

## **India's International Trade of Four Specific Commodities in the Recent Past Some Insights**

### **Preface**

The study uses trade indicators to analyse merchandise export and import data in a way that should be useful for the purpose of policy. The indicators provide a glimpse of the trade patterns of the world and the performance of India in comparison to various other countries. They have been used in the case of India's exports of **Pepper & Cheese and Curds** and imports of **Soya-bean Oil & its fractions and Insecticides, Fungicides etc.. , other disinfectants (Pesticides)** to indicate the possible directions policy may take.

The data used in this study has been sourced from the Export Import Data Bank of the DGCI&S, Department of Commerce, and Government of India and from the United Nations Comtrade Database. Introduction notes of each commodities has been sourced from the various sights –viz Wikipedia, Britannica, The Economic Times etc.

Computations are based on data at ITC-HS four-digit level ( ITC-HS Code-0904 & 0406 for export and 1507 & 3808 for import ) and the latest finalized data available on the UN Comtrade Database up to year 2021 and on the DGCI&S Database up to January'2023. So, trends from 2019 to 2022 have been shown when we extract the data from UN Comtrade and from 2018 to 2021 have been shown when we extract the data from DGCIS Data base.

In this report, we will see various analysis and aspects of India's Precious as well as International export trade of Pepper & Cheese and Curds and imports of Soya-bean Oil & its fractions and Insecticides, Fungicides etc.. , other disinfectants (Pesticides). We will use both the 4 digit Commodity codes.

Trends in India's as well as International Trade i.e. Exports and Imports of above four Commodities are given below in different tables :

- Table 1 :India's top 10 Export destination of Pepper with their shares in percentage.
- Table 2 : World's top 10 Exporters of Pepper with their shares in percentage.
- Table 3 : World's top 10 Importers of Pepper with their shares in percentage.
- Annex- I : Top 3 sources of Pepper of World's top 3 Importers.
- Table 4 : India's top 10 destination of Cheese and Curds with their shares in percentage.
- Table 5 : World's top 10 Exporters of Cheese and Curds with their shares in percentage.
- Table 6 : World's top 10 Importers of Cheese and Curds with their shares in percentage.
- Annex-II : Top 3 sources of Cheese and Curds of World's top 3 Importers.
- Table 7 : India's top10 Sources of Soya-bean Oil and its fractions with their shares in percentage.
- Table 8 : World's top 10 Importers of Soya-bean Oil and its fractions with their shares in percentage.
- Table 9 : India's top 10 Sources of Insecticides, Fungicides etc.. , other disinfectants (Pesticides) with their shares in percentage.
- Table 10 : World's top 10 Importers of Insecticides, Fungicides etc.. , other disinfectants (Pesticides) with their shares in percentage.

## EXPORT

### Pepper

**Pepper** is often described as the "king of spices," and it shares a place on most dinner tables with salt. Pepper is now grown in Indonesia, Malaysia, Sri Lanka, Vietnam, and Kampuchea as well as the West coast of India, known as Malabar, where it originated. The United States is the largest importer of pepper. India is still the largest exporter of the spice, and Brazil may be among the newest exporter of pepper.

Both black and white pepper come from the shrub classified as *Piper nigrum*. *Piper nigrum* is one of about 1,000 species in the *Piper* genus that is part of the larger family of peppers called Piperaceae. The various species of *Piper* are grown mostly as woody shrubs, small trees, and vines in the tropical and subtropical regions of the world. The *Piper nigrum* is a climbing shrub that grows to about 30 ft (9 m) tall through a system of aerial roots, but is usually pruned to 12 ft (3.66 m) in cultivation. Its flowers are slender, dense spikes with about 50 blossoms each. The berry-like fruits it produces become peppercorns; each one is about 0.2 in (5 mm) in diameter and contains a single seed. It is indigenous to southern India and Sri Lanka, and has been cultivated in other countries with uniformly warm temperatures and with moist soil conditions. Because the plant also likes shade, it is sometimes grown interspersed within coffee and tea plantations. Each plant may produce berries for 40 years.

As a natural medicinal agent, black pepper in tea form has been credited for relieving arthritis, nausea, fever, migraine headaches, poor digestion, strep throat, and even coma. It has also been used for non-medical applications as an insecticide. Of course, black pepper is a favorite spice of cooks because of its dark color and pungent aroma and flavor.

White pepper is also commonly used and is popular among chefs for its slightly milder flavor and the light color that compliments white sauces, mayonnaise, souffles, and other light-colored dishes. White pepper is also true pepper that is processed in the field differently than its black form.

A mixture of black and white peppercorns is called a mignonette. Ground pepper is also popular in mixes of spices. Kitchen pepper is called for in some recipes for sauces and includes salt, white pepper, ginger, mace, cloves, and nutmeg. Pepper, therefore, proves itself to be a versatile and essential ingredient in combination with other spices, as well as in solitary glory in the pepper mill.

Black pepper is native to South Asia and Southeast Asia, and has been known to Indian cooking since at least 2000 BCE. J. Innes Miller notes that while pepper was grown in southern Thailand and in Malaysia its most important source was India, particularly the Malabar Coast, in what is now the state of Kerala.

In 2022, India was the world's largest producer and exporter of black peppercorns, exporting &S \$ 1.17 Billion worth of Peppers. Other major producers were Viet Nam, Brazil, Indonesia, Sri Lanka, China, and Malaysia. Global pepper production varies annually according to crop management, disease, and weather. Peppercorns are among the most widely traded spice in the world, accounting for 20% of all spice imports.

