

November 2021

2021 Industry Report: Sugar Beet



Executive Summary

Production

- According to Russian analysts' estimates, sugar beet production continues to rise in Russia, increasing by 14% over the past 5 years and production is completely overtaking consumption.
 - The total European sugar beet planted area is expected to drop slightly in 2021, year on year, driven by planting area reductions in the two hardest-hit countries in 2020, UK and France.
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Exports

- According to Russia's Sugar Producers' Union, the sugar stockpile has reached approximately 3.1 million tonnes and has led to Russia becoming the leading exporter of beet sugar in the world, exporting a value of \$ 67.53 million in 2020.
 - Germany is the top exporter of fresh sugar beets, supplying a value of \$15.9 million in 2019, an increase of 34% from 2018.
 - Germany exports more than 42.4% of the total world sugar beet exports, and exports have grown in value by 50% between 2015-2019.
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Recent Developments

- According to the Federal State Statistics Service, from February 2020 to February 2021, the beet sugar price rose by 63.97%. As a result, the Russian government has taken several measures to stabilize sugar prices, including signing an agreement to freeze prices for significant producers and retail chains.
- The controversial use of Neonic insecticide, a basic input for sugar beet, has been under scrutiny and will be completely banned even for emergency use.

Worldwide Exports of HS Code: 121291 Sugar beet, fresh, chilled, frozen, or dried, whether or not ground

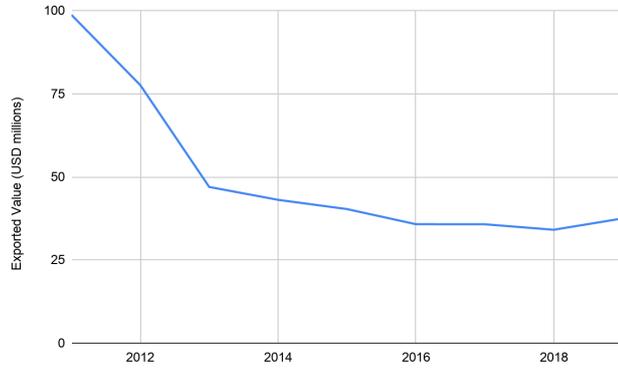


Chart 1. Source: ITC Trade map

Worldwide Exports of HS Code: 170390 Beet molasses resulting from the extraction or refining of sugar

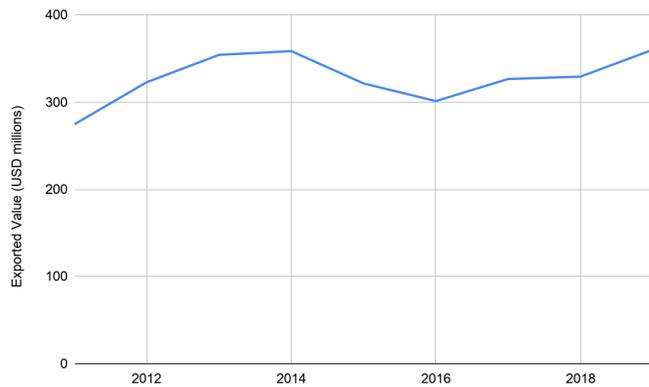


Chart 2. Source: ITC Trade map

Worldwide Exports of HS Code: 230320 Beet pulp, bagasse and other waste of sugar manufacture

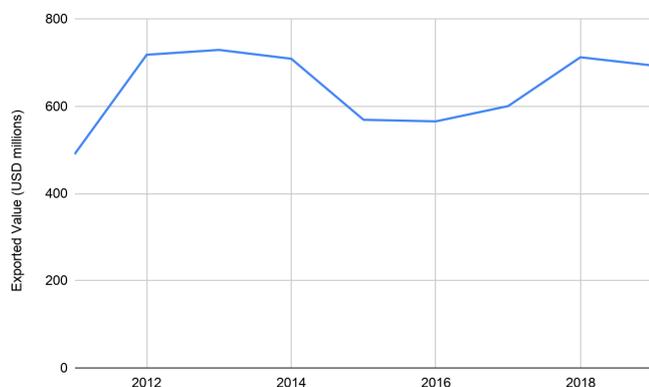


Chart 3. Source: ITC Trade map

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Part I

Sugarbeet Overview

1.1 History

1.2 Uses

1.3 Sugar Beet and Sugar Cane

1.4 Global Sugar Consumption Trend

Sugarbeet Overview

History

It wasn't until 1870 that sugarbeet (*Beta vulgaris*) grown for the production of sucrose was popularized in the United States although there had been earlier attempts for production that were mostly unsuccessful. Sugar beets were mainly produced in 26 states. The viable industry was established, with 1.4 million acres grown in 14 states in 1990.

