

The situation and future directions of sunflower production in the Black Sea Region

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ABSTRACT

Sunflower is one of the main crops in the rotation system and the main oil crop in the Black Sea Region (BSR). While Black Sea countries (Russia Federation, Ukraine, Turkey, Bulgaria, Romania, Moldova and Georgia) share only 14% (even including Russia's huge lands aside from Black Sea basin) of world arable land areas, both sunflower harvesting area and production almost cover half of the world. Except Georgia and Moldova, other BSR countries are in top ten countries in sunflower production and planted areas in the world. Because of its great importance in the region, it could easily be assumed that sunflower is a Black Sea-identity plant. Russia and Ukraine are the main sunflower producers (ranking 1st and 2nd, respectively) of the world. While gradually increasing sunflower crushing capacities in Russia and Ukraine impede exportable sunflower supplies, sunflower oil productions and exports are becoming higher year by year. On the other hand, Turkey is the biggest importer in BSR with about 30% market share of world sunflower trade. Nowadays, Ukraine is the biggest and Russia is the third sunflower oil exporter of the world. In the 2007/08 season, Black Sea countries suffered almost over 3.5 million t of crop losses due to a historical drought and observed the highest temperatures of the last 70 – 80 years during summer 2007. Therefore, both sunflower and sunflower oil exports dropped significantly and export prices reached historical heights. Unlike the new trend of oleic type sunflower in other parts of the sunflower world, all sunflower production is linoleic type in BSR.

Key words: Black Sea – planted areas – price – production – sunflower – trade.

INTRODUCTION

The Black Sea Basin region covers a considerable area (2.3 million km²), and is inhabited by 160 million people (16 million of whom live in coastal areas). BSR is steeped in history and culture and forms a vital trading area linking Europe with Asia (Fig. 1). It is the world's largest locked internal sea with a surface area of 423,000 km². The Black Sea with its total area of roughly one-third the size of continental Europe is one of the largest inland water basins in the world. It is almost entirely isolated from the world's oceans but receives river inputs from a large catchment territory, and the second, third and fourth longest rivers in Europe, respectively the Danube, the Dnieper and the Don.

Turkey, a part of the Black Sea region, has a steep, rocky coast with rivers that cascade through the gorges of the coastal ranges. However, the upper and the western coastal part of BSR have large, flat lands which are very suitable for agricultural production (Table 1).

Agriculture in the Black Sea Region has a vast potential. For instance, around 75 percent of vast Ukrainian territory is involved in agricultural production. Moreover, between 90 and 95 percent of land is arable. Some sources claim that Ukraine possesses nearly one third of the world's richest black soils. The total arable land of BSR is twice bigger than that of the EU-25 (about 100 million ha), but the agricultural production is mostly non-irrigated and in dry lands (Table 1). Turkey has the most irrigated area among BSR countries. Because of having large cultivated lands, farmers prefer field crops such as wheat, barley, sunflower, etc. growing under rainfed conditions, especially in the upper part of Black Sea countries. BSR countries have more production and planted areas than EU-25 community of many field and horticultural crops such as wheat, barley, corn, cotton, potato, sugar beet, lentil, total vegetables, cabbage, pepper, pumpkin, cherries, apple, apricot, plum, etc.

Although sunflower is native to and originates from America, it was first cultivated and used in vegetable oil production in Russia starting from the 18th century. In recent years of the 21st century, sunflower became a major crop again in the BSR. After being a major sunflower producer, Argentina has turned more to soybean and corn in recent years, and BSR countries especially Ukraine and Russia, lead both the production and crushing of sunflower in the world. Black Sea sunflower producers comprise Russia Federation, Ukraine, Turkey, Bulgaria, Romania, Moldova and Georgia. However, Georgia may be ignored in most of the surveys due to less sunflower production.



Fig. 1. Black Sea regional map.

Table 1. Land use in BSR countries¹

Countries	Total Area	Land Area	Agricultural Area	Arable & Permanent Crops	Arable Land	Irrigated Land	Perm. Crops	Perm. Pasture	Non Arable Permanent
	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha	1000 ha	1000 Ha	1000 ha	1000 ha
Bulgaria	11,099	11,063	5,325	3,583	3,355	588	228	1,742	7,480
Georgia	6,970	6,949	3,004	1,064	799	469	265	1,940	5,885
Moldova	3,384	3288	2,534	2,143	1,843	300	300	391	1,145
Romania	23,839	22,987	14,837	9,899	9,398	3,077	501	4938	13,088
Russia	1,707,540	1,688,850	216,651	125,300	123,465	4,600	1,835	91351	1,563,550
Turkey	77,482	76,963	41,690	28,523	25,938	5,215	2,585	13,167	48,440
Ukraine	60,370	57,935	41,396	33,457	32,544	2,208	913	7,939	24,478
Total	1,890,684	1,868,035	325,437	203,969	197,342	16,457	6,627	121,468	1,664,066
%	14,1	14,3	6,5	13,2	14,1	5,9	4,9	3,5	14,4
World	13,427,880	13,066,880	5,012,266	1,540,708	1,404,130	277,098	136,578	3,471,729	1,152,6172

¹FAO Statistical Database.