Like many eastern spices, pepper was historically both a seasoning and a traditional medicine. Long pepper, being stronger, was often the preferred medication, but both were used. Black pepper (or perhaps long pepper) was believed to cure several illnesses, such as constipation, insomnia, oral abscesses, sunburn, and toothaches, among others. Various sources from the fifth century onward recommended pepper to treat eye problems, often by applying salves or poultices made with pepper directly to the eye. Though current medical research has yet to confirm any treatment benefit to humans, several benefits have been shown in animal modeling experiments. Pepper is known to cause sneezing. Some sources say that piperine, a substance present in black pepper, irritates the nostrils, causing the sneezing.

One tablespoon (6 grams) of ground black pepper contains moderate amounts of vitamin K (13% of the daily value or DV), iron (10% DV), and manganese (18% DV), with trace amounts of other essential nutrients, protein, and dietary fibre.

These are broadly classified under **H.S. Code-0904**.

Table - 1

**India's Top 10 destination of Pepper (H.S Code-0904)**

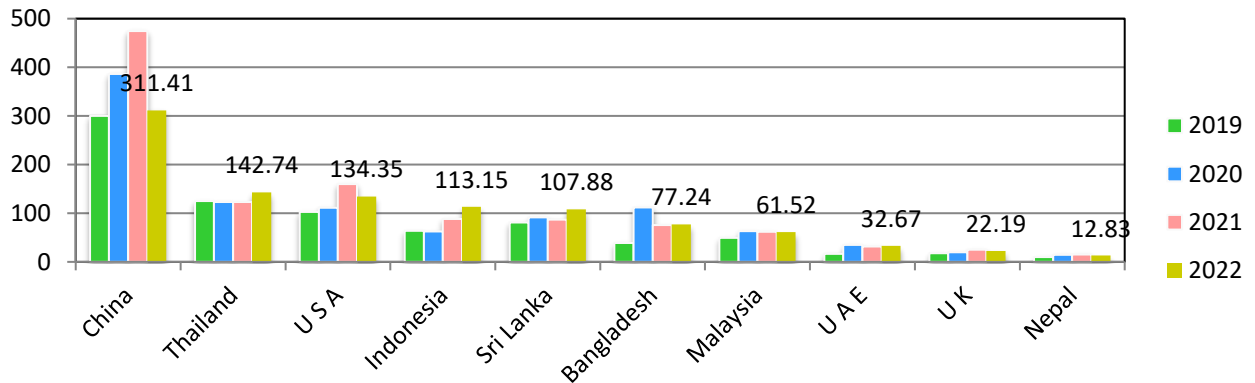
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	China	299.95	31.90	386.39	32.99	474.54	36.29	311.41	26.57
2.	Thailand	125.11	13.31	123.28	10.53	123.04	9.41	142.74	12.18
3.	U S A	102.67	10.92	111.18	9.49	159.87	12.22	134.35	11.46
4.	Indonesia	63.86	6.79	62.29	5.32	88.31	6.75	113.15	9.65
5.	Sri Lanka	81.16	8.63	91.63	7.82	86.61	6.62	107.88	9.20
6.	Bangladesh	38.69	4.11	111.64	9.53	75.92	5.81	77.24	6.59
7.	Malaysia	49.35	5.25	63.20	5.40	61.86	4.73	61.52	5.25
8.	U A E	16.64	1.77	34.80	2.97	31.72	2.43	32.67	2.79
9.	U K	17.78	1.89	20.05	1.71	25.17	1.92	22.19	1.89
10.	Nepal	9.72	1.03	14.25	1.22	14.92	1.14	12.83	1.09
	Others	135.23	14.38	152.55	13.02	165.84	12.68	156.19	13.33
	<b>Total</b>	940.15	100	1171.25	100	1307.81	100	1172.17	100

Source: DGCI&S.

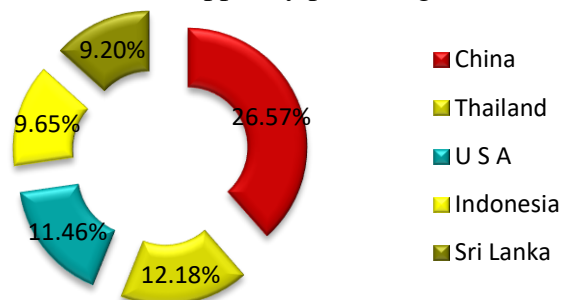
Note : India's Export including re-export

Leading importers of Pepper from India from 2019-2022(Values in million USD)

Data label given on the basis of 2022



India's top 5 destinations of Pepper by percentage India in 2022:



During the year 2022, India exported US \$ 1.17 Billion of Pepper to the top global markets. It was US \$ 1.30 billion in 2021 which shows the decline by 10% in the year 2022. India's Pepper export value to China was around US \$ 311.41 million, which holds the top position with the share of 26.57% of the total export from India in 2022. With the value of US \$ 142.74 million, Thailand takes runner up position with 12.18% share in the global importers of Pepper from India in that year. Which was followed by USA with share 11.46%. The total value of Black Pepper export to the top 3 countries was US \$ 588.85 or 50.21% of total export of Pepper from India in 2022.