Uses

The most common use of sugar beets is to produce sucrose, a high-energy food sweetener, and additive. Sugar beets contain valuable sweetening properties similar to sugar obtained from sugar cane.

A. Food Industry:

Sugar beets are mainly used for sucrose production, with as much as 13 - 22% sucrose content. Sugar beet pulp is used in the production of high fiber dietary food additives, and in certain countries, these supplements have been fused into new products such as breakfast cereals.

B. Livestock Feed:

Sugar beet by-products, sugar beet pulp, and molasses are mainly used as livestock feed supplements, providing adequate fiber in portions and boosting the palatability of feeds. Sugar beet tops are also used as a feed for sheep and cattle grazing beet fields in the fall to consume small leftover beets in the post-harvest.

Beet tops can be utilized as silage, and are a good source of protein, vitamin A, and carbohydrates, however, they are not as nutritious as alfalfa haylage or corn silage for cattle, but similar to alfalfa haylage or corn silage for sheep. Beet tops are windrowed in the field and left to wilt to 60-65% moisture before ensiling.

C. Industrial Uses:

Molasses by-products are mainly used in the production of alcohol, pharmaceuticals, and baker yeast. Waste lime from the processing of sugar beets is considered a good soil amendment as it increases soil pH levels and is a good source of P & K plant nutrients.

Sugar beet and Sugar cane

- Ordinary table sugar can be a product of either sugar beet processing or sugar cane. Most of the time, the sugar does not have any distinction or label indicative of its source because sugars produced from sugar beet and sugar cane are chemically identical, both with an identical concentrated crystallized sucrose content.
 - Although the product is the same, as the two plants are entirely different, there are many variations in the production, input and yield between the two. Sugarcane is usually cut and the stem is harvested leaving a stub that can grow again making it more sustainable, on the other hand sugar beet is a root crop that needs to be harvested and planted again, but with a relatively higher sucrose yield.
 - The sugarcane plant requires more favorable climates, so sugar from sugar canes have a slightly higher cost for raw materials. However, using sugar beets has a slight tradeoff; since sugar beets, especially those grown in North America, are GMO products, some consumers might be reluctant to purchase beet sugar.
 - The content of sugar between sugarcane and sugar beet also tends to be slightly different. Sugar takes up 10-15% of the weight of sugar canes, whereas 13-18% of weight in sugar beets consists of sugar.
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Global Sugar Consumption

Global sugar consumption is expected to reach 199 MT by 2029, with a per capita consumption of 23.5kg per cap. There will be variations in consumption by country, however, as the consumption in developing countries and developed countries differ.

Consumption of sugar in developed countries is expected to have a declining trend, as consumers are increasingly becoming more aware of health related issues associated with excessive sugar consumption such as diabetes and heart disease. This trend will be the strongest in Canada, followed by the European Union and United Kingdom and measures to reduce sugar consumption were implemented. Countries including the UK applied taxes to the production of goods that have high sugar content in order to encourage lower consumption at a national level. For example,

manufacturers pay GBP 24.00 per L as tax for drinks with more than 8g of sugar per 100ml in the UK. Other nations have resorted to reducing sugar portion sizes, or using sugar substitutes such as artificial sweeteners.

In contrast, sugar consumption is expected to increase in developing countries, especially in Asia and Africa. Consumption levels are still low in these regions, however there is much potential for growth. Rising consumption in Asia will be the result of increased demand for products containing sugar such as confectionery products and soft drinks in urban areas. In contrast, consumption growth in Africa will be mainly driven by population growth.

Part II

Global Market Dynamics

2.1 Seasonality

2.2 Planting Decision: Sugar Beet against other crops

2.3 Production, Exports and Issues

2.4 The European Union (UK, France and Germany)

2.5 Conflicts over Neonicotinoid pesticides in the EU

Global Market Dynamics

Seasonality

Russia

- Sugar beet is highly dependent on weather conditions, and the success of the crops can be linked to the weather and climate of the following months after planting. The sugar beet crops are highly at risk from destruction by strong wind, drenching, and hailstorms which are especially strong during the first few months (Mar~April) in Russia. The same reason why sugar beet planting period is determined not on a specific month but more on the environmental factors that are ideal for its growth, usually around the end of March - early April in South and Central regions, and in the middle of April - May in Ural and Siberia regions.
- The duration of the growing season (from germination to harvest) depends on the time of sowing and is at least 144 days
- Usually, Russia's harvest begins around late August-early September while the crops ripen around the mid of September.

The rest of the EU

The timeline for producing sugar beet in the EU in the most competitive production countries such as the UK, France, Germany, the Netherlands, Belgium, and Poland - are almost overlapping. Starting from March - April, the month before the beets are planted (from May to June), is the period when the crops are maintained. From June to September, the crops are allowed to grow until harvest commences in September extending until the following year in March. The period from September to March also marks the peak season for sugar beet processing in sugar factories.

