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Research Article

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Can medical and aromatic plants be an alternative to hazelnut in the Western Black Sea Region?

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Abstract

In this study, it was investigated whether medicinal and aromatic plants can be an alternative to hazelnut cultivation, by direct interview method on 154 people living in the Western Black Sea Region (Düzce, Sakarya, Zonguldak and Bartın), which produces hazelnut by 27% of Turkey. 154 students were surveyed by using Neyman method. Likert scale was used to measure whether the medicinal and aromatic plants could be alternative to hazelnuts and the results were evaluated by SPSS method. In our study, 154 people with different professions (farmers, civil servants, workers, retired, students and unemployed), different educational levels (literacy, primary education, secondary education, high school and university) and different income levels were included in the survey. As a result of the study, 97.4% (including 92.2% of those who grow hazelnuts) want to grow medicinal and aromatic plants as an alternative to hazelnuts. 97.4% of medicinal and aromatic plants are considering to grow linden and black sesame. There are also people, at a rate of 81.8%, who think that medicinal and aromatic plants are organic and 66.2% of them also think that organic certification should be obtained for cultivation. 24.7% of them use medicinal and aromatic plants as an alternative to medicines when they are sick. As a result, medicinal and aromatic plants are important in our lives as an alternative to medicines. Considering the importance of alternative plants in the future, it is seen that in the Western Black Sea Region, even if at limited number, there is a tendency towards medical and aromatic plant farming besides hazelnut farming.

Keywords: Soil, Physical properties, Bade, Yobe

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Introduction

Turkey is the world's top hazelnut producer country, around 70% of world hazelnut production is carried out by our country. Our country has favorable ecological conditions for hazelnut production in Black Sea region. Licensed production areas that have been changed many times within the framework of hazelnut production in our country in accordance with the Law numbered 2844 on the Plan of Hazelnut Production and Determination of Planting Areas and have been restricted to 16 provinces with the last Decree of the Council of Ministers numbered 2014/7253. Four of these provinces are located in the western Black Sea region. According to the data of the Turkish Statistical Institute 2015, approximately 27% of hazelnut production is provided from the Western Black Sea region. Hazelnut is one of the rare products that are identified with the lifestyle of certain regions and geographical areas in the world and that make deep traces on the culture, social and economic structure of the people living in those regions. [Anonymous, 2016] Hazelnut is the most prominent agricultural product within the provinces of Düzce and neighboring provinces Sakarya, Kocaeli, Bolu, Zonguldak, Bartın and Kastamonu.

In this region, hazelnut farming is carried out in the land of approximately 300.000 decares and nearly 3 million farmers ' families are living through hazelnut farming (Anonymous, 2011).

It is not possible to fully define the medicinal plants. Today, the term "medicinal" and "aromatic" plants are often used together. Medicinal and aromatic plants are plants used as medicines to prevent diseases, maintain health or heal diseases. While medicinal plants are found in areas such as nutrition, cosmetics, body care, incense or religious ceremonies, aromatic plants are used to give good fragrance and taste (Anonymous, 2005). Aromatic plants are also widely used in the food, cosmetics and perfumery industry. Turkey is one of the leading countries in the trade of medicinal and aromatic plants thanks to its geographical location, climate and plant diversity, agricultural potential, wide area. This importance of Turkey is due to the fact that many plants producing herbal products that constitute the input of plant drugs, plant chemicals, food and additives, cosmetics and perfumery industries settled in developed countries are located in the flora of our country. Therefore, these plants are mostly collected from nature and marketed. Medicinal and aromatic plants are mainly collected from Aegean, Marmara, Mediterranean, Eastern Black Sea and southeastern Anatolia regions (Bayram et al., 2010).

The agricultural industry has an important place in the economic and social structure of all countries, regardless of level of development.

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The agricultural sector, which is of strategic importance, such as producing the raw material necessary for human nutrition, also provides added value for the economy and create jobs for a large mass of the population in Turkey. The appropriate ecological conditions in Turkey and the rich flora allow the cultivation of many different agricultural products (Alkan, 2006).

While looking at the West Black Sea region, it shows us that although it provides a great source of income with hazelnuts, it can also lead to different plant breeding in terms of regional characteristics. Considering the interest of people in developing Turkey against medicinal and aromatic plants, examining the potential in the region and measuring the interest of the people of the region will shed light on us.

Materials and Methods

In this study, it was investigated whether medicinal and aromatic plants can be an alternative to hazelnut cultivation, by direct interview method on 154 people living in the Western Black Sea Region (Düzce, Sakarya, Zonguldak and Bartın), which produces hazelnut by 27% of Turkey. 154 people were surveyed by using Neyman method. Likert scale was used to measure whether the medicinal and aromatic plants could be alternative to hazelnuts and the results were evaluated by SPSS method. In our study, 154 people with different professions (farmers, civil servants, workers, retired, students and unemployed), different educational levels (literacy, primary education, secondary education, high school and university) and different income levels were included in the survey. The survey was conducted by experts and participants were provided with answers to all questions.

