

Investigating Motivations and Problems of Medicinal and Aromatic Plant Processing in Kashan City, Iran

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ABSTRACT

The importance of medicinal and aromatic plants is increasing day by day. The international market of herbal products is estimated to be US\$ 62 billion which is poised to grow to US\$ 5 trillion by 2050. For making full use of this potential, countries must develop scientific cultivation, post harvest technology, processing, manufacturing, research and extension, patenting and marketing for medicinal plants. With regards to this importance, the main goal of this research was to study the motivations and problems of aromatic plant processing at Kashan City, Iran. This city has more than 370 species of wild medicinal and aromatic plants. Over 70 plant species are processed in this region. The result of processing is the production of rosewater and other distillates. In this survey, a research questionnaire was used. Reliability was determined by Cronbach's alpha (> 0.7) and validated by the ideas of selected experts and producers. The statistical population were traditional producers of rosewater and other distillates 105 of whom were selected randomly. Descriptive and inferential statistics such as frequency, percentage, cumulative percentage, mean, minimum, maximum, coefficient of variation and factor analysis were used for data analysis. The result of factor analysis for motivations of aromatic plant processing indicated that five factors (cultural belief, economic, skill, relative advantage and job creation) explained 68% of total variance. Regarding the problems of aromatic plant processing, five factors (economic, production, managerial, research and support) explained 74% of total variance.

Keywords: distillates, factor analysis, medicinal plants, rosewater, traditional producers

INTRODUCTION

The importance of medicinal and aromatic plants (MAPs) is increasing day by day. Medicinal plants are an accessible, affordable and culturally appropriate source of primary health care for more than 80% of Asia's population (Sharmin 2004).

According to the WHO, "A medicinal plant is any plant which, in one or more of its organs, contains substances that can be used for therapeutic purposes, or which are precursors for chemo-pharmaceutical semi-synthesis." When a plant is designated as 'medicinal', it is implied that the said plant is useful as a drug or therapeutic agent or an active ingredient of a medicinal preparation. "Medicinal plants may therefore be defined as a group of plants that possess some special properties or virtues that qualify them as articles of drugs and therapeutic agents, and are used for medicinal purposes" (Qani 1998).

Aromatic plants contain aromatic compounds such as fragrance and essential oils. Many "medicinal" plants are thus also "aromatic" (Omidbeigi 2008).

According to the WHO, the goal of 'Health for All' cannot be achieved without herbal medicines. While the demand for herbal medicines is growing in developing countries, there are indications that consumers in developed countries are becoming disillusioned with modern health-care and are seeking alternatives in traditional medicines. There is, therefore, an increasing consumer demand for herbal medicines in developed countries. Also the international market of herbal products is estimated to be US\$ 62 billion which is poised to grow to US\$ 5 trillion by 2050. For making full use of this potential, countries must develop scientific cultivation, post harvest technology, processing, manufacturing, research and extension, patenting and marketing for MAPs (Harbir 2006).

Asia has an abundance of MAP species. In all countries



Fig. 1 Traditional (A) or industrial (B) workshop of processing with 4 distillation pots.

of South Asia, MAPs play a significant role in the subsistence economy of the people, especially those living in rugged and impoverished hills, mountains and rural interiors. The collection, simple processing and trading of MAPs contribute significantly to the cash income of the poor and women in these regions (Karki *et al.* 2003).

Iran is one of the Asian countries and it has diverse and valuable species of MAPs in some of his areas. The city of Kashan is one of those areas. This city has more than 370 species of wild MAPs. Over 70 plant species are processed in this region (Batooli 2004).

Processing of MAPs involves distillation in which MAPs are converted to rosewater, distillates, perfume and essential oils. This process is done in both industrial and traditional workshops. It should be noted that processing also includes the drying of MAPs is conducted in the study area mainly to produce rosewater and other distillates. The product obtained from the distillation of damask rose is called rosewater and products obtained from the distillation of other MAPs are called distillates (Akbari 2003).

According to statistics published by the Office of Agricultural Statistics of Iran (2010), there are generally 1230 traditional processing workshops and 20 industrial processing workshops in the study area. Also average production

Table 1 Reliability analysis (Alpha).

Scale name	No. of items	Alpha in the scale	Alpha Value ^a
Motivations	16		0.76
problems	21		0.71

^a Alpha value higher than 0.7 is appropriate

of the most important products obtained from traditional and industrial processing annually is 7000 tons rosewater, 30 tons oil and 300 kg perfume in this city.

