

# Cost and Profitability of Lemon Growing on Farms in Khatlon Region

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**ABSTRACT.** *The article is devoted to the analysis of the cost of production of lemon fruits in farms of the Khatlon region. In particular, the article shows the main expenses of farms that grow lemon fruit. There are also items of expenditure of 2 large zones, Kurgan-tyubinskaya and Kulyabskaya, which differ in the bioclimatic conditions of growing lemon fruits. It was found that in the Kurgan-tyubinsk zone, where the bioclimatic conditions are more suitable for growing lemon fruits, the cost of production is much lower in comparison with the Kulyab zone. The structure of the cost of one ton of lemon in various forms of management of the region is also given.*

**KEYWORDS:** *Cost and profitability, Lemon grow, Khatlon region*

## 1. Introduction

Any type of agricultural industry should be economically profitable, both from the point of view of the national economy as a whole, and this agricultural enterprise in particular. The works of many economists are devoted to improving the economic efficiency of industrial and agricultural production. It should be noted the great contribution of scientists A. G. Agabekov, G. A. Alexandrov, V. V. Novozhilov, V. S. Nemchinov, B. P. Plyshevsky, S. S. Shatonin and others. Various aspects of agricultural production efficiency are reflected in the works of N. P. Alexandrov, G. A. Babkov, K. P. Obolensky, V. A. Svobodin, P. P. Pukhlyakova, H. G. Gafurova, A. E. Ergasheva, and others. However, in the works of these authors, the issues of location and increasing the efficiency of lemon fruit production, taking into account the conditions of the country's regions, are not sufficiently covered. It is necessary to study the regional basis for the profitability of specialization and development of farms for the production of lemon fruits and develop methodological and practical proposals for increasing their production.

Many scientists and economists study the problems of increasing the economic efficiency of lemon fruit production in Tajikistan, Ashurov I. S. (2009, 2014) notes that when creating personal subsidiary farms, the economic efficiency of lemon cultivation is much higher compared to other crop production sectors and it is necessary to take into account the agricultural techniques of cultivation.

Ganiev T. B.(1995),Gorshkov V. M.,Livriychuk I.,Tutberidze B.,Lugovtsov A.,(1978,1981,2006) investigating the issues of economic efficiency of the crop production industry, note that bioclimatic conditions are one of the most important factors that Should be taken into account when organizing the cultivation of lemon fruits, which is not taken into account by many business owners who grow this product.

Madaminov A. A., Abdullozoda D.,(2007, 2012, 2015, 2016) when studying the economic efficiency of some farms where the level of profitability was lower than in comparison with neighboring farms in the same region, we came to the conclusion that reducing direct and indirect costs in the cultivation of the product is one of the ways to increase production efficiency.

The cost of a lemon, as an objective economic category, not only reflects certain economic relations with the reproduction of consumed funds, but can also be one of the generalizing, most important parameters of the economic profitability of agricultural production. The cost of lemon production is also the basis for setting the starting price, so its accurate accounting and analysis should be carried out more clearly and objectively.

#### The significance of research

The study found that lemon fruits are not grown in all regions of the Republic of Tajikistan, and the level of fruit production in them varies significantly. And in those farms that are located in unfavorable climatic conditions, when growing lemon fruits, there are large expenses.

Multiple studies have established that the cost price is the most important generalizing indicator of the economic operation of agricultural organizations, the less labor and the amount of funds spent on the production of a unit of production, the better organized and more efficiently agricultural production is conducted.

Issues of reducing product costs are becoming very important at the current time of production. The search for resources to reduce the cost of production in most dehkan farms saves them from bankruptcy and contributes to their development in a market economy.

There are costs for production products, which includes all costs associated with the production and movement of goods to the storage location, and the total cost of products, taking into account the cost of selling goods. Production costs are formed from certain types of expenses that have different production purposes. Their share in the total amount of expenses represents the cost structure. It depends on the specialization of the industry, technical security and production management.

