Research Article/Araştırma Makalesi

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MEDITERRANEAN AGRICULTURAL SCIENCES (2018) 31(1): 45-48
DOI: 10.29136/mediterranean.411155

The analysis of information sources used by pomegranate producers in Antalya province of Turkey

Türkiye'nin Antalya ilinde nar üreticilerinin kullandığı bilgi kaynaklarının analizi

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ARTICLE INFO

Received 25 June 2017
Received in revised form 28 March 2018
Accepted 28 March 2018

***Keywords*:**

Information sources
Pomegranate producer
Innovation
Advisory services
Antalya

ABSTRACT

Rural development for many developing countries depends on modern technologies and innovations which are developed by public research institutes and universities, or imported by developed countries. Two key factors may play major role on the use of technology by farm operators; one of them is public and private organizations disseminating recent innovations to rural areas; and the other factor is farm operators' socio economic characteristics and information seeking behavior influencing their decisions for information sources. This study was conducted to search for pomegranate producers' sources of all agricultural techniques and economical information. Socio-economic characteristics and information- seeking behavior influencing farmers' decisions to select their information sources was also the purpose of the study. Data was collected from a sample of 98 producers in Antalya province of Turkey. Information sources used by producers were classified into traditional and modern information sources.

MAKALE BİLGİSİ

Alınış tarihi 25 Haziran 2017
Düzeltilme tarihi 28 Mart 2018
Kabul tarihi 28 Mart 2018

***Anahtar Kelimeler*:**

Bilgi kaynakları
Nar üreticisi
Yenilikçilik
Danışmanlık hizmetleri
Antalya

ÖZ

Gelişmekte olan birçok ülkede kırsal kalkınma kamu araştırma enstitüleri ve üniversiteleri tarafından geliştirilen veya gelişmiş ülkelerden ithal edilen modern teknolojilere ve yeniliklerin varlığına bağlıdır. Çiftçilerin teknoloji kullanımında karar verme davranışları üzerinde iki önemli faktör rol oynayabilir. Buna göre bunlardan ilki yenilikleri kırsal alanlara yaymak için kamu ve özel kuruluşların etkinlikleri, diğer faktör ise çiftçilerin sosyo-ekonomik özellikleridir. Bu çalışma nar üreticilerinin tarım teknikleri ve ekonomik konulardaki bilgi kaynaklarını araştırmak için yürütülmüş olup çiftçilerin bilgi kaynaklarını seçme kararlarını etkileyen sosyo-ekonomik özellikler ve bilgiye ulaşma davranışları araştırılmıştır. Araştırmada kullanılan veriler Antalya ilindeki 98 üreticiden toplanmıştır. Üreticiler tarafından kullanılan bilgi kaynakları geleneksel ve modern bilgi kaynakları olarak ele alınmıştır.

1. Introduction

Pomegranate has become production, consumption and trade product due to recent developments and work in field of production techniques, storage and transportation. Turkey is motherland of pomegranate. It is grown almost in every region of every country. The numbers of pomegranate gardens are increasing in Mediterranean and Aegean region especially during last few years (Anonymous 2011). With time, pomegranate production is increasing in Antalya. Being a healthy fruit and due to climate compatibility pomegranate production is increasing in the region.

The acquisition, development, sharing, and use of information are very important in agriculture sector. Efficiency in flow of information and technology in agricultural activity plays important role in promoting agriculture development and raising standard of living. For this reason, producer should know how to use information sources in agriculture production (Röling 1988; Özçatalbaş 1992; Torun 2011). Adoption of modern technology by farmers and dissemination to large masses increases productivity and profit in short term and in the long term increases standard of living in rural areas (Yalçın and Boz 2007). Extension and advisory services existing in a country affects the pace of technology dissemination (Özçatalbaş 2000; Imran and Ozcatalbaş 2015). In this situation, information sources of producers are very important. In this way, a study on from whom producer get information at various stages of production like production technology, storage, marketing, and how to benefit from consultancy and advisory services is very important in area like Antalya (which is an

important region for pomegranate production). The present study aims at analysis of pomegranate producer's sources of information and how they are benefiting from advisory and consultancy services, and to discuss necessary conditions to improve the effectiveness of the advisory services.

