



Rize, Türkiye' de Organik Çay Tarımına Geçiş

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Özet

Çay üretimi Karadeniz Bölgesinin Gürcistan sınırından başlayarak Ordunun Fatsa ilçesine kadar olan alanlarda yapılmaktadır. Çay üretimi daha çok Rize, Ordu, Giresun, Trabzon ve Artvin illerinde yoğunlaşmaktadır. Gürcistan sınırından başlayarak Araklı ilçesine kadar olan bölgeler Türkiye de en uygun ve en fazla verim alınan alanlar olarak karşımıza çıkmaktadır. Çay bu bölgede yaşayan insanların en önemli geçim kaynağını oluşturmaktadır. Hemşin ilçesinde organik çay tarımına geçilmesi ve Rize de kademeli olarak organik çay tarımına geçilecek olması nedeniyle bu konu önemli hale gelmiştir. Bu çay alanlarında hangi organik gübrelerin nasıl kullanılacağı konusunda çalışmalar bulunmamaktadır. Ön sonuçlar 9 farklı lokasyonda toprak pH sınır 3.5 gibi bir değerden 4.5' a yükseltilebildiğini göstermiştir. Yeşil yaprak verimi tavsiye edilen kimyasal gübre uygulamalarına göre elde edilen verimlere yakın ya da üzerinde gerçekleştirilmiştir. Sunulan sonuçlar Türkiye de organik çay tarımına geçiş konusunda imkanlar ve potansiyel konusunda detaylı bilgiler vermektedir.

Anahtar kelimeler: *C. sinensis*, çay, organik çay, organik gübre

Determination Of Izmir Thyme Production Methods In Cumra Regio

Abstract

Tea production can be seen at the zone beginning at the Georgia border of the Black Sea region up to the Fatsa district of Ordu. Tea production areas are present foremostly in Rize, Ordu, Giresun, Trabzon and Artvin. These region represents the top zone tea production areas in the World. The region beginning from the Georgian border up the district Araklı represents the most suitable and primary high yielding tea plantation areas in Turkey. Tea is the most important income resource of people settled in this region. With the switch of the Hemşin district to organic tea production and with future plans to switch also in Rize gradually to organic tea production this have become important. There are no research displaying how to use which organic fertilizers in this tea plantation areas. Preliminary results showed that soil pH could be increased from values of 3.5 up to 4.5 in 9 different trial locations. Green leaf yield was approximately near or over the yield values compared with recommended chemical fertilizer applications. Presented results will give brief information about the possibilities for the potential switch to organic tea production in Turkey.

Keywords: *C. sinensis*, tea, organic tea, organic fertilizer

GİRİŞ

In the second half of the 20th century agriculture changed direction due to the effect of industrial revolution and green revolution. The aim in the Green Revolution was to increase yield obtained from a unit area to compensate the food need of the human population. The requested yield increase was obtained by intensive application of pesticides and fertilizers, but it was observed that with time applied pesticides and fertilizers showed a lot of negative effects especially for human health. Besides this environmental problems like the degeneration of the physical structure and nutritive balance of the soil, salinisation and desertification encountered. As a result of all this and other negative developments "Organic Agriculture" arised as an alternative production system [1].

Regarding tea (*Camellia sinensis* O. Kuntze) Turkey is one of the unique countries in the World. Tea production is located most in the equatorial or near the equatorial region on the World; considering this Turkey is one of the top regions were tea is cultivated. Because of snow at the winter period no economically important diseases and pests are existing in this regions. This means there are no agricultural pesticides

in Turkish tea, as tea growers do not use pesticides.

In 2006 ÇAYKUR initiated organic tea production in the Hemşin Valley in Rize and since 2007 we can see organic tea production statistics in the mentioned region. Further, ÇAYKUR and the government is planning to switch gradually to organic tea production in present tea plantations.

This review will discuss the present status and possibilities in Turkey and possible challenges with regard to switching to organic tea production.

Tea Production in Turkey

Although the tea business in Turkey is a relatively new activity compared with the other producer countries, tea cultivation and the industry have shown very important improvement in a short time. While the production of dried tea was below 25.000 tons in the 1950's, this figure reached significant quantities in recent years. Today, Turkey holds a significant place among the world's largest producer countries with a share of 3%. According to the Food and Agriculture Organization (FAO) statistics, Turkey ranks 8th place in the world production area of tea after China, India, Sri Lanka, Kenya, Vietnam, Indonesia and Myanmar (Table 1).

Table 1: Tea Production areas in the world

| Country | Tea Area (thousand ha) |
|-----------|------------------------|
| China | 2240 |
| India | 585 |
| Sri Lanka | 231 |
| Kenya | 218 |
| Vietnam | 119 |
| Indonesia | 117 |
| Myanmar | 86 |
| Turkey | 76 |

[2]

Regarding world tea production Turkey ranks at the 6th place in the world after China, India, Kenya and Sri Lanka (Table 2). In Turkey tea production is located in the NorthEast Black Sea Region (Fig. 1).

