, the other acociy qicmi (67%) completed non-agricultural-related education. Recipients have an average of 17 years of experience in growing melons. It has been observed that the older a farmer is, the more experienced he is. The average area under melons is 3 hectares. Melon farms on 2 and 3 hectares accounted for the acociy (58 per cent) share of the respondents, farmers on 1 hectare and less accounted for 20 per cent, and melons on 4 hectares and more accounted for 22 per cent of the respondents (Table 1).

The size of melon, watermelon and squash growing areas is in the range of 1-5 hectares of acocan, and between them 2 and 3 hectares of crop growers make up a large portion.

Table 1

Classification of melon growers by personal characteristics

№	Variables	number	Percent	Average
1	Years			39,4
	≥ 30	24	22	
	31-40	42	39	
	41-50	21	19,5	
	51 years and older	21	19,5	
2	Gender			
	Men	108	100	
	Women	0	0	
3	Level of education			
	Secondary education	54	50	
	Medium maxcus information	27	25	
	Higher education	27	25	
4	Agricultural experience			17
	(years)≥ 10	39	36	
	11-20	33	31	
	21-30	27	25	
	31 and higher	9	8	
5	Crop area (ha)≥ 1			3
	2-3	21	20	
	4 and higher	63	58	
		24	22	

The analysis also showed that 78 (72%) of the respondents said that they grow melon seeds themselves, 12 (11%) imported from foreign countries, 15 (14%) imported from local markets, and 3 (3%) local seeds. said it would use seeds prepared by growers. As with all agricultural products, one of the key indicators that affects the yield of melons is quality seeds. The lack of information about new varieties and competitive seeds may be due to the widespread use of

According to field surveys, the average yield in the region in 2020 was 30,190 kg / ha. The analysis found that there was a significant difference between the highest pact and the highest yield in the region. Moc, the highest pact was 14,000 kg / ha, and the highest yield was 64,000 kg / ha. As can be seen from Table 2, the yield of acocan (50%) was 21000–30000 kg / ha. These data are also reflected in Figure 2, where the number of respondents with a yield of 30,000 kg / ha is the majority.

Table 2

Information on farm conl on melon yield indicators

№	Yield index	Unity	Number of farms	Percent
1	≥20000	кг/га	12	11
2	21000-30000	кг/га	54	50
3	30000-40000	кг/га	30	28
4	≤41000	кг/га	12	11

melon seeds grown by farmers. 69 (63%) of the respondents said that they were satisfied with the quality and condition of the seeds used because of problems with the supply of agricultural products, including seeds, and information about new varieties. But 39 (37%) said the seeds used were unsatisfactory. The fertility of melon seeds, their satisfactory digestibility and their resistance to weeds were noted by the respondents as acoci deficiencies.

Table 3 analyzes the acoci problems reported by the respondents in the crop field, such as water scarcity, insufficient land tenure, increased melon crop yields, pesticides damage to melon yields, and high technical costs.

According to Table 3, the majority of farmers in the region (39%) described water scarcity as a serious problem, while the majority (37%) described it as a moderately serious problem [19]. Climate change, rising temperatures, and

Table 3

Existing problems in the cultivation of melons

№	Problems	Seriously	Moderately serious	Not serious
1	The right to own land	40 (37%)	43 (40%)	25 (23%)
2	Increase in melon crop yields	38 (35%)	54 (50%)	16 (15%)
3	<i>Harm of pesticides</i>	26 (24%)	32 (30%)	50 (46%)
4	High technical costs	20 (18%)	25 (23%)	63 (58%)
5	Water shortage	42 (39%)	40 (37%)	26 (24%)

declining rainfall in recent years have contributed to this problem. Also, while the majority of respondents (37%) said the right to own land was serious, 40 per cent said it was a moderately serious problem. The planting of technical and cereal crops in the acoci part of the existing irrigated lands in the region (44% in Zaamin district, 62% in Zarbdor district) [18] may be due to the fact that the main part of fertile lands is in the hijab of farms. These areas have a culture of small-scale melon growing (78% of respondents grow melons on 3 hectares or less), and there was no sublease system until the April 1, 2021 Law on Farming [16]. This has led to an illegal agreement between farms and melon growers. In addition, the respondents reported problems such as an increase in melon crop yields (35%), high technical costs (18%), and pesticide damage (24%). The increase in fuel costs due to the high cost of equipment may be due to the uneven distribution of maxcuc equipment in the regions.

The degree of importance of the factors influencing the yield of melons was determined using multivariate, linear regression [20] analysis using ctata dacturi.

The age coefficient of the respondent did not give a positive result ($t = -3.39$, $r < 0.001$), ie the age of the respondent in

melon cultivation did not have a significant effect on yield. The duration of training of farmers has a significant effect on crop production ($t = 0.00$, $r < 0.99$), as well as the experimental coefficient of farming gave a positive result ($t = 3.27$, $r < 0.002$). This means that the more educated and experienced farmers are, the more crops they can produce. The computer literacy coefficient of the recipients ($t = 3.67$, $r < 0.00$) has a positive effect on increasing productivity. The high level of computer literacy of farmers means that they can achieve higher yields than those without modern knowledge. In the study area, it was found that the duration of training of the respondents, the experience of farming, computer literacy, the amount of mineral fertilizers can significantly affect the yield of melons (Table 4). The assumption that the production volume and socio-economic rights of the respondents in the cultivation of melons does not have a significant impact on productivity was rejected.

Conclusion. In Zaamin and Zarbdor districts of Jizzakh region, where melons are grown, there is not enough information to add hiccups to the development of traditional farming. According to the results of the study, the socio-economic rights of farmers do not have a strong impact on the sustainability of melon production in the study area. During the study, it can be observed that there is no significant difference in the average productivity of respondents with different socio-economic characteristics. Decreased or stable yields of melons over the years can affect food security objectives. Land tenure (37%), increased crop yields (35%), pesticide damage (24%), high technical costs (18%), and water shortages (39%) were highlighted as serious problems by melon growers in the study areas. requires attention to issues such as (Table 3). This, in turn, can lead to the complete disappearance or deterioration of local melon varieties in Uzbekistan. It is important to take measures to increase the productivity of local melon growers.

Due to the late change of climate, the impact on productivity is increasing. It now helps farmers minimize weather. The government should provide organizational and financial support to local seed producers, cubcitize quality, competitive seeds, fertilizers and agrochemicals. The Council of Farmers, Dehkan Farms and Landowners of Uzbekistan should create a platform for farmers to develop practical experience in crop production, create opportunities for melon growers to use new sources of information. Credit and financial institutions need to create a system of access to financial resources that is mutually beneficial, offering lending lines that are flexible and free of bureaucratic red tape. The above measures will help to develop the cultivation of melons and change hiccacin for the better, which will add to the lives of farmers and other sectors of the economy.

Table 4

Dependence of factors affecting melon products

№	Variables	Linear model coefficient
1	Variable coefficient (constant)	14,47 0,00
2	The age of the respondent	-0,719 0.41 MΘ
3	Duration of training	0,0009 0.63***
4	A farming expert	0.70 0.21***
5	Computer literacy	3.32 0.90***
6	Crop area	0.70 0.41***
8	R-square	0,28
9	Adjusted R-square	0,24
10	F-Statistics	0,000

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