The situation of sunflower-harvested areas and productions in BSR

Sunflower is a vital crop in the Black Sea region and both BSR sunflower harvesting area and production cover almost half of the world (Table 2). Besides, average yields are virtually the same as worldwide levels. In 2007/08 season, when the harvesting area was reduced by 12%, sunflower production nearly plummeted by 1/3 or 3.67 million t due to a historical drought and the highest temperatures of the last 70–80 years during the summer of 2007. For instance, sunflower seed production in Romania was 62 percent lower than estimated in spring 2007, due to these severe drought and extreme hot conditions. Now, Russia and Ukraine are the first and second sunflower seed producers, respectively, amid worldwide ones.

Sunflower production areas in Turkey (sharing over 75% of Turkey's total) are mostly located in the Trakya Region, which is the European part of Turkey. The main sunflower seed producing provinces (oblasts) are Donetsk, Dnipropetrovsk, Zaporizhyya, Kharkiv, Odesa and Kirovohrad in Ukraine. These oblasts, actually, subsidise a lower domestic price for processing enterprises in the rest of the country with large capacities to process sunflower seeds which are definitely better off. Major regions of

sunflower growing in Russia are North Caucasus, Volga and Central Black Earth; Central Black Earth and North Caucasus are also sugar beet growing regions.

Sunflower growing in Turkey is mostly mechanized (planting with pneumatic planters), applying fertilizer and using hybrid seed (Kaya, 2004). However, in Ukraine, only about half of the country's large agricultural enterprises are profitable and most farms have neither the cash nor access to credit to enable them to purchase the additional inputs (fertilizer, herbicide, etc.). Yield improvement has been focused mainly but not exclusively on the largest enterprises: farms over 10,000 hectares (25,000 acres) in size in Ukraine. With the continuous changing of inefficient farms into large and successful enterprises, overall sunflower and other crop productivity is expected to gradually increase in both Russia and Ukraine.

Table 2. Sunflower harvested area and production with proportions in the world (%) by season in BSR¹

	Harvesting Area, 1,000 ha					Production, 1,000 t				
	07/08 ²	06/07	05/06	04/05	03/04	07/08 ²	06/07	05/06	04/05	03/04
Russia	5,250	5,900	5,280	4,650	4,875	5,300	6,100	6,440	4,800	4,870
Ukraine	3,400	3,820	3,690	3,425	4,000	4,400	5,550	4,950	3,280	4,480
Romania	830	980	970	975	1,190	550	1,370	1,180	1,220	1,505
Bulgaria	520	680	635	590	660	520	1,030	830	1,030	790
Turkey	475	500	415	380	425	640	820	780	640	560
Moldova	230	290	275	270	350	170	380	330	335	390
Georgia	35	35	40	30	45	25	25	20	20	25
BSR Total	10,740	12,205	11,305	10,320	11,545	11,605	15,275	14,530	11,325	12,620
World Total	22,770	23,910	22,940	21,305	22,835	27,560	30,000	30,300	26,430	26,970
%	47	51	49	48	51	42	51	48	43	47

¹Oil Word, ²Estimated

Table 3. Sunflower crushing and sunflower oil production with proportions in the world (%) by seasons in BSR^{1, 2}

	Sunflower Crushing, 1000 t					Sunflower oil Production, 1000 t				
	07/08 ³	06/07	05/06	04/05	03/04	07/08 ³	06/07	05/06	04/05	03/04
Russia	4,740	5,750	5,530	4,530	4,070	2,005	2,460	2,380	1,825	1,720
Ukraine	4,150	5,230	4,570	2,955	3,325	1,715	2,255	1,990	1,180	1,400
Romania	480	790	850	910	960	205	335	360	375	385
Bulgaria	400	410	450	475	360	170	175	190	195	145
Turkey	960	1,200	1,130	1,100	1,185	380	495	465	475	510
Moldova	140	265	240	270	270	60	110	100	115	110
Georgia	25	25	25	25	20	10	10	10	10	10
BSR Total	10,895	13,670	12,795	10,265	10,190	4,545	5,840	5,495	4,175	4,280
World Total	24,300	27,320	26,590	23,050	23,470	9,735	11,265	10,995	9,420	9,580
%	45	50	48	45	43	47	52	50	44	45