Calculating the cost of goods in dehkan farms is necessary in order to determine how much it costs the producer to produce products, to establish the economic profitability of growing certain types of citrus crops in the conditions of this farm.

Therefore, along with the increase in gross and marketable output, the primary role is played by reducing production costs and, on this basis, a significant increase in agricultural production. In a market economy, the basis for the development of

agricultural enterprises can increase production, reduce production costs and ensure the profitability of all industries.

**Method**

In the course of economic assessment of the current state of the industry, economic-statistical and comparative analysis of the study were used.

The information base was the official data of the Agency for statistics of the Republic of Tajikistan, the Department of statistics of the Khatlon region.

**Results**

To study the cost indicators in typical dehkan (farm)farms of the Khatlon region, we analyzed the structure of expenses for growing lemon fruits and compared the cost indicators for growing zones (table 1).

*Table 1 Analysis of The Structure of Expenses for Growing Lemon Fruits in Typical Dehkan (Farm) Farms in Agricultural Zones of Khatlon Region for 2012-2016. (%)*

Years	the Kurgan-Tyube area			Kulyab area		
	Salary	Purchase of tape and other	Fertilizer	Salary	Purchase of tape and other	Fertilizer
2012	27	32	26	26	31	21
2013	28	34	28	27	33	22
2014	28	37	30	28	34	23
2015	29	3	30	31	35	23
2016	30	38	29	28	38	24

Source: compiled and calculated based on the annual reports of dehkan (farmers) farms in Khatlon region

In all the farms under consideration, a significant share of the cost of lemon is spent on the purchase of film (32-38; 31-38%), fertilizers (26-29; 21-24%) and other materials.

A sharp increase in prices for mineral and even organic fertilizers, fuel and lubricants, and energy resources in the studied areas leads to an increase in the cost of lemon fruit.

It is established that the cost of lemon fruits produced at agricultural enterprises of the Khatlon region has been increasing in recent years, as shown by the data in the table (table 2).

These data show that in recent years, the cost of 1 t of products received in the zones of the region under consideration has increased significantly. For example, in 2012, an average of 5920 somoni was spent on the production of one ton of lemon in the region, and in 2016 this figure increased to 6410 somoni, or by 8.3%. The cost of

production of one ton of lemon in the Kurgan-tyubinsk zone in 2016 increased by 3.3%, and in the Kulyab zone by 13.3%.

*Table 2 the Cost Of One Ton of Lemon in the Farms of Kurgan-Tyubinsk and Kulyab Zone of Khatlon Region, Somoni*

Areas	Years					2016/2012
	2012	2013	2014	2015	2016	
Kurgan-Tyube area	5790	5840	5870	5820	5980	103.3
Kulyab area	6040	6110	6160	6400	6840	113.3
Average for the region	5920	5980	6020	6110	6410	108.3

Source: Main Department of agriculture of the region

The structure of the cost of 1 ton of lemon in various forms of management for 2012-2016 is shown below (table 3).

*Table 3 Structure of The Cost of One Ton of Lemon in Various Forms of Management, on Average for 2012-2016*

Cost items	Forms of management					
	Public sector		Dehkan (farm) farms		Household	
	A m o u n t	S p e c i f i c	A m o u n t	S p e c i f i c	A m o u n t	S p e c i f i c
Payment of labor	852	14.1	639	10.9	531	11.3
Seedlings	1377	22.8	1424	24.3	973	20.7
Fertilizers	1192	19.8	1453	24.8	1208	25.7
Toxic chemicals	513	8.5	580	9.9	465	9.9
Depreciation and amortization	709	11.7	668	11.4	517	11.0
Fuels and lubricants	173	2.9	147	2.5	99	2.1
Transportation costs	310	5.1	299	5.1	301	6.4
The cost of water	77	1.3	70	1.2	42	0.9
Other costs	834	13.8	580	9.9	564	12
Total	6037	100.0	5860	100.0	4700	100.0

Source: author's Research

The data in table 3 show a significant difference in the cost of one ton of lemon in various forms of management. For example, the cost of one ton of lemon in agricultural enterprises ranges from 6037 somoni, in dehkan (farm) farms 5860 somoni and in households 4700 somoni.

