

DEVELOPMENT OF SUNFLOWER PRODUCTION IN TURKEY

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ABSTRACT

The sunflower is the most important raw material of the oil sector among oilseeds produced in Turkey. Although adaptation areas of the sunflower that can be cultivated in dry or irrigated conditions almost in every region of Turkey are very large, cultivation areas have remained at the level of 500 000-600 000 hectares for many years. For this reason, it is necessary that support and incentives carried out should be increased in order to spread production in the potential areas after these areas are determined, yield should be increased, new species whose oil content is high should be developed, produced and spread. As a result, in order to enlarge cultivation areas of the sunflower, more areas, both dry and irrigated, should be opened to the sunflower agriculture through especially technical support and incentive of the government or the private sector.

Key words: Oilseeds, sunflower, cultivation

INTRODUCTION

The oilseeds which are among agricultural products can be counted as sunflower, cotton seed, soybean, rapeseed, safflower, groundnut, sesame and poppy (seed). However, the sunflower whose seed nearly %38-50 oil is obtained from among oil plants has considerable significance in the production and consumption of vegetable oil in Turkey.

The sunflower that is our traditional plant is the first thing that comes to mind in terms of oilseeds in Turkey. The sunflower which can be cultivated nearly in every region of Turkey and whose seeds include high rates of qualified oil is placed on the top in terms of cultivation areas of oil plants and amount of production. The sunflower meets the need of %68 of the production of oil plant in our country and %32 of the total use of oil (BYSD 2016).

In parallel to the rapidly increasing population in the world, the consumption of food stuffs and thus the consumption of vegetable oil is increasing day by day. In 2015, 527 million tonnes of oilseeds were produced in the world, and %7,6 of this consisted of the sunflower (USDA 2016). In Turkey, however, 3,2 million tonnes of oilseeds were produced in 2015, and %46 of this consisted of the sunflower. Our production of sunflower (for oil) which was 1 million tonnes in 2006 reached 1,5 million tones in 2015 with an increase by %50 in ten years (TUIK 2016). It can be said that this increase resulted from the increase in yield rather than cultivation areas. %50 of the production under discussion is made in Thrace-Marmara Region.

THE PRODUCTION OF SUNFLOWER IN TURKEY

Although adaptation areas of the sunflower that can be cultivated in dry or irrigated conditions almost in every region of our country are very large, cultivation areas have remained at the level of 500 000-600 000 hectares for many years.

There has not been much change in cultivation areas of sunflower (for oil) in Turkey for the last ten years. On the other hand, the amount of its production has increased from 1 million to 1,5 million owing to the increase in yield. 1,5 million tones of oil sunflower seeds were produced in the area of 569 000 ha in the season of 2015. The seed yield of the sunflower increased from 198 kg/da to 264 kg/da between 2006 and 2015 (Table 1).

Table 1. Area, Production and Yield of Sunflower for Oil in Turkey

Years	Area (ha)	Production (tons)	Yield (kg/da)
2006	510.000	1.010.000	198
2007	485.700	770.000	159
2008	510.000	900.387	177
2009	515.000	960.300	186
2010	551.400	1.170.000	212
2011	556.000	1.170.000	210
2012	504.616	1.200.000	238
2013	520.260	1.380.000	265
2014	552.465	1.480.000	268
2015	568.995	1.500.000	264

TUIK 2016

Nearly %50 of the production of sunflower for oil (754 000 tonnes) in Turkey is made in Thrace-Marmara Region. Tekirdag, Edirne, Konya, Kirklareli ve Adana cities are respectively those in which the production of sunflower is mostly made (TUIK 2016). Thrace Region is followed by Central Anatolia Region. In terms of not yield per unit area but the length of cultivation areas, Tekirdag is on the first rank in Turkey (Table 2). In this region, the sunflower is cultivated in dry conditions. On the other hand, the city that has the highest yield is Konya (457 kg/da). This difference of yield per decare results from irrigated farming in Konya region.

Table 2. Area, Production and Yield of Sunflower in Turkey Cities in 2015

Cities	Area (da)	Production (tons)	Yield (kg/da)	Percentage (%)
Tekirdag	1.284.677	267.012	208	17,8
Edirne	984.061	226.573	230	15,1
Konya	460.376	210.307	457	14,0
Kirklareli	733.520	188.998	258	12,6
Adana	440.400	134.361	305	8,9
Corum	198.952	51.984	261	3,5
Aksaray	106.351	43.985	414	2,9
Tokat	134.962	41.593	308	2,8
Other Cities	1.346.651	335.187	-	22,4
Turkey	5.689.950	1.500.000	264	100

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IMPROVEMENT OF PRODUCTION OF SUNFLOWER IN TURKEY

There are two basic ways that need to be followed in order to increase the production of sunflower. The first one is to increase its cultivation areas, and the second one is to increase yield. Certainly, carrying out both of these at the same time will be a more effective and quick way of increasing the production. Yet in real terms, the biggest potential in increasing the production of sunflower can be achieved first of all with the increase of cultivation areas and extending of sunflower agriculture in irrigable areas. Thus, increasing cultivation areas and other matters should be handled separately.

