

## **THE ANALYSIS OF CHERRY PRODUCTION AND TRADE IN TURKEY: THE CASE OF ULUBORLU DISTRICT**

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### **Abstract**

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More than half of the fresh fruit and vegetable exports are citrus fruits in Turkey. West Mediterranean Region has a considerable share in fruit production, which is like apple, orange, banana, carob, loquat and cherry are the most prominent fruits regarding their share in Turkey's production. Isparta province has a share of 5.2 per cent in cherry productions in Turkey and 28.8 per cent of it comes from Uluborlu District of Isparta province. In this study, marketing and foreign trade of and problems in cherry production in Uluborlu district were determined and point of view of producers in terms of cherry exportation were found out by using survey technique. According to results, cherry in Uluborlu district has a higher longevity than other varieties draws the attention of exporters, producers are highly dependent upon exporters. Producers do not have any other choice than personally selling their products to the exporters. 50 per cent of cherry produced in Uluborlu district is exported and the district meets 35 per cent of cherry export of Turkey. Research results suggest that extension services provided by public and private organizations are inadequate for Uluborlu's cherry producers to access sources of knowledge. Therefore, extension studies should be conducted.

**Key words:** Cherry, Cherry Exportation, Isparta

### **Introduction**

Agricultural sector has a great importance for Turkey as it meets the nutritional needs of the country, contributes to employment, meets the raw material requirements of industrial sector and has influences on foreign trade. West Mediterranean Region has quite convenient conditions for agricultural production, considering its geographical position, fertile lands, proper climatic conditions, sufficient water resources, proximity to large markets and competitive labour force (Anonymous, 2011). Fresh fruits and vegetable production in Turkey also has important in the world thanks to the diversity of conditions it possesses. Additionally, fresh fruit and vegetable sector has a significant share in the agricultural production of our country. It is also important in terms of its contribution to national income, the employment it creates and agricultural products exports.

More than half of the fresh fruit and vegetable exports are citrus fruits. Generally, the major factor determining of fruit production is demand. This demand is local or from foreign countries as well as the consumption of these products in fresh or processed form changes the mode and structure of production. Additionally, ecological factors have a significant influence on the taste and aroma of the fruit type. West Mediterranean Region in Turkey has a considerable share in fruit production, which is like apple, orange, banana, carob, loquat and cherry are the most prominent fruits regarding their share in Turkey's production. There is transformation from crop field to fruit and vegetable in Isparta province (Yilmaz et al., 2006). Isparta province ranks at the top in apple and cherry production and Antalya does the same in orange, banana, and carob and loquat production.

More than half of the fresh fruit and vegetable exports are citrus fruits. Approximately 70 per cent of this share

consists of lemon and tangerine products. Citrus export is followed by cherry, grape, peach, apple and melon exports. In many countries, the increase in cherry production and high productivity throughout the year are accompanied by important developments for cherry trade. Maritime transport of cherry in “controlled atmosphere” packages has a great influence on the increase of cherry production. By this way, cherry can be exported to distant countries and the trade of the product increases. In addition, the high demand even in winter months due to the tendency of consumers to consume cherry in cold months unlike fruits with hard seed such as peach and nectarine in another important factor (Anonymous, 2008).

The reason for profitability of cherry production is that it is an exported product. Particularly, exported cherry products generate fair returns. Price of the product to be exported is quite high compared to the domestic market. Advertisement and promotion campaigns held by cherry exporters also play an important role on the high potential of cherry export. The most significant certificate in export is Globalgap. Hundreds of cherry varieties are cultivated in Turkey. However, the most exported variety is “Ziraat 900”, developed by Turkish agricultural engineers and known as “Turkish Cherry” in the world. This variety constitutes 90 per cent of our cherry exports. Production of this variety, which has high quality and is for fresh consumption, is about 50-70 thousand tons. Considering all cherry varieties cultivated in our country, the amount of production may seem high. However, the amount of production of exportable cherry is limited. It is essential to support cherry exports by increasing production with “Ziraat 0900” and other early and late cherry varieties in the near future as well as with seedlings produced on dwarf and semi-dwarf rootstocks.