Table-2

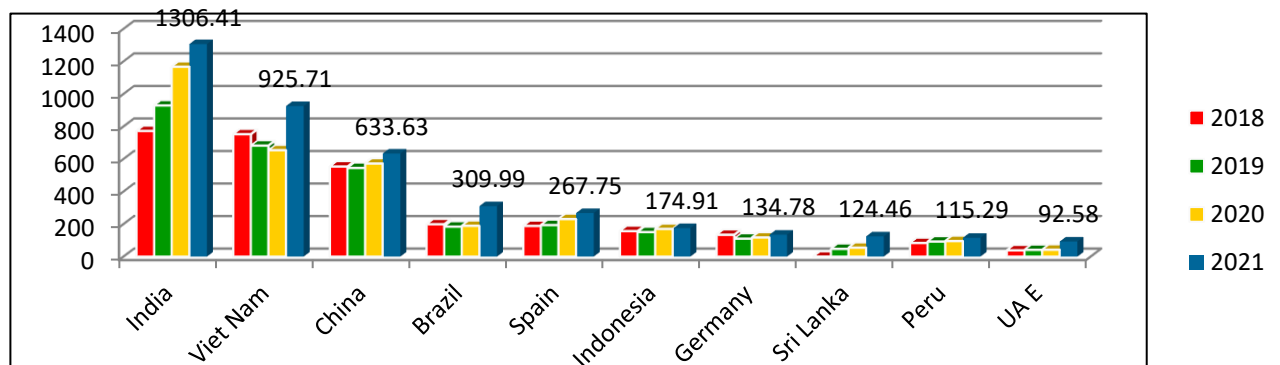
**World's Top 10 exporter of Pepper (H.S Code-0904)**

Rank	Countries	2018		2019		2020		2021	
		Value ( million \$ )	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	<b>India</b>	<b>772.29</b>	<b>21.25</b>	<b>929.19</b>	<b>24.9</b>	<b>1167.24</b>	<b>28.92</b>	<b>1306.41</b>	<b>26.34</b>
2.	Viet Nam	752.40	20.70	682.63	18.3	653.96	16.20	925.71	18.66
3.	China	553.82	15.24	544.98	14.6	572.20	14.18	633.63	12.78
4.	Brazil	198.78	5.47	184.20	4.9	189.00	4.68	309.99	6.25
5.	Spain	188.24	5.18	193.94	5.2	230.92	5.72	267.75	5.40
6.	Indonesia	156.82	4.32	150.55	4.0	169.75	4.21	174.91	3.53
7.	Germany	134.17	3.69	110.43	3.0	117.32	2.91	134.78	2.72
8.	Sri Lanka	0.00	0.00	47.64	1.3	54.70	1.36	124.46	2.51
9.	Peru	83.62	2.30	92.58	2.5	95.71	2.37	115.29	2.32
10.	UA E	38.76	1.07	41.12	1.1	42.44	1.05	92.58	1.87
	Others	755.36	20.78	756.22	20.3	742.55	18.40	874.23	17.63
	<b>Total</b>	<b>3634.26</b>	<b>100</b>	<b>3733.48</b>	<b>100</b>	<b>4035.79</b>	<b>100</b>	<b>4959.75</b>	<b>100</b>

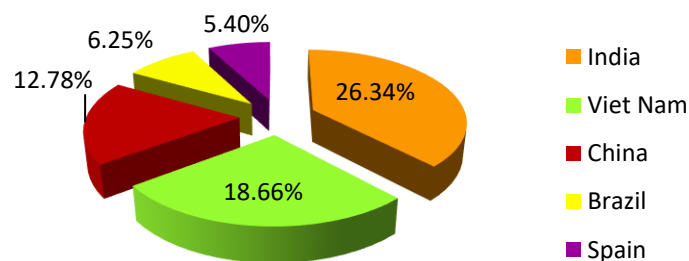
Source: UN Comtrade

Leading Exporters of Pepper of world from 2018 to 2021 (Values in million USD)

Data label given on the basis of 2021



Country wise world's leading exporter of Pepper of Genus Piper by percentage in 2021 :



The **global export of Pepper** is estimated to increase at a robust 36.63% during 2018–2021. Geographically, India is the largest producer, consumer, and exporter of black pepper in the world. India, Vietnam and China are the three leading exporters of Pepper in the world. In over the periods, these three countries accounted for nearly 57.78% of worldwide black pepper exports. In value terms, India ( US \$ 1.30B), Vietnam (US \$ 925.71M) and China (US \$ 633.63 M) , appeared as the countries with the highest levels of exports in 2021. The global Pepper export reached an all time high of US \$ 4.96 Billion during this year.