Adding New Areas to Sunflower Agriculture

The sunflower agriculture is carried out commonly in Thracian Region in Turkey. But the sunflower yield of the region is under the general average in Turkey. Significant attempts must be made in order to increase yield in this region. On the other side, it is observed that cultivation areas of the sunflower have remained constant for long years and that the production has increased due to high yield. The reason that the production costs of the sunflower are kept lower than those in the world in order to increase its cultivation areas and that it can compete with the products in areas where it is cultivated is very important and effective. Thus, projects that aim to expand its cultivation areas need to be put into effect. After the sunflower finds new cultivation areas for irrigation in the areas in the regions of especially GAP (Southeastern Anatolia Project) and KOP (Konya Plain Project), the total cultivation areas will increase, and its yield will also increase. Moreover, the cultivation of the sunflower has been common in Mediterranean Region in recent years. In this region, the sunflower is cultivated in February-March, and it is harvested

in July. The fact that it is harvested early is very important for oil factories that are inactive especially in that period in terms of meeting their needs. Also, since it is the first sunflower of the production season (early grown), its prices are usually high (Kolsarici et al. 2015).

Irrigation Opportunities in Dry Cultivated Area

Considerable decreases in the proportion of yield and oil of the production of sunflower could be seen in dry years in Turkey. For instance, drought in 2014 in Thracian Region caused yield and oil content of sunflower to decrease, and thus it decreased the total production of vegetable oil in Turkey. For this reason, investments in irrigation should be increased, the sunflower agriculture should be encouraged in irrigable areas, and areas (arid and semi-arid areas) where annual rainfall is under 500-600 mm should be irrigated at least once or twice flowering period (Baydar 2011). Especially in Thracian Region where the sunflower agriculture is carried out, irrigation should be made with appropriate methods, and drip irrigation should be focused on. If the aim in our country where an irrigation area of 5,9 million ha is elevated to that of 8,5 million ha and if the sunflower agriculture is carried out in new areas being opened to irrigation, increases in yield will be observed to climb to %100 and this increase will contribute considerably to our production of vegetable oil.

Use of Species Resistant to Diseases and Pests

Orobanche (*Orobanche cumana* Wallr.) is a parasitic plant which leads to a decrease of %100 proportion in yield of the sunflower in our, European and Balkan countries (Kaya 2013). On the other hand, another problem is concerned with broad leaves weeds that can not be controlled with herbicides before sowing. After sunflower hybrids that are resistant to IMI (Imidazolinone) due to CLEARFIELD applications have emerged, it is now quite easy to control, through herbicides for weeds, both orobanş and weeds that pose serious problems in the production of sunflower (Anonim 2013). Therefore, the use of species that are developed for that purpose should be extended in all of the areas where sunflower agriculture is carried out.

Encouraging Oleic Type Species of Sunflower

Breeding of the native seed and its production should be accelerated and supported by the government. Also, new species of sunflower (High oleic) which includes high proportions of oleic acids (omega-3) should be developed. This is because prospering the level of welfare and self-awareness of nutrition canalize the society into preferring healthy oils that are of good quality. Research has shown that oleic acid as unsaturated fatty acid diminishes the risk of hypertension and provides protection against heart and coronary diseases by balancing cholesterol (Karacor and Cam 2015). Also, oils being obtained from oleic type sunflower can be used more than once (twice-eight times) in hotels, restaurants and catering firms, and this can lead a great deal of saving (Kolsarici et al. 2015). Only through such a measure, a notable stability or decrease in our need of vegetable oil that is met with importing could be supplied.

Improving Support

Support of sunflower for oil per kilogram increased from 0,20 to 0,30 liras in the last ten years of 2006-2015. For this reason, producers in Thracian- Marmara Region cultivate wheat for two years and sunflower for one year in crop rotation instead of wheat for one year and sunflower for one year as they are not satisfied with the support for sunflower, and this causes

significant deviations in values of sowing and production. In order to prevent this, price parity of sunflower/wheat should be kept in 2.5-3.0 in favour of sunflower so that sunflower can compete with wheat (Kolsarici et al. 2015). In addition, input costs of producers should be decreased by increasing amount of support for fuel and fertilizers.

CONCLUSION

It is observed that cultivation areas of sunflower have remained constant for years in Turkey and that production has increased with yield. Thus, projects that try to enlarge cultivation areas should be put into action. The potential cultivation area of sunflower in Turkey is 1 450 000 ha. However, nearly 600 000 ha out of this potential is made use of. If sunflower is cultivated in the area of 850 000 ha that is not used and its yield reaches average 170 kg/da, the annual production of sunflower will reach the value of 1 450 000 tones, and thus the gap of vegetable oil that is supplied with importing will be closed in Turkey (Anonim 2015). Investments in sunflower agriculture should be risen, agriculture of this plant should be focused on, and areas (arid and semi-arid areas) where annual rainfall is under 500-600 mm should be irrigated at least once or twice in flowering period, Moreover, species which are resistant to diseases and pests, whose seed yield and oil content are high, and which have oil content of good quality should be developed, produced, and their consumption should be made more widespread.

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