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PRODUCTION POTENTIAL OF FRUITS GROWN ON KARS PROVINCE

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Abstract: *In every province of Turkey more or less fruit species and varieties are grown. One of the most important factors limiting the fruit growing of Kars province of Eastern Turkey. Four fruit species are grown in Kars and their name are walnut, apple, plum and apricot. Considering the total fruit production of Kars districts, Kağızman and Sarıkamış are 6.841 and 1.085 tons of fruit productions, respectively. No fruit production has the other districts. One of the most important reasons for not cultivating fruit species and varieties in the other districts of Kars province is the ecological conditions called climate and soil properties. In this study, through presenting the existing status of the fruit production potential of Kars province, it was aimed to increase the awareness and set light to decision makers.*

Key words*: Kars, Fruit production, development opportunities.*

1. Introduction

The production of plants is healthier supply of raw materials to the industry and some crops are subject to export is an important production activity. Fruits have effects on human health [1]. Consumption of fruits and vegetables has been strongly associated with reduced risk of cardiovascular disease, cancer, diabetes and age-related functional decline [2]. Therefore, production of a lot of fruits and many other plants is of great importance in the world because of human nutrition, raw material supply for industry and foreign trade [3, 4].

Anatolia, as a country possessing different climates and lying in a passageway between the gene centers named the Caucasian and the Mediterranean, bears many fruit species [5]. In this context, some of the fruits known as apricot, walnut and apple have been traditionally and/or modernly produced and consumed for centuries.

Turkey has a quite large potential regarding fruit species and production in the world [6]. and has favourable ecological conditions for growing many fruit species and cultivars [7]. In this context, Anatolia is a gene centre for many fruit species such as pistachios, figs, hazelnuts, almonds, apricots, walnuts, pomegranates and apples. Many fruit species were grown in Anatoliaa few thousand years ago [8]. However, Kars province has four fruit species grown generally, which are walnut, apple, plum

and apricot [9]. The greatest reason for the small number of fruit species that grow and produce stems from the ecological conditions of this province.

Kars province has a severe high plateau climate. This province is under the influence of the high-pressure center of Siberia. Winter lasts seven months. Snow is high. Snow is close to 50 days in the sun and the ground remains covered with snow for 100 days. The spring and autumn seasons are short enough to be tried. The annual amount of rainfall is 528 mm in some places and 252 mm in some places [10].

Kars province is mentioned with its famous Beylerbeyi palace (Fig. 1) and Sarıkamış ski resort (Fig. 2) in the world. In this study, through presenting the existing status of the fruit production potential of Kars province, it was aimed to increase the awareness and set light to decision makers in future plans for making use of the existing fruit potential.

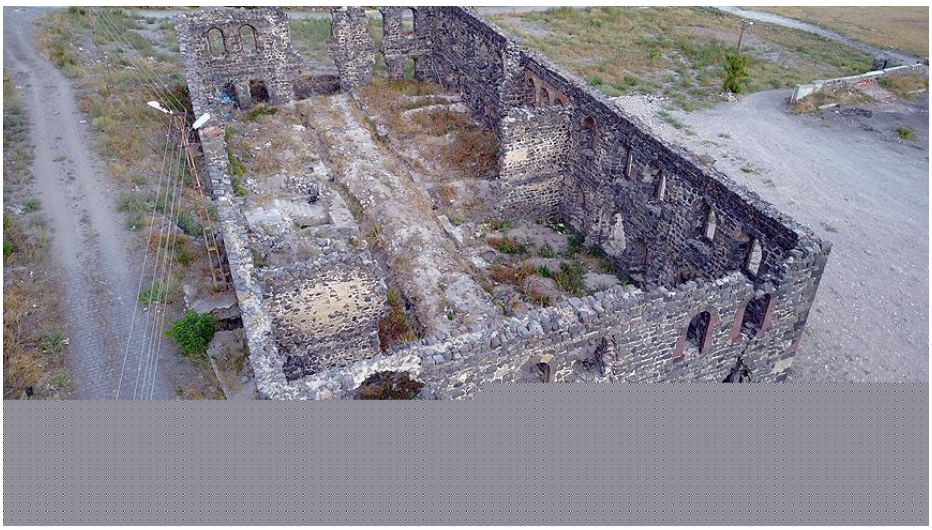

Fig. 1. Beylerbeyi Palace [11]

Fig. 2. Sarıkamış Ski Resort [12]

2. Fruit Production Potential of Kars Province

Kars province of Turkey map and the districts's map of this province were given Fig. 3.and Fig. 4, respectively. Our country have 237.625.723 decares of area of agricultural land and 33.292.166 decares of the area for fruits and the beverage-spice [9]. According to the year of 2016, Kars province has 7.926 tons of fruit potential production, 112.006 of number of fruitful trees, 33.667 of number of unfruitful trees and 145.673 of total number of trees [9] (Table 1). The fruits's name grown in Kars are apple, walnut, pear, plum and apricot. Although fruit production have Kağızman and Eleşkirt districts, No fruit production has the others. Therefore, this province is suitable for the cultivation of some fruit species and varieties.