According to literatures, one of the major reasons for the recent increase in foreign trade is that exporting companies has adapted the practice of making decisions on foreign currencies rather than Turkish Lira in the domestic production and pricing process, thus leading to changes in export pricing behaviour and (depending on floating exchange rate and implicit inflation targeting regimes) exchange rate dynamics. The increase in Turkey’s fresh fruit and vegetable exports between 2000 and 2005 may be attributed to these factors (Aldemir, 2006). The most intense cheery harvest in our country is in late June. Higher prices are paid for early cherries harvested in late May and early June because purchasers are ready to pay higher prices because cherry supply is low. Similarly, there is a tendency to pay higher prices for cherries harvested in

late July and early August. Thus, early or late harvesting is an important concept in cherry production. In order to increase production and enhance export figures, it is required to cultivate early or late varieties. Turkey has great advantages in terms of factors such as long harvesting period and long sunshine duration and has a great production potential. Although the use of pesticide in sweet cherry production per hectare in the Isparta province was 5.36 times higher than that of Turkey’s average, increasing the environmental risk problem (Demircan et al., 2006).

## **Cherry Production in the World**

Among major countries producing cherry in the world, Turkey ranks the first both in the northern hemisphere and in the world with 417 thousand tons of production in 2010, corresponding to 20.3 per cent of world cherry production. The U.S. with 284 thousand tons of production and 13.8 per cent share and Iran with 243 thousand tons of production and 11.8 per cent follow it. It is obvious that share of Turkey in the last five years is around 20 per cent. In addition, Turkey is leader country in terms of volume of cherry production in the World (Table 1). Owing to the temperate zone it is located in and its geographical advantages, Turkey is a country that has appropriate conditions for cherry production. If figures of cherry production in Turkey by years are examined, it can be seen that there has been a continuous increase in production since 2004. The increase in production in the last four years is 30 per cent. Proper weather conditions as well as the increase in the interest of cultivators towards cherry were influential on this increase. Although 2007 witnessed drought, production was more than expected because the transition from spring to summer was not harsh. However, because quality could not be maintained along with the increase in production, this increase did not bring higher exports and Turkey could not meet the demands of importer countries sufficiently (Anonymous, 2008).

Table 2 indicates the production amounts and shares of major provinces of Turkey producing cherry in total production. According to production statistics for last five years, Izmir province has a share of 10.3 per cent in total production of Turkey amounting to 418 thousand tons, whereas Isparta province has an increasing trend in period investigated, and share of Isparta for 2010 is 5.2 per cent. 28.8 per cent of cherry production in Isparta province is carried out in the Uluborlu district.

The majority of cherry production in Turkey is sold in domestic market as fresh and used in the processing in-

dustry. Cherry importation has been seen for only some years and as symbolic quantities. There are fluctuations in the cherry export by years. Table 3 shows the distribution of exportation of Turkey by countries in 2009. As it seen in Table 3, the leading country is Germany with \$51 950 974. Bulgaria, Russia and Italy follow it respectively.

### Purpose of the Study

Main purpose of the study is to determine the marketing and foreign trade structure of and problems faced in cherry production in Uluborlu district of Isparta province, may be summarized as follows:

- To determine the marketing problems of cherry produced in Uluborlu district, Isparta province for export markets,

**Table 3**  
Cherry exportation of Turkey by countries in 2009

Countries	Value (\$)
Germany	51 950 974
Bulgaria	25 033 816
Russia	21 113 477
Italy	10 433 156
UK	9 931 749
Holland	8 372 274
Belgium	6 475 676
Sweden	2 758 466
Norverge	2 173 917
Denmark	2 003 805