¹Oil Word, ²UkrAgroConsult/Black Sea Grain, ³Estimated

The application of 17% and 20% sunflower export taxes, in force since 2001 in Ukraine and Russia, respectively, have been promoting higher sunflower crushing / sunflower oil production in Black Sea region (Table 3). The current oilseed crushing capacity in Russia exceeds approximately 6.6 million t per year, including 6.0 million t at industrial plants and 0.6 million from on-farm presses. Based on US FAS Report, these relatively new, large-scale crushing plants with 42 percent of current crushing capacity, compared to outdated and inefficient Soviet-era plants, are 37 percent in Russia. With many of these older plants gradually being modernized, Russia currently has a substantial overcapacity for oilseed crushing which will continue to grow (estimating increase of 50% in next 3 years and reaching 9 million t).

Due to this policy, sunflower crushing and oil production have been decreasing gradually in recent years in Turkey, which has over 4 million t crushing potential, working at less than a 50% capacity.

The crushing factory investments of multinational firms like Bunge, Cargill, Glencore etc also play an important role in the region. Nowadays, Russia and Ukraine are the first and second Sunflower seed crushers/Sunflower oil producers in the world, respectively.

Sunflower trade in BSR

With increasing crushing capacities, both Ukraine and Russia have limited sunflower seed supplies for export. However, Bulgaria and Romania have replaced the earlier positions of Ukraine and Russia. While almost all Black Sea countries are sunflower exporters, on the contrary, Turkey appears to be the biggest (also the second in the world) importer country in the region (Table 4).

Sunflower grows mostly in rainfed areas in BSR as a summer crop so it is easily affected by environmental conditions. Because of that, in 2007/2008 season, with 3.67 million t of crop losses due to a historical drought and the highest temperatures of last 70–80 years during summer 2007, Black Sea Sunflower exports will drop by over 70%. In addition, Turkey will also have some difficulties in providing exportable supplies.

With gradually enlarging crushing capacities, both Ukraine and Russia have started to export more sunflower oil. Now, Ukraine is the biggest worldwide sunflower oil exporter. Russian sunflower oil imports have also been markedly reduced and Russia has gained the third position among the worldwide sunflower oil exporters (Table 5).

Table 4. Sunflower trade and their proportions in the world (%) by seasons in BSR^{1,2,3}

	Sunflower Exports, 1000 t					Sunflower Imports, 1000 t				
	07/08 ⁴	06/07	05/06	04/05	03/04	07/08 ^P	06/07	05/06	04/05	03/04
Russia	50	160	380	45	350	5	5	10	10	10
Ukraine	75	340	220	10	930	5	5	5	5	5
Romania*	100	265	100	40	135	70	30	30	30	30
Bulgaria*	100	295	215	370	200	5	5	5	5	10
Turkey	-	-	-	-	-	300	470	400	530	670
Moldova	25	120	70	90	100	10	-	-	-	-
Georgia	-	-	-	-	-	5	5	5	5	-
BSR Total	350	1,180	985	555	1,715	400	520	455	585	725
World Total	1,000	1,920	1,550	1,190	2,310	1,020	1,920	1,515	1,300	2,285
%	35	61	64	47	74	39	27	30	45	32

¹Oil Word, ² UkrAgroConsult/Black Sea Grain, TUIK, ³Intra EU trade is excluded, ⁴Estimated.

Table 5. Sunflower oil trade and their proportions in the world (%) by seasons in BSR^{1,2,3}

	Sunflower Oil Exports, 1,000 t					Sunflower Oil Imports, 1,000 t				
	07/08 ⁴	06/07	05/06	04/05	03/04	07/08 ⁴	06/07	05/06	04/05	03/04
Russia	220	660	620	225	185	100	125	100	135	175
Ukraine	1,290	1,840	1,590	660	970	-	-	-	-	-
Romania*	10	20	25	70	45	25	15	10	10	5
Bulgaria*	10	35	40	30	25	20	5	5	5	5
Turkey	75	80	235	45	15	200	130	455	160	80
Moldova	5	55	55	55	60	15	-	-	-	-
Georgia	-	-	-	-	-	35	35	35	25	20
BSR Total	1,610	2,690	2,565	1,085	1,300	395	310	605	335	285
World Total	3,230	4,350	4,350	2,785	2,785	3,455	4,345	4,290	2,845	2,790
%	50	62	59	39	47	11	7	14	12	10

¹Oil Word, ² UkrAgroConsult/Black Sea Grain, TUIK, ³Intra EU trade is excluded, ⁴Estimated.