Distillation operations are the same in both industrial and traditional workshops but installations, equipment, labor and many other factors are different from each other in two workshops. The capacity of distillation pots is the main factor that has led to classification of traditional and industrial workshops. Traditional distillation pots have the same capacity in the study area. Their capacity is only 30 kg of MAPs while industrial distillation pots have different and larger capacities. The capacity of industrial distillation pots varies from 500 to 1500 kg of MAPs (Qafar 2005).

Fig. 1A and **1B**, which are related to traditional and industrial workshops, show the difference in size between traditional and industrial pots.

Traditional workshops are generally in rural areas and

Table 2 Frequency, relative percentage and cumulative percentage based on individual-professional variables.

Variables	Categories ^a	frequency	% of frequency	Mean	Minimum	Maximum
Production experience (years)	< 8	20	19	15.65	2	30
	9-16	41	39			
	17-24	25	23.8			
	25 and above	19	18.1			
	Total	105	100			
Number of distillation pots	Less than 3	63	60	3.49	1	10
	4-6	26	24.8			
	7and above	16	15.2			
	Total	105	100			
Annual rate of direct purchase of plants for distillation(ton)	0	21	20.0	7.38	0.6	20
	0.1-5	40	38.1			
	5.1-10	27	25.7			
	10.1-15	15	14.3			
	15.1 and above	2	1.9			
	Total	105	100.0			
Annual rate of indirect purchase of plants for distillation (ton)	0	34	32.4	26.20	0.5	90
	0.1-30	49	46.7			
	30.1-60	14	13.3			
	60 and above	8	7.6			
	Total	105	100			
Annual rate of production of rosewater and other distillates(ton)	Less than 50	51	48.6	92.68	5	300
	50.1-100	16	15.2			
	100.1-150	11	10.5			
	150.1-200	14	13.3			
	200.1-250	7	6.7			
	250.1 and above	6	5.7			
	Total	105	100			
Distance of processing workshop from village to city (kilometer)	20-30	62	59	33.6	20	50
	30.1-40	17	16.2			
	40/1-50	26	24.8			
	Total	105	100			
Annual rate of direct sale of rosewater and distillates(ton)	0	6	5.7	50.25	1	260
	0.1-50	67	63.8			
	50.1-100	18	17.1			
	100.1-150	6	5.7			
	150.1-200	4	3.8			
	200.1 and above	4	3.8			
Total	105	100				
Annual rate of indirect sale of rosewater and distillates(ton)	0	11	10.5	50.61	1	250
	0.1-50	64	60.9			
	50.1-100	14	13.3			
	100.1-150	6	5.7			
	150.1-200	5	4.8			
	200.1 and above	5	4.8			
Total	105	100.0				

^a Units are based on years, tons, and km that are shown in the column of variables

Table 3 Relative frequency, percentage and cumulative percentage based on individual-professional variables.

Variables	Level of variables	frequency	% of frequency
Education	Low	49	46.7
	Medium	18	17.1
	High	38	36.2
	Total	105	100
Access to extension agents	Low	11	11
	Medium	57	54
	High	37	35
	Total	105	100
Access to successful producers	Low	25	23.8
	Medium	25	23.8
	High	55	52.4
	Total	105	100
Visit of processing successful workshops	Low	61	58.1
	Medium	31	29.5
	High	13	12.4
	Total	105	100
Access to credit facilities	Low	64	61
	Medium	17	16.2
	High	24	22.8
	Total	105	100
Use of family labor	Low	53	50.5
	Medium	13	12.4
	High	39	37.1
	Total	105	100
Satisfaction of the workshop income	Low	75	71.4
	Medium	19	18.1
	High	11	10.5
	Total	105	100

are managed by rural people that have inherited the profession from their forefathers. The most important advantage of this profession is cultivation development of MAPs as these are used as processing inputs. So development of MAP processing leads to the development of MAP cultivation. Other advantages of processing development of MAPs include job creation, to prevent migration and to attract tourists (Kafi *et al.* 2002).

Unfortunately, this profession currently has been met with many problems. Considering the importance of issues expressed, the main goal of this research was to study the motivations and problems of development of traditional processing of MAPs in Kashan villages.

Although many studies have been performed on the cultivation of MAPs, very few have dealt with their processing. Thus, many variables in this research have been obtained through the observation and interview with traditional pro-

ducers of rosewater and other distillates.