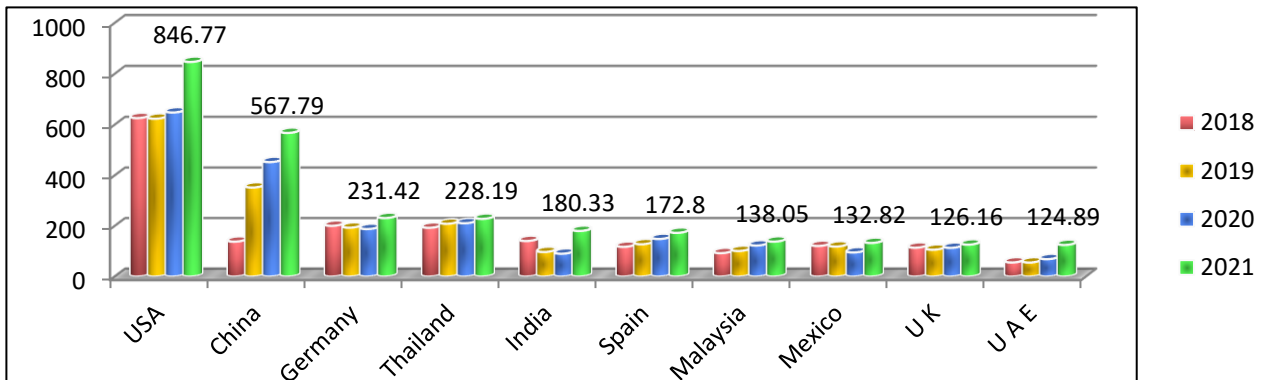
Table-3

**World's top 10 Importers of Pepper (H.S Code-0904)**

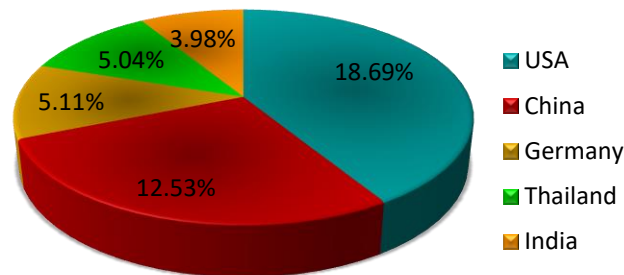
Rank	Countries	2018		2019		2020		2021	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	USA	626.17	19.03	623.59	17.93	648.06	17.73	846.77	18.69
2.	China	137.87	4.19	352.04	10.12	452.79	12.39	567.79	12.53
3.	Germany	200.58	6.10	193.23	5.55	187.82	5.14	231.42	5.11
4.	Thailand	192.83	5.86	208.67	6.00	210.77	5.77	228.19	5.04
5.	<b>India</b>	<b>140.49</b>	<b>4.27</b>	<b>97.03</b>	<b>2.79</b>	<b>90.16</b>	<b>2.47</b>	<b>180.33</b>	<b>3.98</b>
6.	Spain	117.40	3.57	127.59	3.67	148.45	4.06	172.80	3.81
7.	Malaysia	92.50	2.81	101.05	2.90	122.55	3.35	138.05	3.05
8.	Mexico	120.96	3.68	118.56	3.41	95.15	2.60	132.82	2.93
9.	U K	113.96	3.46	105.99	3.05	113.43	3.10	126.16	2.79
10.	U A E	55.48	1.69	55.27	1.59	68.67	1.88	124.89	2.76
	Others	1491.82	45.34	1495.65	43.00	1516.72	41.50	1780.43	39.31
	<b>Total</b>	<b>3290.07</b>	<b>100</b>	<b>3478.67</b>	<b>100</b>	<b>3654.57</b>	<b>100</b>	<b>4529.65</b>	<b>100</b>

Source : UN Comtrade

Leading Pepper of Genus Piper importers of world from 2018 to 2021 (Values in million \$)  
Data label given on the basis of 2021



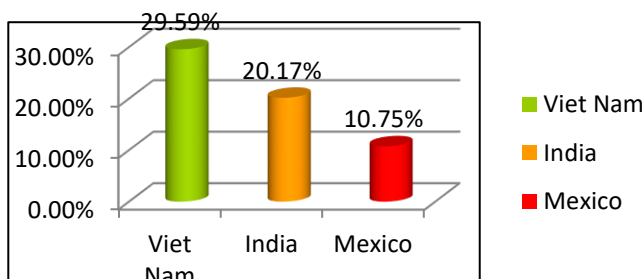
Country wise world's leading importers of Pepper of Genus Piper by percentage in 2021



Global pepper imports amounted to US \$ 4.53 billion in 2021. This trend pattern, however, indicated relatively increasing throughout the analyzed period. Overall, the value of global pepper imports increased robustly from 2020 to 2021, expanding at a rate of 23.95%. The country with the largest volume of imports of pepper in absolute volumes was the United States (US \$ 846.77 M) USD), making up 18.69% of global imports. followed by China and Germany with a share of 12.53% and 5.11% of global imports respectively Moreover, pepper imports in **India** in 2021 stood at US \$ 180.33 Million or 3.98% share of world import and occupied the 5<sup>th</sup> position in world.

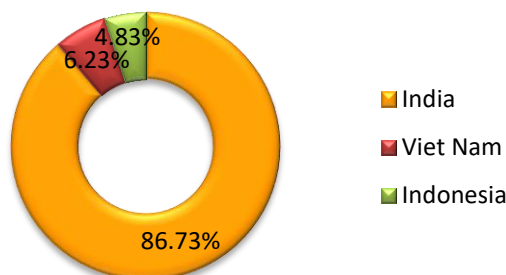
**Sources of world's top 3 importers of Pepper (H.S Code-0904)**

Top 3 Sources of Pepper to USA in 2021 by percentage:



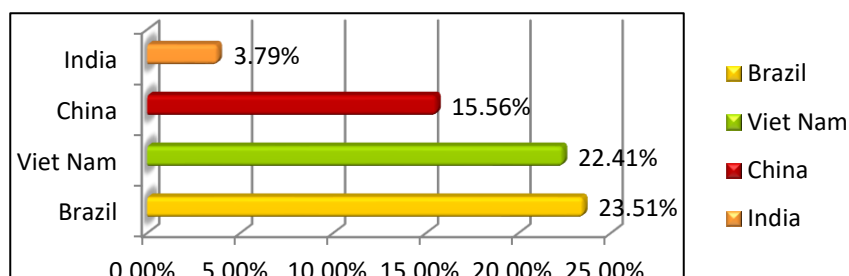
Among the top importing countries, USA imported the highest dollar worth of Pepper from Viet Nam with 29.59% share of its total import in 2021. In second place was **India**, from which USA imported around 20.17% Pepper, which was followed by Mexico from where USA imported 10.75% share of its total requirement of Pepper in 2021. (Source : UN Comtrade).

ii) Top 3 Sources of Pepper to China in 2021 by percentage:



India was the primary source of Pepper to China. China imported 86.73% of Pepper from India in 2021, which was distantly followed by Viet Nam (6.23%) & Indonesia (4.83%). (Source : UN Comtrade)

iii) Top 3 Sources of Pepper to Germany in 2021 by percentage:



Being the third largest importer of Pepper in the world, Germany imported most of its requirement of Pepper from Brazil with share of 23.51% of its total import of Pepper in 2021, which was followed by Viet Nam (22.41%) and China (15.56%). In the same year **India** has exported 3.79% share of Germany's total import of Pepper. (Source: UN Comtrade)

## Cheese and Curds

**Cheese**, nutritious food consisting primarily of the curd, the semisolid substance formed when milk curdles, or coagulates. Curdling occurs naturally if milk is not used promptly: it sours, forming an acid curd, which releases whey, a watery fluid containing the soluble constituents; and it leaves semisolid curd, or fresh cheese. In some areas, cheese is still made simply by allowing milk to curdle naturally, or by mixing milk with juices or extracts that reduce it to curds and whey. A brief treatment of cheese follows. For full treatment, *see* dairy product: Cheese.