Source: <http://www.tuik.gov.tr> Access Time: 15.11.2012

**Table 1**  
Changes in the cherry production in the world

Countries	Production, tons					%
	2006	2007	2008	2009	2010	2010
World	1871616	1961852	1836312	2210304	2060222	100.0
Turkey	310254	398141	338361	417694	417905	20.3
USA	266349	281862	225073	390000	284130	13.8
Iran	225000	200000	198768	225000	242663	11.8
Italy	110910	106189	134407	125900	115476	5.6
Spain	91672	75738	62900	90000	84786	4.1
Uzbekistan	53605	55000	61000	67000	75000	3.6
Ukraine	48900	68200	74700	53000	73000	3.5
Romania	104791	65163	67664	67874	70290	3.4
Russia	50000	100000	63000	69000	66700	3.2
Chile	40000	60000	60000	56000	59000	2.9

Source: [www.fao.org](http://www.fao.org) Access Time: 15.11.2012

**Table 2**  
Changes in cherry production by province in Turkey

Provinces	Production, tons					%
	2006	2007	2008	2009	2010	2010
Turkey	310254	398141	338361	417694	417905	100.0
İzmir	53163	62870	31940	50884	43100	10.3
Afyon	18434	43899	10385	35224	37083	8.9
Manisa	32368	35491	22968	39844	28954	6.9
Konya	18744	28135	18703	28442	27570	6.6
Isparta	13983	16587	16854	20605	21885	5.2
Amasya	13353	18089	24146	26745	21352	5.1
Bursa	17622	24392	30577	28882	20148	4.8
Mersin	6909	9637	10419	11337	17037	4.1
Denizli	8293	16075	6838	15520	16293	3.9
Sakarya	22048	10651	14593	12435	11418	2.7

Source: <http://www.tuik.gov.tr> Access Time: 15.11.2012

- To find out the producers’ point of view towards exportation,
- To ask certain the problems of cherry producers and offer solutions for them.

### Material and Methods

The basis of this study is the data obtained from interviews conducted face to face with cherry producers in Uluborlu district, Isparta (particularly producers for export markets). Secondary data regarding the subject were derived from the statistical data of organizations such as Provincial/Sub-Provincial Directorates of Agriculture, TUIK (Turkish Statistical Institute) and FAO (Food and Agriculture Organisation of United Nations). Furthermore, national and international studies related to the subject were made use of.

While determining the number of questionnaires, the number of producers to whom the questionnaires would be applied was determined according to Proportional Sampling Method taking into account the total number of cherry producers in Uluborlu district of Isparta. Sampling volume was calculated as in the following formula according to the ratio of those that are known or estimated to bear a certain characteristic among a finite population (Miran, 2003).

$$n = \frac{N * p * (1 - p)}{(N - 1) * \sigma_p^2 + p * (1 - p)}$$

where:

- n: Sample size,
  - N: Number of farms in the population,
  - $\delta_p^2$ : Variance of the proportion,
  - r: Deviation from the mean
- p = proportion of the number of farms to the population

According to the formula, sample size was determined to be 50. Since one of the purposes of this study was to compare the cherry farms according to farm size, farms were classified into three groups according to farm size of cherry orchards. Group I consists of farms that have 1-10 da, whereas the farms in Group II have 11-20 da and those in Group III have more than 21 da. Percentages of groups by number of farms are 28 per cent (14 farms), 44 per cent (22 farms) and 28 per cent (14 farms), respectively.

### Results and Discussion

Based on data obtained from technical personnel in the Agricultural Administration in Uluborlu district and from the records of cherry farms, five villages were selected as study areas.

Distribution of questionnaires conducted within the scope of the study according to villages and districts in Isparta Province. 80 per cent of the investigated farms are in the villages that are subordinate to the centre village, whereas 10 per cent are in the village of Ileydagi. It is known that cherry production in the Uluborlu district is generally carried out in these villages (Figure 1).

When the asked to farmers about their educational background. It is found that 64 per cent of producers to whom the questionnaires were applied are primary school graduates. It is found that only one farmer in Group III graduated from university. It can be indicated that, educational level of cherry farmers found very low.

According to survey results, average size of fruit orchard increase by group sizes. Average fruit farm size were found 2.5 da which are 1.0 da for Group I, 1.2 da for Group II and 4.9 da for Group III respectively. While average size of cherry orchards was 3.2 da, it was 0.3 da for Group I, 1.0 da for Group II and 1.9 da for Group III respectively (Figure 2).

