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The vegetable oil production and statistical values in the world

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Abstract: *The global oilseeds and vegetable oil market have shown a high growth trend in the last thirty years. The increasing demand for oilseeds and vegetable oil in East Asia also led to an increase in global production.In addition, the increase in biofuels has a positive effect on the increase in oilseed production.In addition to the use of oilseeds for food purposes, some of these plants can also be used as additives to flour and other foodstuffs. The wastes generated as a result of processing these products are also considered as feed raw material or additive. The list of oilseed plants in the world consists of soybean, peanut, sunflower, canola (rapeseed), corn, olive, sesame, palm seed, oil flax, safflower, coconut and castor oil plants.*
This review covers vegetable oil production and statistical evaluations in the world in recent years.
Keywords: The vegetable oils, vegetable oil production, statistical analysis values

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I. INTRODUCTION

The fats, which have an important place in human nutrition, are essential nutrients for people to continue their vital activities.Fats obtained from vegetable and animal sources are sources of energy. They contain vitamins such as A, D, E and K, delay the hunger by increasing the feeling of satiety, constitute the source of essential (essential) fatty acids necessary for the development of the body structure, protect the organs from external factors, give flavor and taste to the food.Besides,

- They contribute to soil fertility,
- The used in Oil Production
- The used in mixed feed production,
- The used as crop rotation plant,
- It is used in animal nutrition as green feed,
- The used in bee breeding,
- It is used as a raw material in industry and is used in bio-diesel production.

For a healthy and balanced diet, it is recommended that 850-900 calories (30-35%) be met from fats daily.One gram of fat contains 9.3 calories and a person needs to consume about 95 g of fat per day (Gül et al, 2016).

They contain high levels of saturated fatty acids, which adversely affect animal health, and their production is expensive and limited. Therefore, a significant part of the total oil production in the world is obtained from vegetable sources.76.2% of the oils consumed as food in the world are of vegetable origin (Figure 1)(Arıoğlu, 2014; Aytaç, 2007).

Figure 1. The vegetable oils

Since they contain oil seeds, oil, protein, carbohydrate, mineral substances and vitamins, they have an important place in human and animal nutrition and are an important source of raw materials for the industrial sector (Gürsoy, 2019; Onat et al., 2017).In particular, since oilseed plants such as Soybean and Peanut are from the legume family, they contribute to the increase in fertility of the soils and sustainability by connecting the free nitrogen of the air to the soil.Table 1 shows Fatty acid and (P/S) percentages of some plants(Baydar, 2000).

Table 1 Fatty acid and (P/S) percentages of some plants

plant type	*Unsaturated Fatty Acid (%)*	*Saturated fat Acid (%)*	*P/S*
Sunflower	89	11	8.1
Soy	85	15	5.7
Peanut	82	18	4.6
Olive	86	14	6.1
Rape	94	6	15.7
safflower	96	10	9

The total cultivation areas of oilseeds, which make up about 7% of the world's agricultural production, have increased significantly over the years. When the global vegetable oil production is examined, it is seen that the most produced oil seeds are soy, canola, sunflower, cotton and palm.In this sense, 42% of oilseed production is carried out by the United States and Brazil, Turkey constitutes 0.57% of the world production (USDA, 2017).Besides being used in foods, vegetable oils are used in many other areas such as bath, hair care, skin care, cellulite treatment, pain relief and massage oil. Table 2 shows the different uses of vegetable oils. The production of around 500 million tons of oilseeds worldwide is 360 million tons of soybean with 60% share and sunflower with 8-9% share is in the leading position among all oil seeds.Thus, developments in soybeans affect all other oilseeds and derivatives markets. Approximately 33% of the world's vegetable oil production is palm oil and only 9% is sunflower oil(Erzin, 2018).