Cheese making probably originated soon after humans first took milk from wild or domesticated animals. The Bible refers to "cheese of the herd" being given to King David. Milk from cows, and presumably from other animals, was used for cheese making by about 1000 BCE. The ancient Greeks and Romans knew and valued cheese, as did early people in northern Europe. Methods for cheese making have often been kept secret.

Hundreds of varieties of cheese are made from the milk of cows, goats, sheep, water buffalo, horses, llamas, and yaks. Products vary according to the selection and treatment of the milk; adjustment of its fat content; heating or pasteurizing; and addition of enzymes or cultures of bacteria, molds, or yeasts. Curd formation varies with changes in temperature, time, acidity for coagulation, proportions of rennet and acid, and the speed and extent of removal of the whey. Ripening and curing consists of biological and chemical changes that occur in the cheese and are affected by the moisture content, acidity, texture, shape, size, and microorganisms in the cheese. These changes alter the consistency as well as the flavour of the cheese. Before ripening, cheese is said to be fresh or green; after ripening it is called cured, aged, or ripened. The chemical changes may be classified broadly as the breakdown of fats to fatty acids; proteins to amino acids; and lactose to such products as lactic, acetic, and propionic acids, diacetyl, and carbon dioxide. Flavourful products of ripening include volatile fatty acids, ketones, esters, alcohols, peptides, amino acids, ammonia, and hydrogen sulfide.

In modern factories, cheese is mass-produced according to standardized recipes and techniques that result in a more uniform product. It is not necessarily of higher quality, and there are fewer varieties. Cheese making has been of primary economic importance for hundreds of years in the Germany, Netherlands, France, Italy, and Switzerland.

**Curd** is obtained by coagulating milk in a sequential process called curdling. It can be a final dairy product or the first stage in cheesemaking. The coagulation can be caused by adding rennet, a culture, or any edible acidic substance such as lemon juice or vinegar, and then allowing it to coagulate. The increased acidity causes the milk proteins (casein) to tangle into solid masses, or *curds*. Milk that has been left to sour (raw milk alone or pasteurized milk with added lactic acid bacteria) will also naturally produce curds, and sour milk cheeses are produced this way. Producing cheese curds is one of the first steps in cheese making; the curds are pressed and drained to varying amounts for different styles of cheese and different secondary agents (molds for blue cheeses, etc.) are introduced before the desired aging finishes the cheese. The remaining liquid, which contains only whey proteins, is the whey. In cow's milk, 90 percent of the proteins are caseins. Curds can be used in baking or may be consumed as a snack.

Curd products vary by region and include cottage cheese, curd cheese (both curdled by bacteria and sometimes also rennet), farmer cheese, pot cheese, queso blanco, and paneer. The word can also refer to a non-dairy substance of similar appearance or consistency, though in these cases a modifier or the word *curdled* is generally used.

**Cheese curds** are moist pieces of curdled milk, eaten either alone or as a snack, or used in prepared dishes. They are consumed throughout the northern United States and Canada. Notably, cheese curds are popular in Quebec, as part of the dish poutine (made of French fries topped with cheese curds and gravy), and in Wisconsin and Minnesota where they can be served breaded and deep fried. Curds are sometimes referred to as "**squeaky cheese**" or *fromage en crottes* (literally: "droppings of cheese").

Cheese curds are made from fresh pasteurized milk to which cheese culture and rennet are added. After the milk curdles it is then cut into cubes; the result is a mixture of whey and curd. This mixture is then cooked and pressed to release the whey from the curd, creating the final product.

These are broadly classified under **H.S. Code - 0406**.

Table - 4

**India's Top 10 destination of Cheese and Curds HS Code – 0406)**

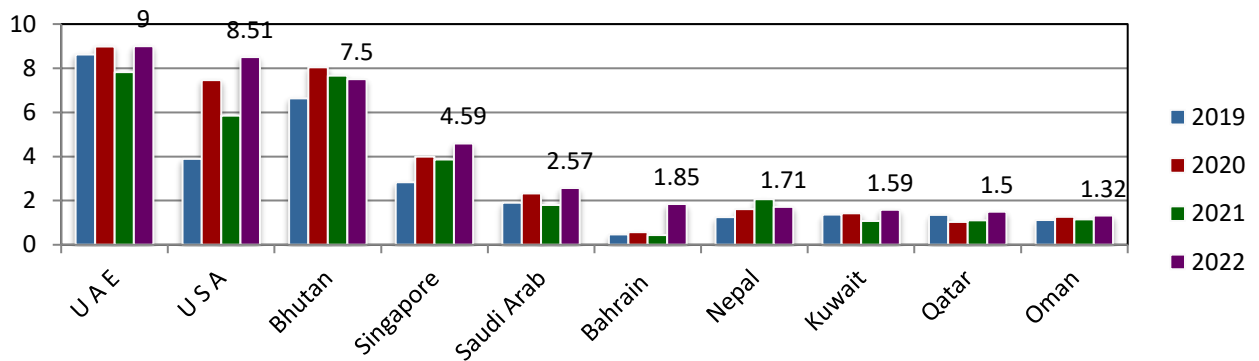
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	U A E	8.62	25.26	8.99	22.55	7.82	21.61	9.00	19.82
2.	U S A	3.89	11.40	7.46	18.70	5.85	16.16	8.51	18.75
3.	Bhutan	6.64	19.44	8.04	20.16	7.66	21.18	7.50	16.52
4.	Singapore	2.84	8.32	4.00	10.02	3.87	10.69	4.59	10.10
5.	Saudi Arab	1.90	5.56	2.33	5.84	1.81	5.01	2.57	5.67
6.	Bahrain	0.47	1.38	0.57	1.43	0.44	1.21	1.85	4.08
7.	Nepal	1.25	3.67	1.62	4.07	2.06	5.70	1.71	3.76
8.	Kuwait	1.37	4.00	1.42	3.56	1.08	2.98	1.59	3.50
9.	Qatar	1.35	3.95	1.03	2.59	1.10	3.05	1.50	3.30
10.	Oman	1.12	3.30	1.26	3.16	1.15	3.17	1.32	2.90
	Others	4.68	13.72	3.16	7.92	3.34	9.24	5.27	11.60
	<b>Total</b>	<b>34.13</b>	<b>100</b>	<b>39.88</b>	<b>100</b>	<b>36.18</b>	<b>100</b>	<b>45.39</b>	<b>100</b>