Surwey Questions and Answers

In our study, we tried to find an answer to the question of whether medicinal and aromatic plants can be an alternative to hazelnut with the survey conducted in 154 people on people of different ages, professions, education and income levels living in the western Black Sea region (Table 1-8).

While 41.6% of the respondents were 56-65 years, 26% were 46-56 years, 16.9% were 66-75 years, and 15.6% were 45 years. The average age is 54 (Table 1).

In our study, 67.5% of the respondents are farmers and 27.3% are retirees. In total, 5.2% of workers and civil servants were included in the survey. A large part of the pensioner retired from the agricultural sector. Civil servants and workers also help agricultural workers in their families (Table 2).

When we look at the educational status of the people who are mostly farmers and participated in our survey, we see that they are 74% primary school graduates. Only 2.6% are university graduates. The level of Education remains relatively low (Table 3).

While 58,4% of respondents provide a minimum wage level of income, those who earn more than 3000 TL constitute 2.6% of the total. Most of the respondents live on the starvation line (Table 4).

Although 81% of the people in the Western Black Sea region where we carry out our survey are primary and secondary school graduates, they still go to the medicines recommended by the doctor when they are sick. While 64.9% of the respondents prefer to use only medicines when they are sick, 6.5% of the respondents prefer only medicinal plants. 26 %of them use both medicine and medicinal plants. In addition to medicine use, they use medicinal plants as a substitute which are the products they consume as tea (Table 5).

When people who participated in the survey of hazelnut growing region were asked whether they grow medicinal plants, only 24.7% of them grow medicinal plants and this plant is only Linden as the answer received (Table 6).

A large proportion of respondents wants to cultivate a medicinal plant, and this rate is a fairly high rate of 97.4%. All those who want to cultivate a medicinal plant except for the linden growers, would like to grow a black sesame (Table 7).

In our survey conducted on 154 people, when asked whether the medical and aromatic plants are organic or not, 81,8% of 154 people have been deemed to think that medical plants are organic without the certificate is concerned (Table 8).

Conclusion

As a result of our study in the western Black Sea region, a large majority of the 154 people, at the average of age 54 and mostly of primary and secondary graduates, including those of 92.2% who are growing hazelnuts want to grow medicinal and aromatic plants as an alternative to hazelnuts at the rate of 97.4%. Although the Western Black Sea region has a wide range of plant cultivation in terms of climatic properties, they consider growing linden and black sesame at 97.4% of medicinal and aromatic plants. Since Linden is already a plant grown in the region, they think that growing is suitable for them. It is also their preference to grow the black sesame not only for reason of having more benefits as medicinal plant but also the fact that there is no marketing related problems of it. People who think that medicinal and aromatic plants are organic in 81.8% are also thinking that the organic certificate in farming should be obtained at 66.2%. 24.7% use medicinal and aromatic plants as alternatives to medicines when they are sick. One in three people who participated in our survey uses it considering that it can benefit from medicinal and aromatic plants in their lives. But even if they don't use it with a benefit match, they still have to put these plants in their lives in the form of tea or oil. Although the hazelnut plant comes from the ancestors and it is the source of income for the majority of the people living in the region, people who live in the region also wants to try and grow new plants. As a result, medicinal and aromatic plants are important as alternatives to medicines in our lives. Considering the importance of alternative plants in the future, there is a tendency towards medical and aromatic plant growing in Western Black Sea Region, even if it is at limited number comparing hazelnut farming.

Table 1. Distribution of the people by age

	#	%
26-35	6	3,9
36-45	18	11,7
46-55	40	26,0
56-65	64	41,6
66-75	26	16,9
Total	154	100

Table 2. Distribution of the people by job/profession

	#	%
Farmer	104	67,5
Civil Servant	6	3,9
Worker	2	1,3
Retired	42	27,3
Total	154	100

Table 3. Distribution of the people by education

	#	%
Literacy	6	3,9
Primary Education	114	74,0
Secondary Education	14	9,1
High School	16	10,4
University	4	2,6
Total	154	100

Table 4. Distribution of the people by income

	#	%
1-1000 TL	16	10,4
1001-2000 TL	90	58,4
2001-3000 TL	44	28,6
3001-4000 TL	2	1,3
4001 TL and over	2	1,3
Total	154	100

Table 5. Distribution of the people by use when they get sick

	#	%
Medicinal Plants	10	6,5
Medicines	100	64,9
Both	40	26,0
None	4	2,6
Total	154	100

Table 6. Distribution of the people by grow medicinal and aromatic plants

	#	%
Yes	38	24,7
No	116	75,3
Total	154	100

Table 7. Distribution of the people by use when they get sick like to grow medicinal and aromatic plants

	#	%
Yes	150	97,4
No	4	2,6
Total	154	100

Table 8. Distribution of the people by medicinal and aromatic plants organic

	#	%
Yes	126	81,8
No	28	18,2
Total	154	100

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