Planting Decision: Sugar Beet against other Crops

- Sugar beet is either cultivated together with other crops. In the beet industry, the plot of land that will need to be allocated for beet and for other crops or to skip the season altogether based on the external factors is a major determining factor in the beet industry. Sugar beet needs to be rotated over a period of at least 3~4 years. Sugar beet specialized farms tend to shorten this rotation period while independent farms tend to lengthen this period and replace beet with other less input demanding crops. In

Russia for instance, sugar beet is interchanged with sunflowers.

- Crop competitiveness is also determined by prices and revenues earned from a certain crop. Despite their high production, sugar beet competitiveness in the market can be very fragile. In Russia, beet prices are at most times determined by the revenue-sharing. This means that sugar beet processing factories need to be able to provide attractive prices to farmers for them to grow beets and to do this, the sugar prices themselves need to be high enough to properly compensate farmers.

Production, Exports and Issues

Top Exporting Countries of HS Code: 121291 Sugar beet, fresh, chilled, frozen, or dried, whether or not ground

Exporters	Value exported in 2020 (USD thousand)	Share in Netherlands's imports (%)	Quantity imported in 2020 (Tons)	Growth in imported value between 2019-2020 (% , p.a.)	Growth in imported value between 2019-2020 (% , p.a.)
World	47,559	894,195	Tons	53	100
Germany	19,403	293,039	Tons	66	40.8
Slovakia	6,153	160,552	Tons	38	12.9
Slovenia	5,116	33,839	Tons	151	10.8
Belgium	4,214	143,673	Tons	29	8.9
Hungary	3,458	94,313	Tons	37	7.3
Latvia	2,813	93,141	Tons	30	5.9
Poland	1,958	53,735	Tons	36	4.1
Denmark	1,682	9,279	Tons	181	3.5
Lithuania	585	6,301	Tons	93	1.2
Spain	535	842	Tons	635	1.1

Chart 1. Source: Trade map

Russia

Russia has recently become the biggest exporter of sugar beet globally. Their domestic production is also noteworthy among producing countries as Russia can support their own domestic consumption and still stock enough volumes for inventory. Thanks to Russia's high production volume topped with increasing production area coupled with dropping consumption rates, eventually surplus stocks have accumulated over a 5 year period.

According to Russian analysts' estimates, sugar beet production continues to rise in Russia, increasing by 14% in the last 5 years. On average, approximately 46.7 million tons were harvested annually, compared to 41 million tons in the last 5 years. According to the Russian Agriculture Ministry, the sugar beet production area increased by 13.6% YoY to 1.05 million hectares in 2021.

Trends in Russia's Sugar Beet Production

Increased production in the 2021 season

According to the Federal Center for Agroanalytics, in 2019 Russian sugar beet producers harvested 54.4 million tons, 21% higher compared to 2018. Both the acreage under crops increased by 2%, and the yield of sugar beet increased by 22%. As a result, sugar production reached record high volumes, and prices dropped.

However, the increase in production volume lasted only until 2020, and crop acreage started to decrease, reduced by as much as 19%, due to drought that severely affected crop production. However, forecasts for 2021 show more positive signs. The sugar beet production is expected to recover and is estimated to grow by 200,000 hectares reaching a total of 1.1 million hectares, and the production is expected to increase to 40 to 44 million tons.

Low consumption boosts exports

In the last five years, sugar beet production in the Russian Federation exceeded consumption. In MY 19/20, approximately 7.3 million tons of sugar beet were produced in Russia, while domestic demands amounted to 6 million tons.

Despite the reduced harvest in the 2020/21 season, the low domestic consumption has resulted in stocks of sugar beet piling up from a

continuous 5 years of over-supply.

The sugar stockpile has reached approximately 3.1 million tonnes and has led to Russia becoming the leading exporter of beet sugar, exporting a value of USD 67.53 million in 2020 mainly to the neighboring CIS and European countries.