**Source: DGCI&S**

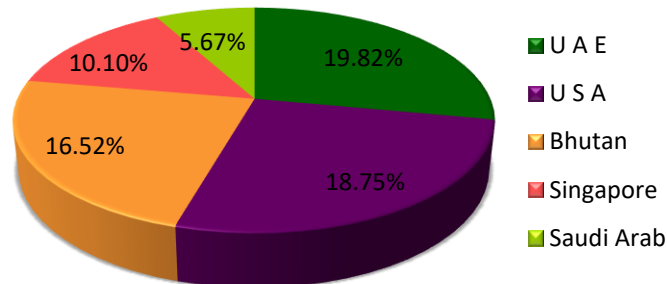
Note : India's Export including re-export

India's major destination of Cheese and Curds from 2019-2022 (Value in Million \$ )

Data label given on the basis of 2022



India's top 5 major destinations of Cheese and Curds by percentage in 2022:



During the year 2022 Indian exporters nearly exported Cheese and Curds US \$ 45.39 million of to the top global markets. Between 2021 and 2022 the exports of Cheese and Curds increased by 25.45%, from US \$ 36.18 Million to US \$ 45.39 million. The export reached an all time high of US \$ 45.39 million during the year 2022. India's Cheese and Curds export value to UAE is around US \$ 9 Million, which holds the top position with the share of 19.82% of the total export value of India. With 18.75 % and 16.52%, USA and Bhutan took 1<sup>st</sup> and 2<sup>nd</sup> runner up position in the importers of Cheese and Curds from India in 2022.



Table - 5

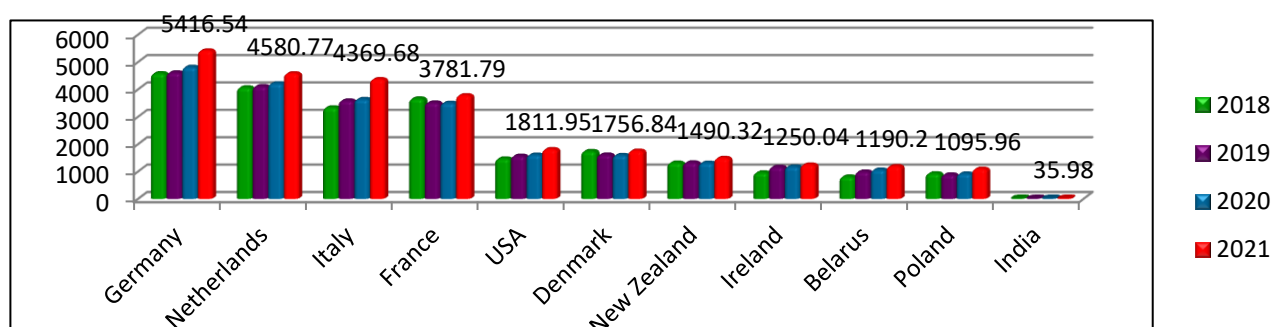
**World's Top 10 exporters of Cheese and Curds HS Code – 0406)**

Rank	Countries	2018		2019		2020		2021	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Germany	4586.37	14.29	4615.37	14.27	4817.63	14.58	5416.54	14.86
2.	Netherlands	4068.53	12.68	4114.55	12.72	4216.97	12.76	4580.77	12.57
3.	Italy	3337.58	10.40	3589.94	11.10	3642.50	11.02	4369.68	11.99
4.	France	3663.40	11.42	3514.33	10.87	3503.95	10.60	3781.79	10.38
5.	USA	1470.29	4.58	1571.47	4.86	1611.56	4.88	1811.95	4.97
6.	Denmark	1743.68	5.43	1615.62	4.99	1598.00	4.83	1756.84	4.82
7.	New Zealand	1320.50	4.12	1326.51	4.10	1316.53	3.98	1490.32	4.09
8.	Ireland	961.62	3.00	1166.97	3.61	1180.99	3.57	1250.04	3.43
9.	Belarus	811.38	2.53	995.87	3.08	1064.42	3.22	1190.20	3.27
10.	Poland	929.53	2.90	889.74	2.75	923.24	2.79	1095.96	3.01
<b>44.</b>	<b>India</b>	<b>36.18</b>	<b>0.11</b>	<b>33.96</b>	<b>0.10</b>	<b>39.39</b>	<b>0.12</b>	<b>35.98</b>	<b>0.10</b>
	Others	9159.78	28.55	8910.73	27.55	9135.89	27.64	9670.01	26.53
	<b>Total</b>	<b>32088.85</b>	<b>100</b>	<b>32345.05</b>	<b>100</b>	<b>33051.09</b>	<b>100</b>	<b>36450.09</b>	<b>100</b>