Since cultivation and processing of MAPs are two linked processes, some variables related to motivations and problems of MAP cultivation are similar to those related to motivations and problems of MAP processing. Thus, in this research, studies related to cultivation of MAPs have been used; these studies have been effective in determining some variables of the current research.

Sharmin (2004) in Bangladesh showed that the farmers were motivated to cultivate MAPs because of their profitability. Another reason for cultivation of MAPs quoted by the growers of Laxmipur union of Natore district in Rajshahi division is the unsuitability of soils for other crops. The effects of neighborhood cultivating MAPs and making easy money from this are also playing a role in the spread of MAP cultivation.

Harbir (2006) in India showed that some of the major problems in field cultivation of MAPs were: absence of cultivation technology, lack of knowledge and training in post-harvest handling, lack of quality assurance and standardization and inadequate marketing set-up for selling cultivated MAPs.

Kumar (2008) in Nepal expressed that major problems for marketing are: unavailability of markets, lower price, lack of knowledge about markets, no any security for risks and uncertainty for marketing, and no subsidy for market facilities.

Batooli (2004) in Iran reviewed that problems such as purchase price volatility of MAPs, sale price volatility of rosewater and other distillates, price volatility of containers of rosewater and other distillates and lack of credit facilities act as a barrier in the direction of the development of processing of MAPs. However, motivations such as secure domestic markets, economic benefits and ease in processing of MAPs can facilitate development of the profession.

Considering the issues indicated in the literature, the main goal of this research was to study the motivations and problems of development of traditional processing of MAPs in Kashan villages and to determine the most important problems and motivations. The strongest motivations should be reinforced and the most important problems should be weakened to develop traditional processing of MAPs and consequently for job creation, to prevent migration and to develop rural areas.

MATERIALS AND METHODS

Sampling and data collection

The present study was based on a field survey. The statistical population consisted of traditional producers of rosewater and other distillates who performed such activities in traditional pro-

Table 4 Ranking of motivations of traditional producers of rosewater and other distillates.

Motivations of traditional producers of rosewater and distillates to attend this job	Mean ^a	SD ^b	CV ^c	Ranking
Blessing existence in this job	4/75	0/90	0/19	1
Having a personal interest to this job	4/47	0/97	0/21	2
Secure domestic markets	3/61	0/79	0/22	3
Inherit this job	4/71	1/10	0/23	4
Economic benefits	4/27	1/07	0/25	5
Having skills in this job	4/14	1/37	0/33	6
Compatible with local conditions and limited resources	3/91	1/31	0/34	7
Recommendation by local leaders and experts	4/11	1/48	0/36	8
Ease in processing of MAPs	3/44	1/26	0/37	9
Presence of successful people in this profession	3/29	1/24	0/38	10
Job creation	3/85	1/58	0/41	11
Easy access to the traditional processing tools	3/08	1/34	0/43	12
Persistence of products obtained from MAP processing (such as persistence of rosewater)	2/95	1/30	0/44	13
Use possibility of the scum of the distillation process	2/04	0/91	0/45	14
Attract tourists	3/30	1/52	0/46	15
To prevent immigration	3/04	1/51	0/49	16

^a This Mean is about Scores that respondents have given their to the various motivations. For example respondents have given to blessing existence in this job, a mean score = 4/75 (1= Very Low, 2= Low, 3= Medium, 4= High, and 5=Very high). Also about SD and CV, numbers obtained are related to scores.

^b Standard deviation

^c Coefficient of variation

Table 5 Ranking of problems of traditional producers of rosewater and other distillates.

Problems of traditional producers of rosewater and distillates	Mean ^a	SD	CV	Ranking
Purchase price volatility of MAPs	4/77	0/68	0/14	1
Lack of credit facilities	4/85	0/76	0/15	2
Poor performance of insurance agencies in connection with activities of producers of rosewater and distillates	4/97	0/80	0/16	3
Delay in investment return time	4/59	0/80	0/174	4
Lack of aromatic plants in the region	4/83	0/85	0/176	5
Requiring high initial capital	4/58	0/85	0/185	6
Sale price volatility of rosewater and other distillates	4/47	0/83	0/186	7
High-wage workers	4/19	0/80	0/19	8
The presence of intermediaries and jobber people	4/35	0/85	0/20	9
Prices volatility of containers of rosewater and other distillates	4/33	0/95	0/22	10
Absence of distillates production union in the region	4/71	1/09	0/23	11
lack of storage technology of aromatic plants	4/15	1/12	0/27	12
Reduce the quality of aromatic plants for long distance between the processing workshop and farm	4/10	1/13	0/275	13
Shortage of experts, technicians and appropriate investigation	4/13	1/14	0/276	14
Shortage of land for expansion of processing workshop space	4/26	1/54	0/36	15
Lack of suitable transport routes for product marketing	3/75	1/57	0/41	16
Lack of proper vehicle to deliver products to market	3/95	1/67	0/42	17
Poor initial design of processing workshop	2/97	1/47	0/495	18
Low access to skilled workers	2/82	1/40	0/496	19
Takeover market by processing industrial workshops	2/53	1/26	0/498	20
Saturation export market	2/64	1/36	0/51	21