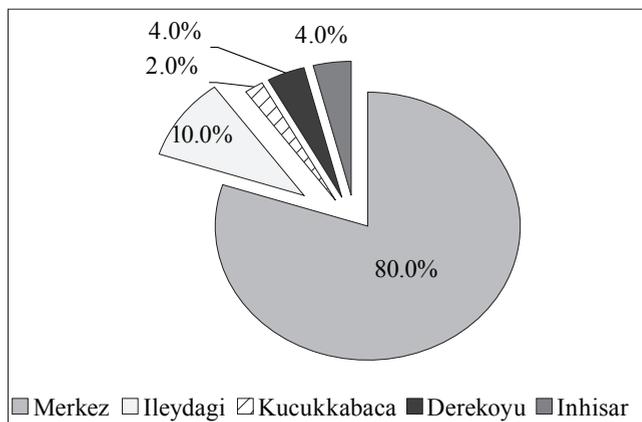


Fig. 1. Distribution of surveys by villages, %

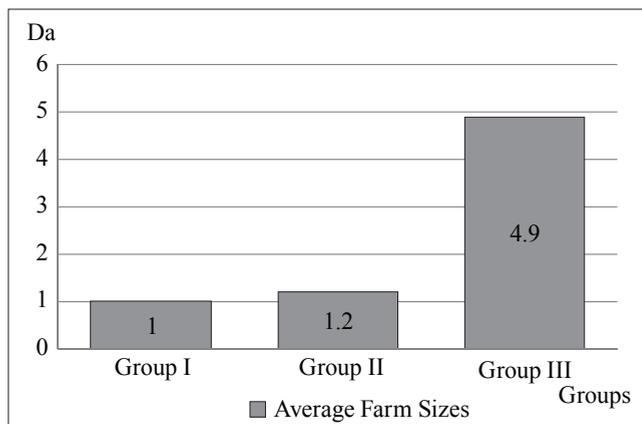


Fig. 2. Average farm size by groups

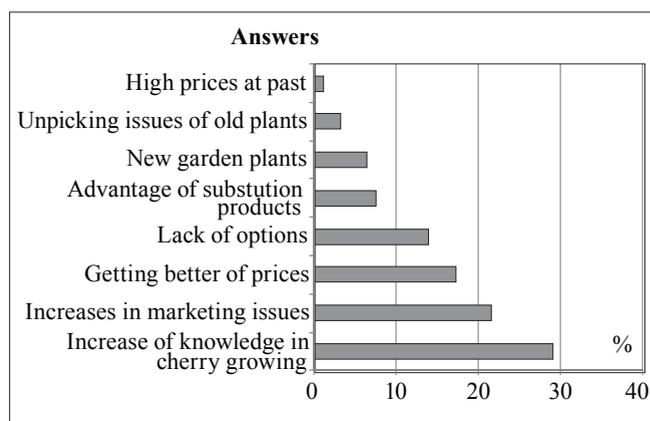
Parallel to farm size, when the average number of trees increases as the farms groups get larger farm sizes increases, sizes of cherry farms increase as well. This value was 26.6 in Group III, whereas it is 4.0 in Group I. Average numbers of cherry trees possessed by the farms are shows that farms in Group I have averagely 52 trees, whereas those in Group III have averagely 483 trees.

According to survey results, share of cherry activity in total income was 53.3 which 35 per cent for Group I, 57.7 for Group II and 67.3 for Group III. It shows that when size of farms increase, share of income by cherry activity increase as well.

For the answer of question that producers have any other income apart from cherry production indicate that as farms groups get larger, the numbers of farms with non-agricultural income decreases, which may lead to the interpretation those small scale farms, are not able to survive merely with cherry production. Survey results show that non-operating incomes are pensions and revenues obtained from self-employment and civil service.

Answers given by farms whether they have recently observed any increase in cherry production is indicated that 66 per cent of producers emphasized a significant increase in the recent years. When the asked the reasons for this increase in cherry production, a considerable part of producers expressed as their knowledge on cultivation increased (29.1%) but marketing problems escalated as well (21.5%) (Figure 3).