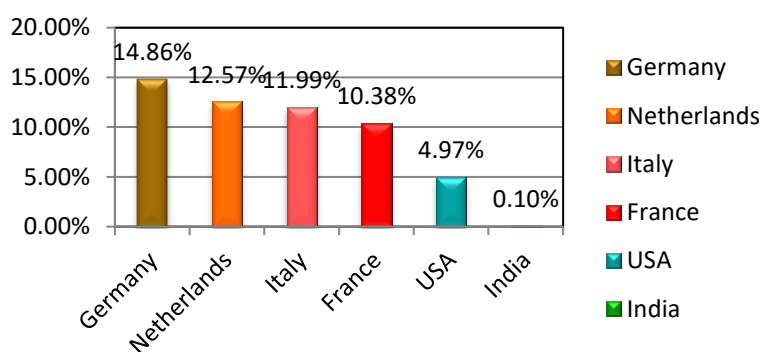
Source: UN Comtrade

Leading Cheese and Curds exporters of world from 2018 to 2021 ( in million \$)

Data label given on the basis of 2021



World's leading Cheese and Curds exporters by percentage in 2021:



Total world Cheese and Curds exports increased to \$36.45 billion over the year 2021, up 10.28% from US \$ 33.05 billion over the year 2020. Germany has been the world's top exporter of Cheese and Curds, with 14.86% to US \$ 5.41 billion in 2021. Netherlands was second largest exporter of Cheese and Curds in the world, exporting US \$ 4.58 billion or accounted 12.57% share of world export in 2021. With 12% share of world export, Italy constituted the 3<sup>rd</sup> largest exporter of Cheese and Curds in the world in the same year. India has exported only 0.10 % share of the commodity in that year.

Table - 6

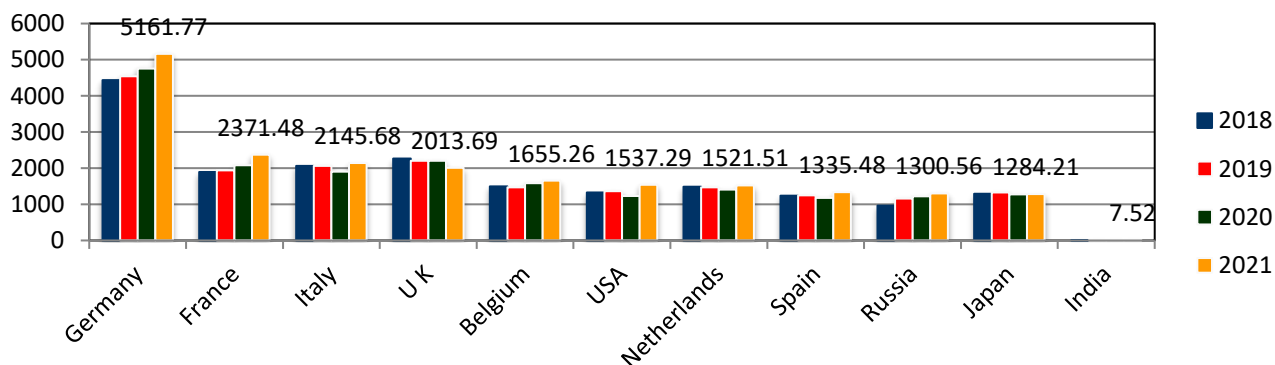
**World's Top 10 Importers of Cheese and Curds HS Code – 0406)**

Rank	Countries	2018		2019		2020		2021	
		Value ( million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Germany	4435.51	13.98	4539.85	14.09	4751.73	14.58	5161.77	14.56
2.	France	1893.79	5.97	1936.77	6.01	2080.05	6.38	2371.48	6.69
3.	Italy	2065.77	6.51	2059.89	6.39	1905.54	5.85	2145.68	6.05
4.	U K	2267.08	7.15	2204.71	6.84	2203.98	6.76	2013.69	5.68
5.	Belgium	1496.80	4.72	1468.21	4.56	1587.97	4.87	1655.26	4.67
6.	USA	1326.54	4.18	1364.21	4.23	1233.95	3.79	1537.29	4.34
7.	Netherlands	1483.00	4.67	1472.95	4.57	1405.51	4.31	1521.51	4.29
8.	Spain	1237.15	3.90	1245.28	3.86	1181.19	3.62	1335.48	3.77
9.	Russia	965.26	3.04	1161.34	3.60	1222.23	3.75	1300.56	3.67
10.	Japan	1292.29	4.07	1324.76	4.11	1276.90	3.92	1284.21	3.62
<b>103.</b>	<b>India</b>	<b>9.97</b>	<b>0.03</b>	<b>9.96</b>	<b>0.03</b>	<b>4.92</b>	<b>0.02</b>	<b>7.52</b>	<b>0.02</b>
	Others	13249.40	41.77	13434.64	41.69	13735.05	42.15	15116.51	42.64
	<b>Total</b>	<b>31722.58</b>	<b>100</b>	<b>32222.57</b>	<b>100</b>	<b>32589.02</b>	<b>100</b>	<b>35450.95</b>	<b>100</b>

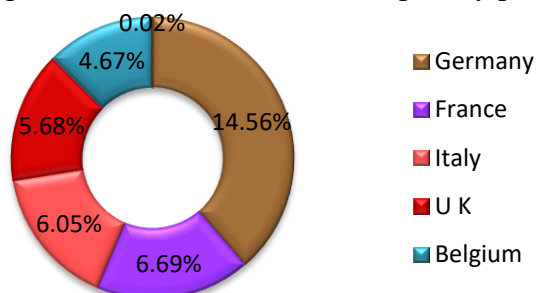
Source :UNComtrade

Leading Cheese and Curds importers of world from 2018 to 2021 (in million USD)