^aThis Mean is about *Scores* that respondents have given their to the various problems. For example respondents have given to *purchase price volatility of MAPs* a mean score =4/77 (1= Very Low, 2= Low, 3= Medium, 4= High, and 5=Very high). Also about SD and CV, numbers obtained are related to *scores*.

cessing workshops. There are 1230 traditional workshops of MAP processing in 84 villages of Kashan city with an area of 9647 km² and a population of 297,000. The sample size was 105 producers of rose water and other distillates. In other words, owners of 105 traditional workshops were randomly studied.

In this survey, a research questionnaire was used as the main tool for collecting information. In addition, methods such as observation and interviews with local people and experts were frequently used during the research process.

The study questionnaire included two essential sections. In the first, variables were measured with real numbers such as production experience, number of distillation pots and other variables (**Table 2**). In the second section, Likert-type scales (i.e., questions with a rating scale: 1 = poor, 5 = excellent) were used to measure variables such as motivations and problems.

Reliability and validity

Reliability was determined by Cronbach's alpha (CA > 0.7; **Table 1**) and validity by the idea of selected experts and producers. To examine the reliability of the questionnaire a pilot study was conducted on 40 traditional producers and CA for the items of Likert-type scales was calculated. The results show that each scale showed an appropriate internal consistency. CA is one of the most popular reliability statistics in use today. CA determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability. Alpha coefficient ranges in value from 0 to 1 and may be used to describe the reliability of factors extracted from dichotomous (i.e., questions with two possible answers) and/or multi-point formatted questionnaires or scales (i.e., questions with a rating scale: 1 = poor, 5 = excellent). Values above 0.7 are acceptable reliability coefficients (Kalantari 2006).

Methods of data analysis

Descriptive and inferential statistics such as frequency, percentage, mean, coefficient of variation and factor analysis were used to analyze the data. The calculations were carried out using the "Statistical Package for the Social Sciences" (SPSS v. 11).

The coefficient of variation (CV) is a normalized measure of dispersion of a probability distribution. That is defined as the ratio of the standard deviation to the mean. This measure can be used to rank the variables. In this research CV was used to rank motivations and problems of respondents. A lower value of CV is representative of a better rank (Kalantari 2006).

Factor analysis is a statistical method aimed at summarizing the data. This method examines internal correlation of many variables and eventually classifies them in the framework of public

limited factors. It should be noted that all variables are not suitable for factor analysis (Delawar 2007).

One way to ensure the suitability of data for factor analysis is Kaiser-Meyer-Olkin (KMO) test whose value varies between 0 and 1. If the KMO value is above 0.7, the correlation between the data will be suitable for factor analysis (Nayebi 2010).

The Bartlett test is another way to ensure the suitability of data. Usefulness of a factor analysis model is related to correlation between variables. The Bartlett test is a way to determine the factorability of an inter-correlation matrix. For this purpose, the Bartlett test should be meaningful with an accuracy of 95 or 99% (Sarukani 2009).

Also, eigenvalues are very important, easy and widely used criteria in factor analysis: factor with eigenvalue > 1 is considered to be a meaningful factor (Mansourfar 2008).

Finally, factor loading shows the correlation between a variable and its relevant factor so that factor loading higher than 0.5 is very significant for the interpretation of factors. In this research, factor analysis was used for classifying motivations and problems of respondents (Kalantari 2006).

RESULTS AND DISCUSSION

Individual-professional variables

Among 105 producers of rosewater and other distillates, several variables were calculated: production experience, number of distillation pots, annual rate of direct and indirect purchase of plants for distillation, annual rate of production of rosewater and other distillates, distance of processing workshop from village to city, annual rate of direct and indirect sale of rosewater and distillates (**Table 2**), level of education, access level to extension agents and successful producers, visit level of processing successful workshops, access level to credit facilities, use level of family labor and satisfaction level of the workshop income (**Table 3**) were calculated.