The analysis of these indicators shows that the main types of costs for lemon production are the cost of purchasing seedlings, the share of which in the structure

of the cost of farms in the studied areas. for 2012-2016. averaged 20.7-24.3%. mineral fertilizers. the share of which is 19.8-25.7%. chemicals 8.6-9.9%. depreciation 11.0-11.9%. which is very high. and others.

It should be noted that the main producers of lemon in the regions of Khatlon region are farms of the population. They annually increase the area of plantings and achieve their increase in yield. As a result. they achieve good economic indicators (table 4).

Especially the best economic performance was achieved in the farms of Kurgan-Tyube zone. The yield of products has a tendency of systematic growth and in 2016 amounted to 227.0 C / ha. which is almost 4 times higher than in the Kulyab zone. The cost of producing 1 C of lemon in the Kurgan-tyubinsk zone tends to decrease and in 2016 amounted to 598 somoni. which is 12.6% lower than in the Kulyab zone. The increase in the cost of production was due to an increase in the price of energy carriers. The selling price of fruit also tends to increase. and serves as one of the ways to increase the income of producers. The profit of producers increases due to higher prices and yields. Accordingly. there is a tendency to increase the level of profitability of manufactured products.

If in 2012 the level of profitability in the Kurgan-tyubinsk zone of the region was 53.7%. in 2016-84.0 %. The level of profitability in the Kulyab zone also tends to grow. but somewhat lags behind the Kurgan-tyubinsk zone. due to the relatively high cost of production. Meanwhile. the parameters of labor productivity in the farms of Kurgan-Tyube zone is much higher than in Kulyab.

*Table 4 the Economic Profitability of Lemon Production in Farms of Khatlon Oblast*

Indicators	Zone					
	Kurgan-Tyube			Kulyab		
	Years					
	2012	2014	2016	2012	2014	2016
Area of lemon crops in the population's farms. ha.	173.4	175.4	183.5	15.4	18.1	19.5
including in the fruit-bearing age. ha	149.0	168.4	165.5	15.0	18.1	19.5
Gross revenue. C	33093.0	37159	37575	1917.0	965	1117
Yield. C / ha	222.1	220.7	227.0	127.8	53.3	57.3
Cost of 1 C of lemon. somoni	579	587	598	604	616	684
Production cost. thousand somoni	19161.0	21812.0	22470.0	1158.0	594.4	764.0
Sale price 1 C. somoni	890	920	1100	890	920	1100
Gross income. thousand somoni	29452.0	34186.0	41333.0	1706.1	887.8	1287.7
Profit (loss) total.	10291.0	12374.0	18863.0	548.1	293.4	523.7

thousand somoni						
Profit per 1 ha of fruit-bearing garden. thousand somoni	69.1	73.5	114.0	36.5	16.2	26.9
Level of profitability. % labor	53.7	56.7	84.0	47.3	49.4	68.6
Costs. thousand people / day	331.2	332.9	337.0	338.0	332.0	342.0
Labor productivity. somoni. person / day	88.9	102.7	122.7	5.1	2.7	3.8

Source: author's Calculations based on data from farms in Khatlon region

In General. comparing the economic indicators of 2 large farms of the Khatlon region (Kurgan-tube and Kulyab). we can conclude that the bioclimatic conditions in the Kulyab zone are no more suitable for growing lemon fruits.

## 2. Conclusion

In General. analyzing the data on the cost of lemon fruit production on farms in Khatlon region. we can conclude that the cost of lemon for the analyzed period increased mainly due to the increase in prices for agricultural machinery and spare parts. fuel and lubricants. fertilizers and chemicals used against agricultural pests and diseases. as well as agronomic and other services. According to the level of profitability in General. The Kurgan-tyubinsk zone seemed to be the most profitable of the two zones.

Research has shown that in each specific dehqan economy or population farms. the cost of production and the share of each type of cost are affected by a large number of interrelated individual factors of a production and non-production nature.

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