When the asked whether they were pleased with the sale prices of cherry, it is determined that share of those who are not satisfied decreases as the farms groups get larger. That proves that there is an inverse relationship between the farm size and satisfaction from the cherry price.



**Fig. 3. Producer opinions on increases in cherry production**

When producers were asked whether they would think of increasing the number of their trees, 72 per cent expressed that they would think of adding new trees to their existing capital if convenient conditions arose.

According to survey results on the ways to cherry usage, 90 per cent of the producers make use of the cherry in fresh form. In the surveys conducted, it was found that the cherry was used also by being dried or making vinegar from it. Answers by producers to the question asking what their sources of knowledge were while carrying out cherry production are given in Table 4. Accordingly, producers expressed that their major source of knowledge was leading cultivators (86%). Moreover, TV-radio (80%), friends, and relatives (80%) are among the answers given.

Producers were asked how they assessed their level of knowledge regarding cherry production. 42 per cent of producers expressed that their level of knowledge was sufficient and 32 per cent expressed that it was sufficient. That is, 74 per cent of producers assess their level of knowledge sufficient (Figure 4).

According to answers on membership status of producers in producer associations, accordingly, 64 per cent of producers who participated in the questionnaire stated that they are member of a producer association. This ratio is parallel to Turkey average ratio.

Answers received when producers were asked whether they had any certification are given in Figure 5. Accordingly, it was found that half of the producers had Globalgap certificate because cherry production for export markets is widespread in the region. When producers were asked whether they had agricultural insurance or not, 50% gave

**Table 4**  
**Information sources of producers**

	Quantity	%
Research Institutions	3	1.1
Books	19	7.0
Ministry of Agriculture	32	11.8
Universities	5	1.8
TV-Radios	40	14.7
Private Sector	30	11.0
Fairs	29	10.7
Newspapers	22	8.1
Leader farmers	43	15.8
Friend and relatives	40	14.7
Internet	8	2.9
Others	1	0.4
Total	272	100.0

an affirmative response. Answers received when producers were asked the major problems they faced in exporting cherry are shown in Table 5.

Answers given by the producers, to the question asking the ways they sell cherry products, nearly half of the producers (46.2%) responded that they sold their products in cash. The percentage of farms selling on account is 24.6 per cent and those who stated that their sales were on mixed terms have 20 per cent approximately.

Answers received when producers were asked what kind of activities they had that could be labelled as effort for production presentable for export markets are given in Figure 6. Accordingly, producers are mostly engaged in crating-sizing (27.8%), enhancing quality (27.8%) and cultivating the right cherry varieties (26.1%).

When producers were asked whether any activity was carried out to promote Uluborlu Cherry, 52 per cent of pro-

ducers responded that no promotion activity was carried out. Those who stated that no promotional activity was carried out accounted for the reason for this non-performance as insufficient personal capabilities (39.3%) and 17.9 per cent stated that the municipality of Uluborlu already engaged in promotional activities. Those who stated that promotional activities were carried out responded that they promoted the product in different cities (34.6%) and the municipality organized a festival (23.1%).

When producers participated in the questionnaire was asked whether their level of knowledge on products alternative to cherry in the region was sufficient or not, more than half of them (54%) stated that they had sufficient information. Answers given when they were asked whether they had adequate information regarding the market status of cherry are shown that 51 per cent of producers think that they have sufficient information, whereas 38.8 per cent think they have not.

In this study, producers were asked their expectations from the government concerning the production, marketing and export of cherry and the answers received are