Table 2. The different uses of vegetable oils

bathroom	hair care	Skin care
•Laurel essential oil •Eucalyptus oil •Juniper oil •Lemon oil •Fennel oil •Bergamut oil	•Almond oil •Sesame oil •Laurel garlic oil •Black cumin oil •Violet oil •Olive oil	•Orange oil •Lemon oil •Apricot oil •Rose oil •Wheat oil •Chamomile oil •Carrot oil
cellulıte treatment	**Pain Relieving Oils**	**Massage Oils**
•Lily oil •Flax oil •Juniper oil •Orange oil •Wheat oil •Mint oil	•Thyme oil •Laurel garlic oil •Trout oil •Clove oil •Rosewood oil •Sesame oil •Garlic oil	•Sesame oil •Trout oil •Thyme oil •Lavender oil •Mint oil •Glycerin oil

According to the data of the US Department of Agriculture, 532 million tons of total oilseed production was realized in the world in 2014.This production was provided by 315 million tons of soy, 71 million tons of rapeseed, 45 million tons of cotton seedlings, 40 million tons of sunflower and 61 million tons of other oilseed plants, respectively.World crude oil production was realized as 176 million tons; 63 million tons of Palm, 47 million tons of soy, 27 million tons of rapeseed, 15 million tons of sunflower and 19 million tons of other oils(Erzin, 2018).Figure 2 shows oil production by years in the World.

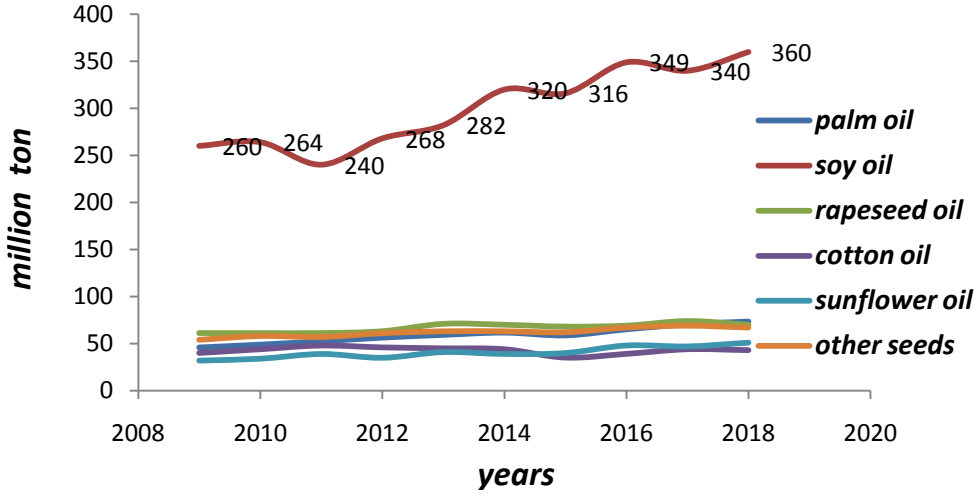

Figure 2. oil production by years in the World.

The major producers of refined oils worldwide are Indonesia, China and Malaysia.Palm oils make up the majority of the refined vegetable oil production.The 82% of world palm seed production is realized by Indonesia and Malaysia.Indonesian government's incentive to more refined oil production than crude oil exports leads the investments of large companies operating in this field to refined oil production.this policy makes Indonesian firms more competitive than Malaysian firms. Turkey has with 540,000 tons in the export of refined vegetable oils ranks fifth in the world rankings (Öztürk, 2016).Figure 3 shows that Indonesia ranks first in world vegetable oil production, followed by China, Malaysia, EU, USA, Argentina and Brazil respectively.