Table 2: Tea production in the world

| Country | Yield (tonnes) |
|-----------|----------------|
| China | 2.415 |
| India | 1.252 |
| Kenya | 473 |
| Sri Lanka | 349 |
| Turkey | 243 |

[2]

The tea plantations are distributed in the cities Artvin, Rize, Trabzon, Ordu and Giresun (Picture 1).

Fig. 1. Tea production areas at the Black Sea region

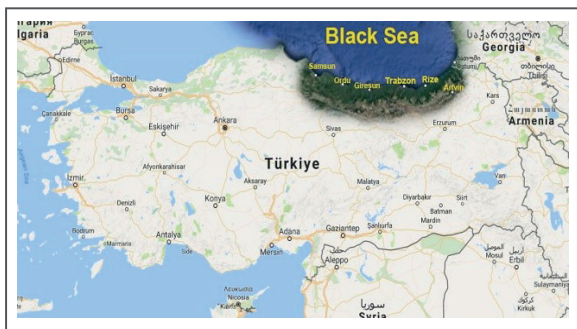


Table 3 shows the distribution of tea production areas and number of tea farmers according to related cities. The main tea production area is Rize with 65.96%, followed by Trabzon, Artvin, Giresun and Ordu. Parallely, the number of tea farmers are following the same ranking.

Table 3. Tea plantation area and number of farmers

| City | Tea Area (da) | % | Number of farmers | % |
|---------|---------------|-------|-------------------|-------|
| Rize | 574.135 | 65.96 | 131.443 | 61.81 |
| Trabzon | 165.982 | 20.01 | 51.222 | 24.08 |
| Artvin | 98.433 | 11.51 | 20.169 | 9.48 |
| Giresun | 20.844 | 2.51 | 9.814 | 4.61 |
| Ordu | 111 | 0.01 | 44 | 0.02 |
| Total | 829.505 | 100 | 212.692 | 100 |

[3]

Organic Tea History in Turkey

Parallel to the developments in the world ÇAYKUR initiated in 2003 studies to increase organic tea farming in our country. Within the context of organic tea farming Borçka/Artvin and Çamlıhemşin and Hemşin/Rize was chosen as organic tea production areas. In 2006 ÇAYKUR founded the “Organic Tea Farming Commission” to organize studies regarding organic tea farming and production and to determine a road map for organic tea. In 2006 “Farmer Briefing Meetings” were organized to inform them about the benefits and contributions of organic tea farming. In 2007 organic tea farming contract was signed with 135 farmers covering 37,8 ha to initiate the organic tea production project. As mentioned before Borçka Muratlı, Çamlıhemşin and Hemşin was chosen as organic tea production areas. Between this areas Hemşin was selected for following reasons: • a old center for population containing historical and natural beauties • it represents an closed basin •

surrounded totally by mountains and forests, • suitability of ecological conditions • high education level, possible easier acceptance of organic tea farming by local farmers • higher willing of local farmers • presence of organic honey and egg production in the region; a proportion of local farmers are familiar with organic farming • support local administratives and non governmental institutions • sufficient technical personal in related managements etc.

After involving the whole Hemşin district in the organic tea farming project; Muratlı/Artvin, the districts of Rize Çamlıhemşin and İkizdere, the Tunca district, Senoz basin in Çayeli district, higher altitudes of the districts Pazar and Ardeşen, a part of the Çağlayan basin in Fındıklı, two settlements in Of/Trabzon, two settlements in Rize center and 1 settlement in Kalkandere was included in organic tea farming. The selected regions display similar characteristics. These are: are rich in water resources, relatively young tea plantations, upper tea plantation areas, mean yield is low, tea plantations are surrounded by forests, absence of other agricultural practices, rich resources regarding running waters, low settlement and industrialisation, no air, water and soil pollution due to industrialisation, suitability for ecotourism, preservation of their historical tissue and presence of hot spring and baths. The agricultural land of the Hemşin district is surrounded by forests. This leads to a closed basin and its ecological conditions are suitable for organic tea farming.

Because of this reasons ÇAYKUR declared this region as ‘Organic Tea Farming Basin’ and all farmers were supported to tend towards organic tea farming. During Tea Purchase Campaign in 2008 processed in the Taşlıdere Tea Factory and 5.900 kg green tea was produced and saled as ‘Zümrüt Yeşil Çay’. After this developments a tea factory was built in the Hemşin district. It was opened in 2009 as “Hemşin Organic Tea Factory”. The tea plant needs higher nitrogen amounts for plant development. With the switch from an inorganic fertilizer containing 25% nitrogen to organic fertilizers with low nitrogen contents increases in yield arised. ÇAY-KUR has supported from the beginning of the organic tea farming project that all produced organic tea by farmers has to be purchased, no quota or limitations are given, The price has to be earlier payed compared with conventional tea.

Organic Tea Production in Turkey

Organic tea production increased from 378 da in 2007 up to 38.034 da in 2016. Also number of organic tea farmers increased from 135 in 2007 up to 11.786 in 2016 (Table 4).