Table 6 Factors extracted from factor analysis related to motivations of traditional producers.

Factors	Eigenvalues ^a	% of variance	Cumulative%
1-Believe - Cultural	2/581	21/511	21/511
2-Economic	1/464	12/202	33/713
3-Skill	1/333	11/944	45/657
4-Relative Advantage	1/361	11/342	56/999
5-Job creation	1/304	10/868	67/867

^aEigen value higher than 1 is appropriate

Table 7 Factors, variables and factor loadings obtained from factor analysis related to motivations of traditional producers.

Factors	Variables	Factor loading ^a
Believe - Cultural	Inherit this job	0/821
	Blessing existence in this job	0/572
	Having a personal interest to this job	0/838
	Presence of successful people in this profession	0/673
Economic	Economic benefits	0/890
	Secure domestic markets	0/625
Skill	Ease in processing of aromatic plants	0/742
	Having skills in this job	0/776
Relative advantage	Compatible with local conditions and limited resources	0/800
	Easy access to the traditional processing tools	0/804
Job creation	Job creation	0/873
	Attract tourists	0/654

^a Factor loading higher than 0.5 is appropriate

Motivations and problems

Blessing existence of the job, having a personal interest to the job and secure domestic markets were the strongest motivations (Table 4). Purchase price volatility of MAPs, lack of credit facilities and poor performance of insurance agencies are the most important problems (Table 5).

The KMO value related to motivations of traditional producers was 0/704. Also, the Bartlett test result is meaningful with an accuracy of 99%. In this study, according to the Kaiser criteria, there were five factors with eigenvalues > 1 (Table 6) explaining (67/867%) of cumulative variance. The believe-cultural factor (consisting of different variables; Table 7), with an eigenvalue of 2/581 explained (21/511%) of the total variance and was the most important motivational factor for the presence of people in the profession of MAP processing. This factor includes beliefs and psychological motives to stimulate people’s activity in professional production of rosewater and other distillates. Generally, the impact of cultural factors is also significant for the development of other productive activities.

The KMO value related to problems of traditional producers was 0/736. Also, the Bartlett test result is meaningful with an accuracy of 99%. In this study, according to the Kaiser criteria, there were five factors with eigenvalues > 1 (Table 8) explaining (74/525%) of cumulative variance.

The economic factor includes and is determined by several variables (Table 9). The most important variable affecting economic factor is requiring high initial capital, whose factor loading is 0/918.

CONCLUSION

According to the results of factor analysis, believe - cultural factor is considered as the most important motivational factor for the presence of people in the profession of aromatic plant processing. Believe-cultural factor includes motivations such as inherit this job, blessing existence in this job, having a personal interest to this job and presence of suc-

Table 8 Factors extracted from factor analysis related to problems of traditional producers.

Factors	Eigenvalues ^a	% of variance	Cumulative%
1-Economic	3/903	27/876	27/876
2-Production	2/285	16/318	44/195
3-Managerial	2/063	14/739	58/934
4-Research	1/145	8/175	67/109
5-Support	1/038	7/417	74/525

^a Eigen value higher than 1 is appropriate

cessful people in this profession. In addition, the economic factor is considered to be the most important problem for the presence of people in the profession of MAP processing and includes problems such as purchase price volatility of MAPs, sale price volatility of rosewater and other distillates, prices volatility of containers of rosewater and other distillates, requiring high initial capital, delay in investment return time and the presence of intermediaries.

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Table 9 Factors, variables and factor loadings obtained from factor analysis related to problems of traditional producers.

Factors	Variables	Factor loading ^a
Economic	Purchase price volatility of aromatic plants	0/836
	Sale price volatility of rosewater and other distillates	0/557
	Prices volatility of containers of rosewater and other distillates	0/875
	Requiring high initial capital	0/918
	Delay in investment return time	0/819
	The presence of intermediaries and jobber people	0/739
Production	Lack of aromatic plants in the region	0/903
	Reduce the quality of aromatic plants for long distance between the processing workshop and farm	0/875
	Lack of storage technology of aromatic plants	0/786
Managerial	Poor initial design of processing workshop	0/895
	High-wage workers	0/860
	Lack of credit facilities	0/630
Research	Shortage of experts, technicians and appropriate investigation	0/898
Support	Poor performance of insurance agencies in connection with activities of producers of rosewater and distillates	0/992

^a Factor loading higher than 0.5 is appropriate

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ANNEX: Full questionnaire

Section 1

1- Please answer carefully the following questions:

1-How many years are you working in this profession?.....year/years

2-What is your level of education? (please mark in the appropriate place)

Primary school Secondary school High school Undergraduate Other.....

