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EVALUATION OF GRAPE PRODUCTION PRACTICES AMONG VINE GROWERS IN GUZARA DISTRICT OF HERAT PROVINCE

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ABSTRACT

This research was conducted in 2024 in Siyavashan village, located in Guzara district of Herat province, with the aim of evaluating the grape production practices in the area. The primary goal of the study was to identify the existing challenges and opportunities in grape cultivation in Siyavashan and to propose strategies for improving productivity and efficiency among local vine growers. Data were collected from a sample of 60 participants using pre-designed questionnaires. The gathered information included details on production methods, literacy levels, farming experience, and the economic status of the grape growers. Findings from the research show that 50% of the respondents had an average level of knowledge regarding grape production techniques. Moreover, 63.33% of the respondents belonged to the older age group (above 50 years). Illiteracy was prevalent among 51.67% of the participants. About 65% of the farmers had medium-sized families (4–8 members), and the majority (61.67%) owned small vineyards ranging from 1 to 3 jeribs (1Hectar = 5 Jeribs). A significant 96.67% of respondents had extensive farming experience of over 10 years. In terms of annual income, 45% of the respondents fell into the middle-income bracket, earning between 121,556.62 and 370,943.37 Afghanis. The study indicates that most grape growers in the area face numerous challenges primarily due to a lack of attention and support from the government. Targeted governmental support and interventions could play a crucial role in improving the living conditions and productivity of these farmers.

Keywords: *evaluation, farmers, grapes, production practices, siyavashan*

INTRODUCTION

Grapes (*Vitis vinifera L.*), belonging to the *Vitaceae* family, are among the oldest and most popular fresh fruits in the world. This perennial plant has a strong, elongated stem, and exists in many varieties with colors ranging from green, red, and purple to yellow and black. The diversity of grape varieties is so extensive that thousands of different types are cultivated across the globe. Its high genetic diversity allows grapes to be grown in a wide range of soil types and climatic conditions. Beyond being a tasty and fresh fruit, grapes are of considerable economic value due to their wide applications in the food and beverage industries. In addition to fresh consumption, grapes are also processed into products such as raisins, grape molasses, verjuice, and even wine.

In Afghanistan, grape cultivation is one of the most important agricultural activities. The country, blessed with favorable climatic conditions, has the capacity to produce various types of grapes. Afghan grapes are particularly valued in both domestic and international markets for their superior quality and sweet flavor. However, grape growers face numerous challenges such as limited market access and the absence of effective marketing strategies. While countries like Italy, France, Spain, the United States, China, and Turkey are known as the leading global producers of grapes, Afghanistan—given its suitable conditions—holds the potential to become a significant player in this sector.

Herat province is considered one of the main centers for grape production in Afghanistan. With dozens of grape varieties, Herat produces a significant volume of grapes annually. In Siyavashan village, located in Herat province, grape cultivation is one of the primary occupations and income sources for local farmers. Here, grape growing and production are not only vital to the local economy but are deeply rooted in the region's cultural practices. With the help of traditional knowledge and agricultural techniques, farmers in Siyavashan have managed to produce high-quality grapes. Leveraging the expertise available in Herat province,

farmers in Siyavashan can further develop both production and marketing of their grapes. The region's favorable climate and fertile soil provide the potential for producing grapes of competitive quality for international markets. Nonetheless, marketing and sales remain major challenges and call for greater attention and investment to access larger and more diverse markets. This research aims to examine the extent of grape growers' knowledge about production and marketing methods, while also identifying the challenges they face and presenting their suggestions.

Several related studies have been conducted in other regions:

- Behrouz Hassanpour (2002), in the study *"Economic Analysis of Grape Production and Estimation of Technical Efficiency"* conducted in Kohgiluyeh and Boyer-Ahmad, Iran, found that the average cultivated area per farmer was 0.76 hectares.
- Engineer Morteza Ashrafi and colleagues (2005), in their study *"Evaluation of Grape Production Factor Efficiency"* in Khorasan Province, Iran, reported that the age range of participants was between 23 and 70 years, with an average age of 40.
- Shoja'at Zare (2005), in a study titled *"Grape Production Economics and Efficiency in Kashmar County"*, reported that the average family size of participants ranged from 6 to 7 members.
- Masoud Ghazvini and colleagues (2013), in their research *"Assessment of Vineyard Sustainability"* conducted in Takestan County, Qazvin Province, using the FESLM (Framework for Evaluation of Sustainable Land Management), found that most respondents had 15 to 30 years of experience.
- Mostafa Teymouri and colleagues (2016), in their research titled *"Factors Affecting Labor Productivity in Grape Production"* conducted in Mamasani County, Iran, found that 34.6% of the 140 grape growers surveyed were illiterate.
- Nasim Monjezi (2019), in a study titled *"Evaluation of Energy Consumption Efficiency and Economic Analysis of Grape Production"* conducted in Karun County, Khuzestan Province, Iran, found that 93.39% of the respondents had professional knowledge and technical efficiency in grape production.
- Esmail Rahmani and colleagues (2022), in their research titled *"Optimization of Energy Consumption and Economic Efficiency of Grape Production Methods"* using Data Envelopment Analysis (DEA), concluded that the net profit per ton of grapes using traditional methods was approximately $2,609 per hectare.

OBJECTIVES

(1) To know the evaluate grape growers' production practices

(2) To know the economic and social profile of grape farmers

(3) To identify key challenges and suggested solutions by grape growers

METHODOLOGY

This research is of the ex-post facto research design type, which studies phenomena that have already occurred. Information and data were collected from a sample of 60 individuals, and the data were gathered randomly using pre-prepared questionnaires. The questionnaires used in this study consisted of three main sections (respondent demographics, general information on the socio-economic profile of the farmers, and components related to production methods). This study was conducted in Siyavashan village, Guzara district, Herat province, and to obtain the expected results, the data were analyzed statistically using SPSS and Excel to determine frequency and percentage, mean, Standard Deviation as statistical tools and techniques.

RESULTS AND DISSCUSSION

Table 1 reflects the availability of information related to grape production operations, showing that 81.67% of the participants had information about the recommended varieties, 76.67% had knowledge regarding the recommended seed amount per jerib, 78.33% of the farmers were informed about the use of animal and organic fertilizers per jerib, 63.33% of the respondents had knowledge about the use of animal and organic fertilizers per jerib, 53.33% of the respondents had knowledge about the use of chemical fertilizers per jerib, 51.67% of the individuals had information regarding the presence of pests, 36.67% had knowledge about pest control methods, 41.67% of the farmers had information regarding the presence of diseases, 13.33% had knowledge about disease control methods, 63.33% of the participants had information on the presence of weeds, 40% had knowledge about weed control methods, 85% of the farmers had information about the method of harvesting, and 53.33% of the farmers were informed about post-harvest care to prevent spoilage.

Table 1 : level of knowledge related to grape production (n = 60)

No.	Statements	Frequency	Percentage
1	Recommended grape varieties for production	49	81.67
2	Recommendations regarding seed amount per jerib	46	76.67
3	Knowledge related to the method of using animal and organic fertilizers per jerib	47	78.33
4	Knowledge related to the amount of animal and organic fertilizer per jerib	38	63.33
5	Knowledge related to the method of using chemical fertilizers per jerib (black and white fertilizer)	32	53.33
6	Knowledge related to the presence of pests	31	51.67
7	Knowledge related to pest control methods	22	36.67
8	Knowledge related to the presence of diseases	25	41.67
9	Knowledge related to disease control methods	08	13.33
10	Knowledge related to the presence of weeds	38	63.33
11	Knowledge related to weed control methods	24	40.00
12	Knowledge related to harvesting methods	51	85.00
13	Post-harvest care to prevent spoilage	32	53.33

Multiple Respondents Analysis

The knowledge of grape farmers regarding production methods is briefly presented in Table (2). According to the information in the bellow table, 30% of the respondents had a low level of knowledge about production methods, the majority — 50% — were at a medium level, and 20% of the respondents had a high level of knowledge regarding grape production methods.

Table 2: Respondents' Knowledge Regarding Grape Production Methods (n = 60)

Sr. No.	Category	Frequency	Percent
1	**Low level** (up to 6.58)	18	30.00%
2	**Medium level** (6.58–8.18)	30	50.00%
3	**High level** (above 8.18)	12	20.00%

The findings of this study contrast with those of Nasim Monjezi *et al.*, 2019. This is because the two studies were conducted at different times and in different geographical locations. Therefore, in various regions, people have different characteristics, and these differences (such as age, experience, level of education, etc.) influence the outcomes of the research.