2. Materials and Methods

The main material for the study consists of data collected by face to face interview with pomegranate producers in Aksu, Dosemealti, Manavgat and Serik districts of Antalya Province. Taking into account, views of technical staff of Provincial and District Agriculture Directorate and records from Farmer Record System; 4 districts with 55.6% of pomegranate farm area and 58.3% of production of Antalya, and villages that can represent each district in term of agriculture structure were determined. According to data obtained from records 98 producer were selected to interview with stratified sampling method. The size of the pomegranate area was taken into account in the sample. Chi-square, frequency percentages and cross tabulation methods are used for purpose of data analysis.

3. Results and Discussion

The average age of household head in the study area is 49.7, all of our respondents are literate with minimum of primary education. Size of household head which is very important to carry on agriculture activities was noted to be maximum 6 people and minimum 2 people. Average household size is 3.9 in the study area. Average farming experience is 26.7 year and pomegranate production average experience was 9.5 year. In the study area, average size of pomegranate farm was found to be 0.59 h and average sales price was 0.44 TRY (Table 1).

Table 1. Descriptive statistics.

Descriptive	Maximum	Minimum	Average	Standard Error
Age	68	30	49.70	9.7
Education	Intermediate	Primary	-	-
Income	TRY 2500 and above	1300-2000	-	-
Household Size	6	2	3.90	0.9
Pomegranate Experience (years)	18	5	9.50	2.5
Farming Experience (years)	45	10	26.70	8.6
Pomegranate Area (h)	50	1	5.90	6.1
Pomegranate Sale Price (TRY)	1.0	0.15	0.44	0.2

Farmers use different information sources for each farming operation at different production stages. Different sources of information used by farmers at different stage are grouped by Boz and Özçatalbaş (2010) as traditional information sources, Modern information sources and Mixed. Traditional information sources comprises of family members, self-experience, friend/neighbors, and other farmers while modern information sources are representatives private pesticides/fertilizer companies, staff of provincial/district agriculture directorate, commission agents, TV, and internet. Acquisition of information from both traditional and modern information sources for same farming operation is mixed information source.

Table 2. Categorization of growers' information sources used in pomegranate production.

Stages of production	Information sources			
	Traditional	Modern	Mixed	Total
	Percentage	Percentage	Percentage	Percentage
Land preparation	68.4	-	31.6	100.0
Sowing techniques	68.4	-	31.6	100.0
Fertilization	25.5	28.6	45.9	100.0
Pest and Disease control	2.0	48.0	50.0	100.0
Irrigation	81.6	2.0	16.3	100.0
Harvesting	86.6	-	13.3	100.0
Storage	70.4	29.6	-	100.0
Marketing of product	25.5	74.5	-	100.0
Cost-cutting Measures	100.0	-	-	100.0
Average	58.7	20.3	21.0	100.0

From results presented in Table 2, it is very clear that traditional information sources are still dominant. Growers tend to depend comparatively more on traditional information sources in operations like harvesting, irrigation, land preparation, and sowing techniques. Modern information sources are just dominant in information regarding marketing of product, while mixed information sources are more frequently used for pest and disease control and fertilization.

3.1. Relationship between information sources and age

Age is very important factor which affects information seeking behavior of the individuals. Using chi-square analysis we tried to analyze the relationship between different age groups and information sources. According to results presented in Table 3, a relation was found between age group and information for land preparation, sowing techniques and harvesting. More the older a grower is he will tend to use traditional information sources, and younger growers are more likely to adopt mix information sources. No relation was found between different age groups and farm operations like, fertilization, pest and disease control, irrigating, marketing of product, and cost-cutting measure.

3.2. Relationship between information sources and education

From results presented in Table 4, using chi-square analysis we analyze the relationship between different education level and information sources. There was no relationship found between education and information sources for any farm operation.

Table 3. Relationship between different age groups and information sources.