Fig. 3. Kars Map in Turkey [13]

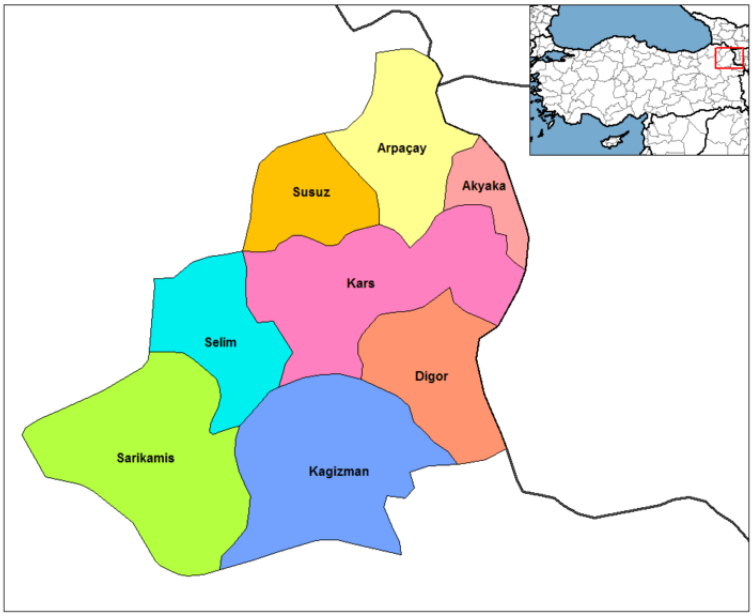

Fig. 4. Kars Districts's Map (14]

Table 1. Kars province's fruit production ([9]

District	Area covered by bulk fruit (decare)	Production (ton)	Number of fruitful trees	Number of unfruitful trees	Total number of trees	District
Walnut	684	82	57	1.440	6.705	8.145
Apple	1.816	1.330	69	19.271	5.787	25.058
Plum	6	1	67	15	10	25
Apricot	6.382	6.513	71	91.280	21.165	112.445
TOTAL	8.888	7.926		112.006	33.667	145.673

3. Fruit Potential Production of Kağızman District

Kağızman district has 6.841 tons of fruit production, 101.401 of number of fruitful trees, 29.107 of number of unfruitful trees and 130.508 of total number of trees. The highest and lowest fruit production in Sarıkamış district were obtained from apricot with 6.321 tons and from walnut with 57 tons, respectively (Table 2). In addition, this district has 463 tons of apple [9]. According to these information, Kağızman district is suitable for the cultivation of apricot, apple and walnut species and varieties.

4. Fruit Potential Production of Sarıkamış District

Sarıkamış district has 1.085 tons of fruit production, 10.605 of number of fruitful trees, 4.560 of number of unfruitful trees and 15.165 of total number of trees. The highest and lowest fruit production in Sarıkamış district were obtained from apple with 867 tons and from plum with 1 ton, respectively (Table 2). In addition, this district has 192 tons of apricot and 25 tons of walnut [9]. According to these information, Sarıkamış district is suitable for the cultivation of apricot, apple, walnut and plum species and varieties.

5. Fruit production potential of the other districts

Kars province has eight districts named Akyaka, Arpaçay, Digor, Kağızman, Sarıkamış, Selim, Susuz and Center [15]. Although fruit production have Kağızman and Sarıkamış districts, No fruit production according to TSI [9] has the others. Therefore, the development of fruit production in Sarıkamış and Kağızman districts will give more beneficial results. But, It should be applied to studies of adaptation to various fruit species in some microclimatic areas, taking into consideration the ecological characteristics of other districts.

Table 2. Fruit potential production of Kars districts [9]

District and fruit name	Area covered by bulk fruit (ha)	Production (ton)	Average yield per tree (kg)	Number of fruitful trees	Number of unfruitful trees	Total number of trees
Walnut	650	57	50	1.150	6.555	7.705
Apple	923	463	43	10.671	2.387	13.058
Apricot	6.200	6.321	71	89.580	20.165	109.745
KAĞIZMAN	**7773**	**6.841**		**101.401**	**29.107**	**130.508**
Walnut	34	25	86	290	150	440
Almond	893	867	101	8.600	3.400	12.000
Plum	6	1	67	15	10	25
Apricot	182	192	113	1.700	1.000	2.700
SARIKAMIŞ	**1.115**	**1.085**	**367**	**10.605**	**4.560**	**15.165**

6. Development Opportunities of Fruit Production Potential of Kars Province

One of the most important factors limiting the fruit growing of Kars province of East Anatolia Region of Turkey are the ecological conditions. However, the fruit species's grown in this province are apple, plum, apricot and walnut. It is possible to increase the production of these fruit species. It should be applied to studies of adaptation to various fruit species in some microclimatic areas of the ecological characteristics of other districts. At that time, fruit production in Kars province could be further improved.

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