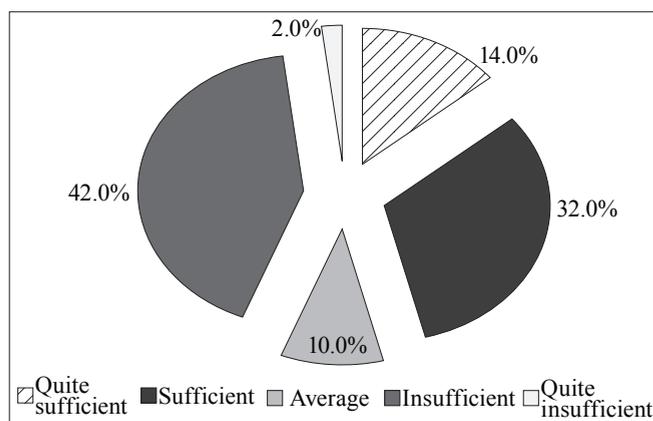


Fig. 4. Producer opinions on self sufficiency in cherry production

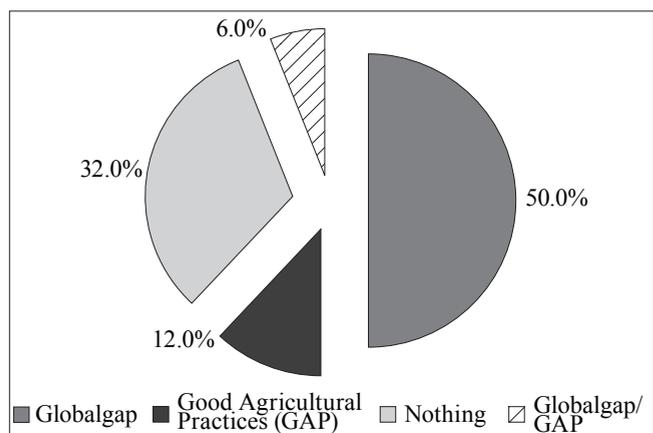


Fig. 5. Having a certificate of producers on cherry production

Table 5 Major problems in exportation faced

	Quantity	%
No alternative except exportation	50	50.0
No movement with organized	50	50.0
Disorder in production	46	46.0
New Stategies	36	36.0
New techniques	34	34.0
Residual issue	13	13.0
Calibration	1	1.0
Total	230	100.0

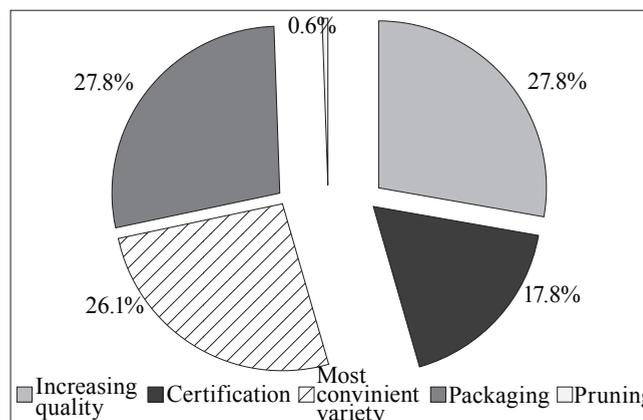


Fig. 6. Production efforts for exportation

grouped and indicated on Figure 7. It was determined that the most significant expectation was government subsidy for export of cherry since the cherry production in Uluborlu is carried out predominantly for export markets. Accordingly, 35 per cent thinks that producers should be supported, whereas 24 per cent that production should be supported and 19 per cent that export should be supported. When producers were asked their expectations from universities, they responded that they had a strong demand for courses from universities that would enhance the knowledge of cultivators. According to research results, those who think that cultivators should be instructed are 44 per cent and those who think that the university studies should be increased are 7 per cent. This is one of the findings that support the view that universities and producers need to have a closer relationship (Figure 8).

## Conclusions

Cherry production is an important production activity for the Turkish Economy and particularly of Uluborlu, Isparta. Particularly with the proliferation of the production of varieties for export markets and the improvement of marketing organization for exportation in the recent years, there has been a considerable increase in the foreign demand for the cherry produced in Uluborlu and exported to foreign markets.