Raw beet sugar exports in 2020

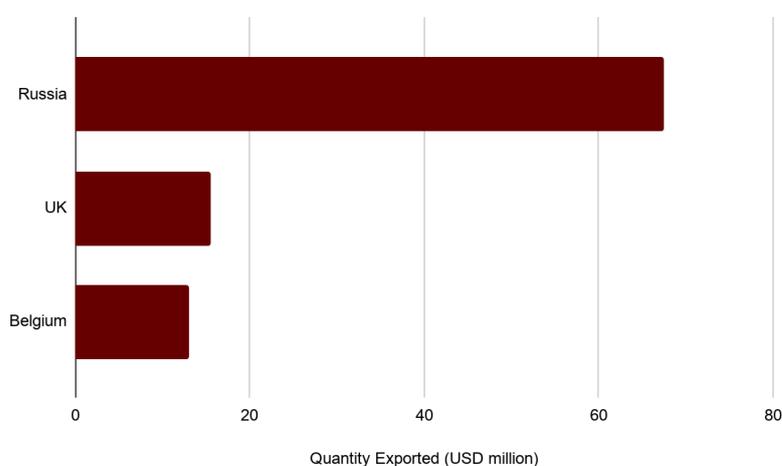


Chart 2. Source: ITC Trade map

Around the end of 2020, Russia experienced a price surge for staple foods including sugar from all sources. A combination of various factors were believed to have caused the price hike such as increasing global prices of staples, weakening ruble, COVID-19, bird flu outbreak, etc.

Sugar prices had been steadily rising, pricing data from February 2020 to February 2021 indicates a price increase of as much as 63.97%. The Russian government has taken several measures to stabilize staple prices including sugar prices, resorting to capping prices for staples, and imposing tax hikes on agricultural exports.

The increase in both sugar beet and sugarcane production in 2021 is expected to stabilize sugar prices in Russia. An expected harvest of at least 40 MMT, aided by stockpiles from previous seasons, will cover the sugar consumption of about 6 MMT of sugar, which is expected to be enough to meet the domestic market's needs.

The European Union

UK and France

The total European sugar beet planted area is expected to drop slightly in 2021 YoY, driven by production area reductions in the two hardest-hit countries in 2020, UK and France. According to S&P Global Platts, a 0.6% year-on-year decrease in EU and UK sugar beet acreage to 1.601 million hectares is expected in 2021-22. EU beet sugar supplies are expected to rebound in 2021 but the situation in the UK doesn't seem to turn for the better. After crops in 2020 were ravaged by the yellow virus and spring drought, many farmers did not even attempt to plant sugar beet. The sole buyer and processor of sugar beet in the UK, British Sugar launched an assurance scheme for growers by fixing the prices however farmers were not satisfied with this.

In France, the decreasing production is being addressed by providing incentive packages to processors, along with a EUR 100M compensation package issued by the government to offset income losses for producers who lost over 30% of their yield.

Germany

Germany is the top exporter of fresh sugar beets in the EU, supplying a value of USD 15.9 million in 2019, an increase of 34% from 2018. Germany exports more than 42.4% of the total world sugar beet exports, and exports have grown in value by 50% between 2015-2019.

German Exports of Sugar beet, fresh, chilled, frozen or dried, whether or not ground (HS code: HS Code: 121291)

Exporters	Value imported in 2020 (USD thousand)	Share in China's imports (%)	Quantity imported in 2020 (Tons)	Growth in imported value between 2019-2020 (% p.a.)	Total import growth in value of partner country 2016-2020 (%)
World	19,403	293,039	66	100	8
Switzerland	18,551	254,925	73	40.8	36
Netherlands	787	37,804	21	5.9	11

Exporters	Value imported in 2020 (USD thousand)	Share in China's imports (%)	Quantity imported in 2020 (Tons)	Growth in imported value between 2019-2020 (% , p.a.)	Total import growth in value of partner country 2016-2020 (%)
Austria	43	110	391	3.3	545
Luxembourg	17	35	486	0	-48
Belgium	3	158	19	4.5	10
Chile	2	0		0	59

Chart 3. Source: ITC Trade map

For decades, other EU countries have used the production and processing of sugar beets of Germany as models especially since sugar beet farmers in Germany achieved above-average contribution margins, however, cultivation in recent years has lost its attractiveness since the end of the sugar quota, and acreage continues to decline. Germany is set to experience the largest sugar beet acreage loss due to a continued ban on neonicotinoids in Germany and because of a lack of support from the European Commission where farmers are simply seeing incentives of moving to other crops.

It can be recalled that the EU prohibited the application of the pesticide neonicotinoids in field-grown sugar beets in 2018 (greenhouse-grown beets are exempted).

Conflicts over Neonicotinoid pesticides in the EU

The use of neonicotinoid insecticides (aka. Neonics) has been a practice in the sugar beet industry and a key input in sugar beet production where it is applied on seeds and seedlings that are prone to attack by aphids. There are 5 types of neonicotinoid insecticide and 4 of these (clothianidin, imidacloprid, thiamethoxam, and thiacloprid) had been heavily banned by the EU or the European Food Safety Agency (EFSA) stating that the active substances in these pesticides are highly toxic to honey bees and contaminates the soil. However, despite the ban, many countries are issuing emergency use especially for the production of sugar beet, justifying this emergency authorization due to lack of alternative insecticide to use. Most of the EU countries have only issued derogations until 2020 and from 2021 will completely ban the substance even for emergency use.

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