3-How many distillation pots do you have?

4-How much **plants** for distillation do you **purchase** annually through **intermediaries and dealers**?.....ton

5-How much **plants** for distillation do you **purchase** annually through **producers of aromatic plants**?.....ton

6-How much **rosewater** do you **produce** annually?.....ton

7-How much **other distillates** do you **produce** annually? (please write separately type and annual rate of production of other distillates in the places marked:

1-type..... annual rate of production..... ton

2-type..... annual rate of production..... ton

3-type..... annual rate of production..... ton

4-type..... annual rate of production..... ton

5-type..... annual rate of production..... ton

6-type..... annual rate of production..... ton

7-type..... annual rate of production..... ton

8-type..... annual rate of production..... ton

8-How much **rosewater** do you **sell** annually to **consumers**?.....ton

9-How much other distillates do you sell annually to **consumers**? (please write separately type and annual rate of sale of other distillates in the places marked:

1-type..... annual rate of sale..... ton

2-type..... annual rate of sale..... ton

3-type..... annual rate of sale..... ton

4-type..... annual rate of sale..... ton

5-type..... annual rate of sale..... ton

6-type..... annual rate of sale..... ton

7-type..... annual rate of sale..... ton

8-type..... annual rate of sale..... ton

10-How much **rosewater** do you sell annually to **intermediaries and dealers**?.....ton

11-How much **other distillates** do you sell annually to **intermediaries and dealers**? (please write separately type and annual rate of sale of other distillates in the places marked:

1-type..... annual rate of sale..... ton

2-type..... annual rate of sale..... ton

3-type..... annual rate of sale..... ton

4-type..... annual rate of sale..... ton

5-type..... annual rate of sale..... ton

6-type..... annual rate of sale..... ton

7-type..... annual rate of sale..... ton

8-type..... annual rate of sale..... ton

12-How far is distance between your workshop and city?(kilometer)

Section 2

1) Please rate the following questions using numbers 1-5 (1 = Very Low, 2 = Low, 3 = Medium, 4 = High, 5 = Very high).

Questions	SCORE				
	1	2	3	4	5
Access level to extension agents					
Access level to successful producers					
Visit level of processing successful workshops					
Access level to credit facilities					
Use level of family labor					
Satisfaction level of the workshop income					

2) To what extent have the following reasons been effective in your activity in this profession? (please answer with 1-5: 1 = Very Low, 2 = Low, 3 = Medium, 4 = High, 5 = Very high)

Motivations	SCORE				
	1	2	3	4	5
Blessing existence in this job					
Having a personal interest to this job					
Secure domestic markets					
Inherit this job					
Economic benefits					
Having skills in this job					
Compatible with local conditions and limited resources					
Recommendation by local leaders and experts					
Ease in processing of MAPs					
Presence of successful people in this profession					
Job creation					
Easy access to the traditional processing tools					
Persistence of products obtained from MAP processing					
Use possibility of the scum of the distillation process					
Attract tourists					
To prevent immigration					

3) To what extent have the following problems been important in this profession? (please answer with 1-5: 1 = Very Low, 2 = Low, 3 = Medium, 4 = High, 5 = Very high)

Problems	SCORE				
	1	2	3	4	5
Purchase price volatility of MAPs					
Lack of credit facilities					
Poor performance of insurance agencies in connection with activities of producers of rosewater and distillates					
Delay in investment return time					
Lack of aromatic plants in the region					
Requiring high initial capital					
Sale price volatility of rosewater and other distillates					
High-wage workers					
The presence of intermediaries and jobber people					
Prices volatility of containers of rosewater and other distillates					
Absence of distillates production union in the region					
lack of storage technology of aromatic plants					
Reduce the quality of aromatic plants for long distance between the processing workshop and farm					
Shortage of experts, technicians and appropriate investigation					
Shortage of land for expansion of processing workshop space					
Lack of suitable transport routes for product marketing					
Lack of proper vehicle to deliver products to market					
Poor initial design of processing workshop					
Low access to skilled workers					
Takeover market by processing industrial workshops					
Saturation export market					