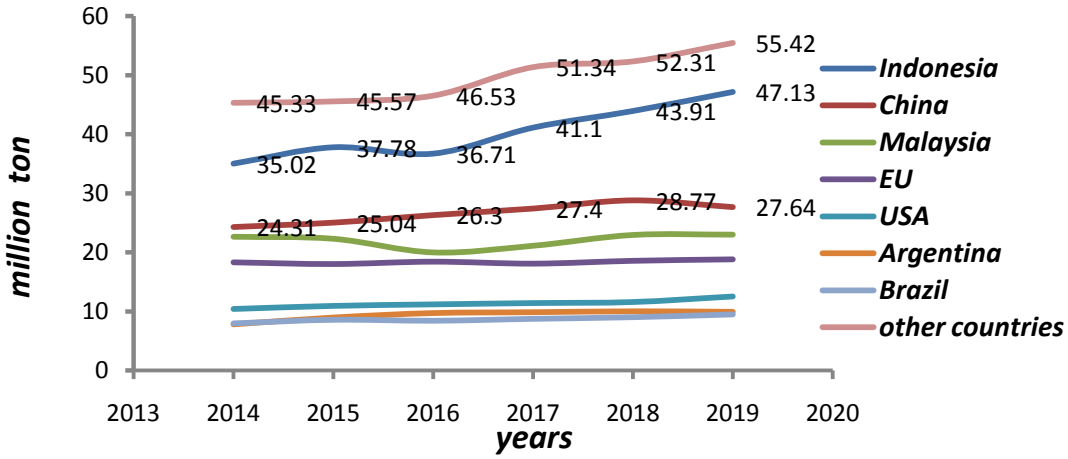

Figure 3. The vegetable oil production by countries

II. THE VEGETABLE OİL TYPES

2.1.The Olive oil

The olive oil is an important source of energy due to both its energy source and the fat-soluble vitamins and fatty acids it contains. The olive oil is a rich source especially for omega-9 (oleic acid) (Eseceli ve ark., 2006). Besides being the energy source of important fatty acids, especially arachidonic acid is involved in the synthesis of prostaglandins, which prevents the accumulation of red blood cells(Türkoğlu et al., 2012).

Figure 4.The olive oil

The 90% of olive cultivation worldwide is produced in the Mediterranean basin and the rest in Latin American countries. Approximately 17 million tons of grain olives are obtained from 900 million olive trees in an area of 10 million hectares in the world.The world olive oil production is around 2.91 million tons compared to the average of the last five seasons.Important among oil-producing countries Spain, Italy, Greece, Turkey, Tunisia and Morocco, is located at the beginning of the list.Although the share of EU countries in production varies by year, it is around 70%.Spain takes the first place among EU countries, followed by Italy and Greece.Spain's share in EU production is at the level of 64%. In the world, the demand for olive products such as olive oil and table olives has increased in recent years. For this reason, it started to cultivate olive cultivation economically in other countries such as Argentina, Chile, Mexico, Peru, Uruguay and Australia, which show a Mediterranean climate. Figure 5 shows olive production by countries and years.

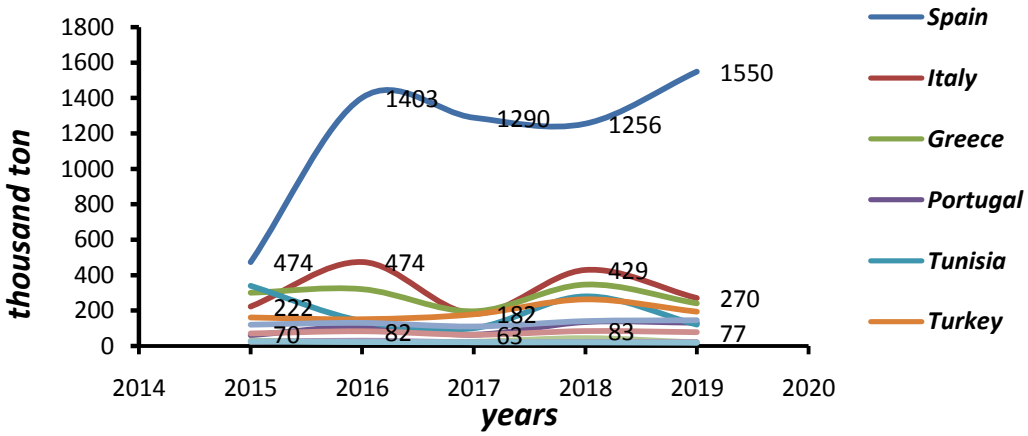

Figure 5. The olive oil production by countries and years.

2.2. The sunflower oil

The sunflower is an important oil plant in terms of vegetable crude oil production due to the high amount of oil (22-50%) it contains in its seed. The sunflower oil is one of the oils with the highest nutritional value.

Figure 6.The sunflower oil

The sunflower covers 11% of world vegetable crude oil production. The Sunflower oil takes the first place among vegetable oils preferred in terms of edible quality.Therefore, in many countries, agriculture is done at an economic level.Sunflower oil is one of the vegetable oils with the highest nutritional value due to its high content of unsaturated fatty acids (69%). The pulp obtained by 40-45% contains 30-40% protein and is used in animal nutrition as a valuable feed(Report, 2018).