		Age Groups			
		30-40	**41-55**	**56-68**	**Total**
Stages of production / Information sources		Percentage	Percentage	Percentage	Percentage
Land Preparation	Traditional	47.8	60.5	93.8	68.4
	Mixed	52.2	39.5	6.2	31.6
X^2=15.26 df=2 P= 0.00 P<0.05 relation was found					
Sowing technique	Traditional	56.5	65.1	81.2	68.4
	Mixed	43.5	34.9	18.8	31.6
X^2=7.237 df=2 P=0.02 P<0.05 relation was found					
Fertilization	Traditional	21.7	32.6	18.8	25.5
	Modern	34.8	18.6	37.5	28.6
	Mixed	43.5	48.8	43.8	45.9
X^2=4.1 df=4 P= 0.35 P>0.05 relation was not found					
Pest and disease control	Traditional	-	4.7	-	2.0
	Modern	52.2	48.8	43.8	48.0
	Mixed	47.8	46.5	56.2	50.0
X^2=3.1 df=4 P= 0.53 P>0.05 relation was not found					
Irrigation	Traditional	91.3	79.1	78.1	81.6
	Modern	-	2.3	3.1	2.0
	Mixed	8.7	18.6	18.8	16.4
X^2=2.0 df=4 P= 0.71 P>0.05 relation was not found					
Harvesting	Traditional	91.3	76.7	96.9	86.7
	Mixed	8.7	23.3	3.1	13.3
X^2=7.0 df=2 P= 0.03 P<0.05 relation was found					
Storage	Traditional	69.6	81.4	56.2	70.4
	Modern	30.4	18.6	43.8	29.6
X^2=5.5 df=2 P= 0.06 P>0.05 relation was not found					
Marketing	Traditional	17.4	32.6	21.9	25.5
	Modern	82.6	67.4	78.1	74.5
X^2=2.1 df=2 P= 0.34 P>0.05 relation was not found					
Cost-cutting measures	Modern	100.0	100.0	100.0	100.0
Total		100.0	100.0	100.0	100.0

Table 4. Relationship between different educational levels and information sources.

		Education Levels		
		Primary	**Elementary**	**Total**
Production stages / Information Sources		Percentage	Percentage	Percentage
Land Preparation	Traditional	74.6	59.0	68.4
	Mix	25.4	41.0	31.6
X^2=2.6 df=1 P= 0.10 P>0.05 relation was not found.				
Sowing Technique	Traditional	74.6	59.0	68.4
	Mix	25.4	41.0	31.6
X^2=2.6 df=1 P= 0.10 P>0.05 relation was not found				
Fertilization	Traditional	25.4	25.6	25.5
	Modern	27.1	30.8	28.6
	Mix	47.5	43.6	45.9
X^2=0.1 df=2 P= 0.91 P>0.05 relation was not found				
Pest and disease control	Traditional	3.4	-	-
	Modern	45.8	51.3	48.0
	Mix	50.8	20.4	50.0
X^2=1.4 df=2 P= 0.47 P>0.05 relation was not found				
Irrigation	Traditional	74.6	92.3	81.6
	Modern	1.7	2.6	2.0
	Mix	23.7	5.1	16.3
X^2 =5.9 df=2 P= 0.06P>0.05 relation was not found				
Harvesting	Traditional	88.1	84.6	86.7
	Mix	11.9	15.4	13.3
X^2=0.2 df=1 P= 0.61 P>0.05 relation was not found				
Storage	Traditional	67.8	74.4	70.4
	Modern	32.2	25.6	29.6
X^2=0.4 df=1 P= 0.48 P>0.05 relation was not found				
Marketing	Traditional	30.5	17.9	25.5
	Modern	69.5	82.1	74.5
X^2=1.9 df=1 P= 0.16 P>0.05 relation was not found				
Cost-cuttingMeasures	Traditional	100.0	100.0	100.0
Total		100.0	100.0	100.0

4. Conclusion

Traditional sources of information are still dominant in the study area, pomegranate growers tends to depend on self-experience, seeks to get advice from neighbor/friend, family members or other farmers. Not satisfactory but somehow there is change in information seeking behavior of the growers, that they are now also moving towards more modern information sources like representative of pesticide or fertilizer companies, public extension agents, TV, internet etc. Growers are not just dependent on single source of information; a mix of information sources is being used by farmers for farm operations.

There is need to provide more advisory and consultancy services to growers so that they can compete and meet the standard and quality of product demanded in the market. Public extension and advisory services should be demand-driven and product focused. Among the problems mentioned by the farmer are the high prices of inputs and marketing problems are the first two problems. It is necessary to work towards solution. Especially marketing problems of the growers can be solved by making cooperatives which will benefit and protect small farmers too. Pomegranate processing and storage facilities should be established in areas where production is intense, in this way the supply can be spread over the year.

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