Nevertheless, producers have various problems particularly with respect to export. This study consists of the results of questionnaires conducted with 50 producers in an attempt to determine the problems encountered in cherry production for export markets and offer solutions for them. So, the following conclusions can be made:

- Cherry is a product that has a high export contribution to Turkey. It is one of the important products of the region. Turkey ranks the first in the world in cherry production and Mediterranean Region carries out 15 per cent of Turkey's production. The variety known as "Ziraat 0900", "Napoleon" or "Bing Cherry" is preferred because it can be stored for long time periods, has a fine aroma and succulent quality and needs less pesticides compared to cherries produced in other countries. Although it does not rank the first in the cherry production of Isparta, it has the best quality among its rivals.
- The fact that Uluborlu cherry has a higher longevity than other varieties draws the attention of exporters.
- Cherry production has escalated in the recent years due to the former price advantage. This increase has also brought with it some complaints. Most of the producers have been complaining about the prices in the recent

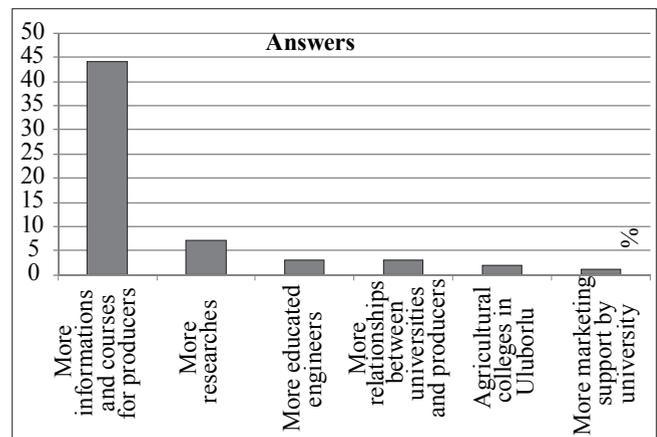


Fig. 8. Producer expectations from universities

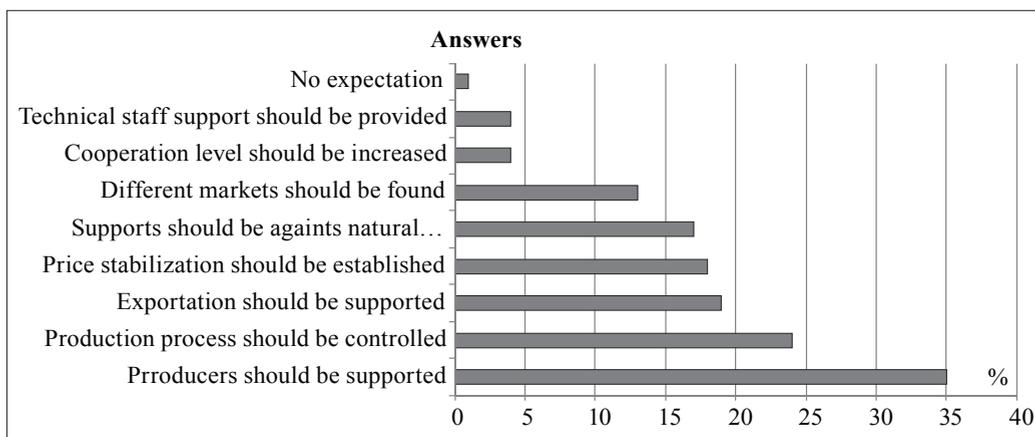


Fig. 7. Producer expectations from government

years and demanding support from the government regarding this matter.

- Producers do not have full knowledge with regard to branding. Although producers call their products Uluborlu cherry, this name is still not a brand outside the town. Efforts for this purpose are of great importance for enhancing the recognition of Uluborlu cherry.
- 50 per cent of cherry produced in Uluborlu is exported and the district meets 35 per cent of cherry export of Turkey. Producers need to be organized in order to put to good use the cherry that is not exported.
- It is a significant advantage for the producers in the region that the Faculty of Agriculture of Süleyman Demirel University is located within the province of Isparta in terms of being close to a source of knowledge. Research results, however, indicate that producer-university relationship has not developed sufficiently. It is essential to engage in studies and projects that aim to enhance cooperation.
- Research results suggest that extension services provided by public and private organizations are inadequate for Uluborlu's cherry producers to access sources of knowledge. Therefore, extension studies should be conducted.
- Measures should be taken in order to overcome the con-

fidence problem of producers regarding organizing.

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