In Table (3), information related to the general socio-economic profile of the grape farmers is presented. This information shows that 63.33% of the farmers were elderly (over 50 years old), 65% of the respondents had medium-sized families (4–8 members), 51.67% of the respondents were illiterate, 96.67% of the farmers had extensive farming experience (more than 10 years), 61.67% of the individuals had small-scale vineyards (1–3 jeribs), and 45% had an average annual income.These findings are in agreement with the results of the studies by Behrooz Hassanpour, 2002, Esmail Rahmani *et al.* 2022, Engineer Morteza Ashrafi *et al*. 2005, Shojaat Zarei *et al*. 2005 and Mostafa Teimouri *et al*. 2016.

Table 3 : presents the general socio-economic profile of the individuals under study. (n=60)

Variables	Category	Number	Percentage
Age	Young (18-30 years)	03	05.00
	Middle-aged (31-50 years)	19	31.67
	Elderly (over 50 years)	38	63.33
Family size	Small (1-3 members)	02	03.33
	Medium (4-8 members)	39	65.00
	Large (more than 8 members)	19	31.67
Education level	Illiterate	31	51.67
	Primary School (grades 1-6)	16	26.67
	Secondary School (grades 7-9)	03	05.00

Variables	Category	Number	Percentage
Education level	High School (grades 10-12)	07	11.67
	14th Grade (Seventeenth and Fourteenth)	01	01.67
	Bachelor's Degree	02	03.33
Farming experience	Low (1-5 years)	0	0.00
	Medium (6-10 years)	02	03.33
	High (more than 10 years)	58	96.67
Land ownership	Irrigated Land	Small Farmers (1-3 jeribs)	28
		Medium Farmers (4-10 jeribs)	10
		Large Farmers (more than 10 jeribs)	02
	Rainfed Land	Small Farmers (1-3 jeribs)	0
		Medium Farmers (4-10 jeribs)	0
		Large Farmers (more than 10 jeribs)	0
	Orchards	Small Farmers (1-3 jeribs)	37
		Medium Farmers (4-10 jeribs)	19
		Large Farmers (more than 10 jeribs)	04
Annual income	Low (less than 121,556.62 AFN)	23	38.33
	Medium (121,556.62–370,943.37 AFN)	27	45.00
	High (more than 370,943.37 AFN)	10	16.67

Table 4 outlines the problems faced by the farmers, ranked as follows: "Lack of government attention and support", "Absence of agricultural cooperatives", "High price fluctuations", "Lack of training programs" and "Water shortage,".

Table 4 : Problems provided by the respondents (n=60)

Sr. No.	Problems Expressed	Number	Percentage	Rank
1	**Lack of government attention and support**	58	96.66	I
2	**Absence of cooperative companies (agricultural cooperatives)**	43	71.66	II
3	**High price fluctuations**	37	61.66	III
4	**Lack of training programs**	35	58.33	IV
5	**Water shortage**	35	58.33	V

Multiple Respondents Analysis

Table (5) presents the suggestions provided by the individuals under study, ranked as follows: "Government attention and support", "Controlling price fluctuations", "Establishing agricultural cooperatives", "Creating educational classes" and "Providing loans through banks."

Table 5 : Suggestions provided by the respondents (n=60)

Sr. No.	Suggestions Expressed	Number	Percentage	Rank
1	**Special attention and support from the government**	58	96.66	I
2	**Controlling prices and preventing fluctuations**	43	71.66	II
3	**Establishing support institutions (agricultural cooperatives)**	37	61.66	III
4	**Establishing educational classes**	35	58.33	IV
5	**Establishing lending banks**	35	58.33	V

Multiple Respondents Analysis

CONCLUSION

As a result, it can be stated that grapes, as one of the most important agricultural products globally, play a significant role in the economy and industry. This fruit is important not only because of its high nutritional value and diverse applications—such as in the production of processed products like raisins, grape juice, etc.—but also as a major source of income for orchardists and producers. Furthermore, the grape industry, by creating numerous job opportunities and influencing the supply and marketing chain, plays a prominent role in local and national economies. Investing in improving the quality and increasing the production of grapes can contribute to sustainable economic development and the improvement of orchardists' livelihoods.

CONFLICT OF INTEREST

All authors express no conflict of interest in any part of the research.

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