The same as for sunflower seed, Turkey is once again the main destination for sunflower oil exports of other Black Sea countries. In 05/06 season, Turkey also held the record for sunflower oil exports to mainly Iraq and Syria by using its logistics and neighboring advantage. In 2007/2008 season, with crushing reduced by 20%, Black Sea Sunflower oil exports will be cut by 40% (Table 5).

Sunflower and sunflower oil prices in BSR

Since Turkey is the main buyer in BSR and the major part of Turkish imports are of Bulgarian origin, DAF-Turkey sunflower export prices are taken into account in our table (Table 5). As is clearly seen from the table, DAF prices almost remained the same between January 04 – December 06 and then started to climb. From March 2006 till February 2007, DAF prices skyrocketed by 170% and reached historical heights. Huge reduction in sunflower crop of Bulgaria (also of other Black Sea countries) as well as rises in other oilseed and vegetable oil prices were the main reasons for these record prices.

As Ukraine is the biggest sunflower oil exporter country in the world, FOB (free on board) Ukraine sunflower oil export prices have to be taken into account. Similar to sunflower export prices, sunflower oil export prices also virtually remained unchanged between January 04 and March 07. However, after the relevant month, sunflower export prices peaked by undergoing a 165% increase in 1 year. Record raw material (sunflower) prices promoted such historical prices.

Table 6. Sunflower (DAF) and Sunflower Oil (FOB) export prices (\$/t) by months in BSR^{1,2,3,4,5}

Sunflower Seed (DAF) export prices (\$/t)					Sunflower Oil (FOB) export prices (\$/t)						
Months	2004	2005	2006	2007	2008	Months	2004	2005	2006	2007	2008
January	295	335	270	320	735	January	650	640	500	630	1,640
February	305	325	270	325	880	February	675	615	505	615	1,700
March	305	325	275	325		March	660	635	520	640	
April	300	325	280	335		April	645	650	570	675	
May	310	330	295	370		May	630	645	600	755	
June	310	340	300	400		June	575	650	595	845	
July	305	310	295	425		July	545	645	580	910	
August	255	300	260	465		August	555	600	575	1,015	
September	250	280	245	570		September	580	585	580	1,180	
October	260	275	245	660		October	635	550	580	1,290	
November	285	270	270	670		November	670	510	645	1,290	
December	300	270	320	680		December	660	505	675	1,315	

¹Oil World, ² MinAg³, Trakya Birlik, ⁴DAF=Delivered at Frontier, ⁵FOB=Free on Board.

Future directions of sunflower production in BSR

By February 5th, 2008, Ukraine will have signed an agreement with World Trade Organization (WTO) and will probably be WTO-member by early August 2008. After the accession of Ukraine to WTO, sunflower export duty of a current 17% will be lowered by 1% for each year till 10%. Additionally, Ukraine will be properly involved in the worldwide trade system. Russia's negotiations with WTO are also in progress and it is Russia's turn after Ukraine's accession. This may also result in a reduction in the Russian sunflower export duty, currently 20%.

As it is known, Bulgaria and Romania have been European Union members since January 2007. In addition, Turkey is an EU member-candidate and is negotiating its entry. If Turkey becomes EU-member, all borders will be abolished and sunflower oil trades will be totally free without import duties.

In Black Sea, rapeseed production is getting higher year by year, so some sunflower acreage may be captured. However, upon gradually increasing sunflower crushing capacities, any significant reduction in plantings is not likely. However, sunflower yields are expected to be higher due to better input (fertilizer, herbicide, irrigation etc.) conditions year by year in upper part of BSR also related to environmental conditions.

Another new trend in sunflower production in the world is mid and high oleic type sunflower due to its higher oil quality to use as frying oil, thus supplying healthy oil to consumers. While the mid oleic type is popular in US (80% NUSUN (mid oleic), 10% high oleic and 10% conventional) and in Argentina, high oleic type is mostly predominant in European countries. High oleic type sunflower production has reached 75% in France 50% in Spain and 10% in Hungary. Its possible use as a biodiesel source will also increase planted areas and demands for an oleic type in the region.

CONCLUSIONS

Based on data and country report statistics examined, Black Sea countries will continue to be the major sunflower and sunflower oil producers and exporters of the world. WTO memberships of Ukraine and Russia as well as EU-membership of Turkey will facilitate much free trade. Furthermore, oleic type sunflower will also rapidly spread in the BSR in the near future for potential uses as frying oil and energy crops bringing new trends and movement to the region. However, conventional sunflower production will also remain in the region for edible oil demands.

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