Table 4. Organic tea production areas in Turkey

| Years | Number of farmers | Area (da) |
|-------|-------------------|-----------|
| 2007 | 135 | 378 |
| 2008 | 400 | 1.080 |
| 2009 | 1.434 | 3.558 |
| 2010 | 1.438 | 3.555 |
| 2011 | 1.448 | 3.557 |
| 2012 | 3.843 | 11.298 |
| 2013 | 9.758 | 28.768 |
| 2014 | 11.155 | 32.505 |
| 2015 | 11.224 | 34.665 |
| 2016 | 11.786 | 38.034 |

[3]

In Table 5 processed organic black and green tea amounts are given. The amount of bought wet tea, processed black and green tea and in total increased from 2009 up to 2016.

Table 5: Organic tea leaf production and produced tea amounts (tonnes)

| Years | Processed tea (tonnes) | | | Total |
|-------|-------------------------|-----------|-----------|-------|
| | Bought Wet tea (tonnes) | Black tea | Green tea | |
| 2009 | 361 | 58 | 5 | 61 |
| 2010 | 384 | 152 | 5 | 157 |
| 2011 | 1.743 | 313 | 13 | 326 |
| 2012 | 1.724 | 339 | 10 | 349 |
| 2013 | 1.72 | 353 | 9 | 362 |
| 2014 | 1.927 | 341 | 26 | 367 |
| 2015 | 7.381 | 1.328 | 21 | 1.349 |
| 2016 | 22.330 | 4.449 | 39 | 4.488 |

[3]

There is a remarkable increase in organic tea production in Turkey during the last decade. Organic black tea production increased more compared with organic tea production.

Scientific Work Regarding Tea at the Black Sea Region

In Turkey, most of the tea plantations were established using seeds; continuous seed propagation has produced populations with different yield and quality properties, reflecting wide genetic variation. Clonal selection studies were conducted in the Black Sea region and several promising tea clones such as 'Tuglali-10', 'Derepazari-7', and 'Pazar-20' have been identified [4]. Clones named Muradiye, Gündoğdu, Fener3, Enstitü1, Enstitü2, Hamzabey, Hayrat, Çayeli, Ardeşen, Fındıklı, Pazar and İyidere followed later. Basically clonal selection work was done by ÇAYKUR in this region. Molecular characterisation work [5-8] and the use of plant growth promoting bacteria in organic tea production were conducted [9-11].

Organic Fertilizer Studies

Due to the plan of ÇAYKUR expanding the organic tea production area collaboration of ÇAYKUR, Ministry of Agriculture, Food and Livestock begun. The primary aim was to find out the potential of organic fertilizers to be used in tea plantation areas.

A research study was conducted in 2017 using 21 different organic fertilizers and chemical fertilizer. These were compared in a randomized block design with three replications in 8 locations, Çamlı and Pınarlı/ Hopa, Fındıklı, Ardeşen, Pazar, Çayeli, Ortapazar and Of/Trabzon. 4 solid, 16 liquid and 1 solid + liquid mix fertilizer were used in this study. Each trial plot was depending on field structure 25-30 m² and three replications were used.

In this ongoing project leaves were collected at possible harvesting times and investigated regarding all components important for tea. Chosen samples will be processed for black tea. Also soil samples were taken before fertilizer application and after every harvest time to determine the changes in soil due to fertilizer application.

Basing on experimental statistics, only after 3 year results it can be possible to recommend any fertilizer for organic tea production in this region.

CONCLUSION

Turkish tea, to have the advantage of producing organic tea, is an important opportunity. The increasing importance of healthy consumption today can be treated as a chance for consumers in Europe and in the World as well as Turkish consumers. For this reason, all necessary efforts should be initiated to produce organic tea in tea gardens of Turkey as soon as possible. The industry must tackle the problem of quality for use advantage of organic tea as needed. The high quality of fresh tea harvested and good quality black tea processed will be given high price in the tea exchange and this will play an important role in the system. Organic tea meeting the high price in the market will eliminate the problem of competition about Turkish tea due to high costs. If organic tea production realized, the factories could pay a higher price to tea farmers and ask them to harvest higher quality fresh tea leaves [12].

ÇAYKUR is planning to switch to Organic tea production in all tea plantations in Rize and around. But the lack of information about the use and kind of organic fertilizers is still present. This will be cleared based on the results of the mentioned ongoing organic fertilizer trials.

The switch to organic tea production is an important issue on which ÇAYKUR, the government and the local recep tayyip Erdoğan University are working on. But the negative experience in the Hemşin Valley regarding organic fertilizer

is still present (we have to mention that in organic tea production areas şın Turkey, specially in the Hemşin Valley no organic fertilizer are in use)

Therefore in near future the farmers has to be educated intensively about the structure of organic tea production, the use of organic fertilizers and they have to be highlighted about future plans of ÇAYKUR and the Ministry of Agriculture, Food and Livestock.

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