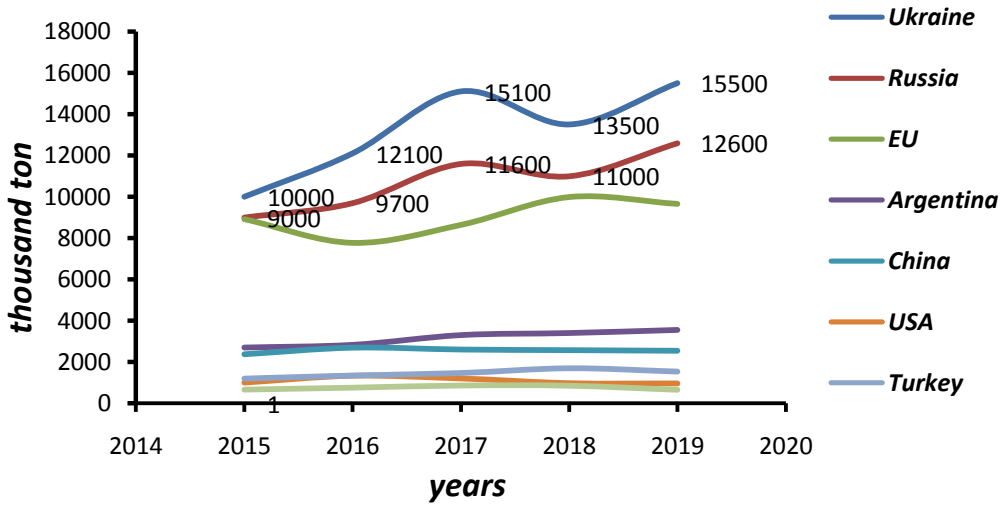

Figure 7. The sunflower oil production by countries and years.

2.3. The soybean oil

Today, soybean is among the most important plants in terms of cultivation areas, production volume and international trade(Gustavo, 2015). Soybean agriculture is geographically concentrated in the USA, Brazil, China and Argentina.Although these countries change by years, they make up about 90% of the world total soy production.Asian and African continent countries, with the exception of China, cover 5% of world soybean production.The USA is the leading country in world soybean production and export.

It is predicted that there will be a 4.8% increase in world soybean production.World soybean exports are expected to increase by 3.3% compared to the previous season and the world soybean total supply is expected to increase to 593 million tons.

2.4. The Canola Oil

In 2016, EU countries produced 22,195 million tons of canola, and this amount increased to 20,100 million tons in 2017. Canada, which ranks second in world canola production, is estimated to increase 18,377 million tons in 2016 to 18,500 million tons in 2017.China, which produced 14,931 million tons of canola in 2016, is estimated to have produced 13,500 million tons in 2017.Figure 8 shows India, which came right after China and produced 5,920 million tons in 2016, and produced 6,950 million tons of canola in 2017. Figure 8 shows the canola oil production by countries and years

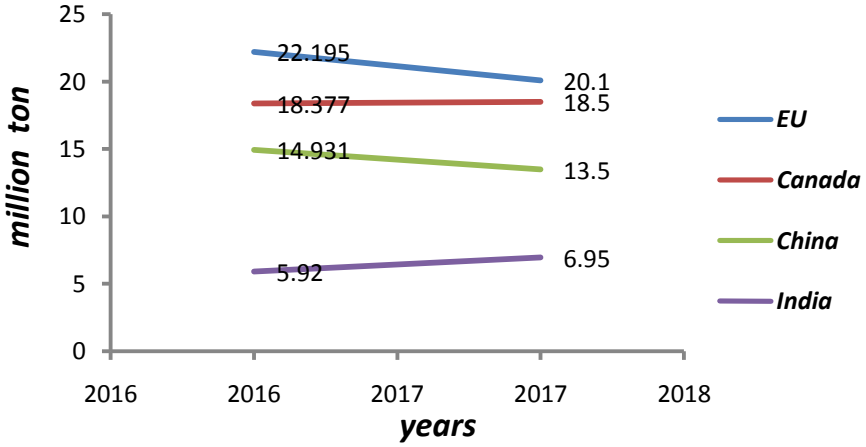

Figure 8. The canola oil production by countries and years.

III. CONCLUSIONS

Because of the oil, protein, carbohydrate, mineral substances and vitamins they contain, oil seeds, which have an important place in human and animal nutrition, are also an important source of raw materials for

the industrial sector.Oilseed plants are wonderful plants of the century with versatile usage areas.It is thought that oilseeds and vegetable oil prices will continue to rise in line with increasing food and energy demand.

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