Data label given on the basis of 2021



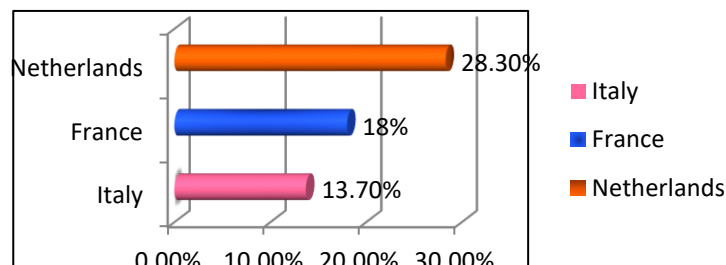
Country wise world's top Importer of Cheese and Curds import by percentage in 2021 :



In 2021, the world imports of "Cheese and curd" exceeded US \$ 35.45 billion . It was \$32.59 billion in the previous year, i.e. increased at 8.79% from the year 2021. Among the top importing countries, Germany imported the highest dollar value worth of US \$ 5.16 Billion Cheese and Curds during 2021. As per Un Comtrade, Germany was also the largest exporter of Cheese and Curds over the review period. France has exported US \$ 2.37 billion of Cheese and Curds or 6.69% share of world export in the same year and occupied the 2<sup>nd</sup> position in ranking which was followed by Italy with 6.05% share of world's total export of Cheese and Curd in 2021. India's share was only 0.02% in that year.

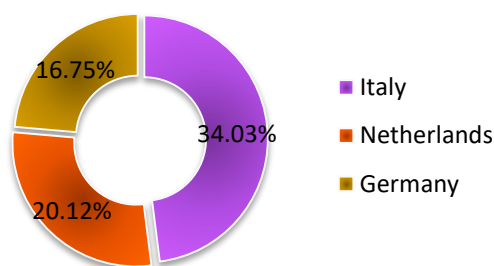
**Sources of world's top three importers of Cheese and Curds HS Code – 0406)**

i) Top 3 Sources of Cheese and Curds to Germany in 2021 by percentage :



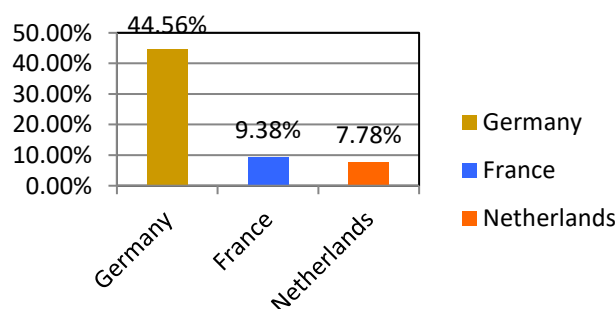
Germany's most of Cheese and Curds came from Netherlands with 28.30% share of its import of Cheese and Curds in 2021. It was followed by France and Italy, were found to be the 2<sup>nd</sup> and 3<sup>rd</sup> largest exporters of Cheese and Curds to Germany by 18% and 13.70 % shares of Germany's total import respectively in 2021. In the same there was no import trade of Cheese and Curds between India and Germany. (Source: UN Comtrade)

ii) Top 3 Sources Cheese and Curds to France in 2021 by percentage



In 2021 Italy was the largest source of Cheese and Curds to France. In that year more than 34% share of Frances's total import of Cheese and Curds came from Italy. It was followed by Netherlands (20.12 %) and Germany (16.75%). In that year there was no export trade of Cheese and Curds from India to France (Source: UN Comtrade)

iii) Top 3 Sources of Cheese and Curds to Italy in 2021 by percentage :



With 44.56% share of Italy's total import of Cheese and Curds Germany became the largest source of it to Italy in 2021. France (9.38%) and Netherlands (7.78%) were other major sources of Cheese and Curds to Italy. in that year. In the same India has account with Italy. (Source : UN Comtrade)

## IMPORT

### Soya Bean Oil & its fractions

**Soybean oil** is a vegetable oil extracted from the seeds of the soybean (*Glycine max*). It is one of the most widely consumed cooking oils and the second most consumed vegetable oil. As a drying oil, processed soybean oil is also used as a base for printing inks (soy ink) and oil paints.

Chinese records dating prior to 2000 BCE mention use of cultivated soybeans to produce edible soy oil. Ancient Chinese literature reveals that soybeans were extensively cultivated and highly valued as a use for the soybean oil production process before written records were kept.

To produce soybean oil, the soybeans are cracked, adjusted for moisture content, heated to between 60 and 88 °C (140–190 °F), rolled into flakes, and solvent-extracted with hexanes. The oil is then refined, blended for different applications, and sometimes hydrogenated. Soybean oils, both liquid and partially hydrogenated are sold as "vegetable oil", or are ingredients in a wide variety of processed foods. Most of the remaining residue (soybean meal) is used as animal feed.

In the 2002–2003 growing season, 30.6 million tons (MT) of soybean oil were produced worldwide, constituting about half of worldwide edible vegetable oil production, and thirty percent of all fats and oils produced, including animal fats and oils derived from tropical plants. In 2018–2019, world production was at 57.4 MT with the leading producers including China (16.6 MT), US (10.9 MT), Argentina (8.4 MT), Brazil (8.2 MT), and EU (3.2 MT).

Per 100 g, soybean oil has 16 g of saturated fat, 23 g of monounsaturated fat, and 58 g of polyunsaturated fat. The major unsaturated fatty acids in soybean oil triglycerides are the polyunsaturated alpha-linolenic acid (C-18:3), 7-10%, and linoleic acid (C-18:2), 51%; and the monounsaturated oleic acid (C-18:1), 23%. It also contains the saturated fatty acids stearic acid (C-18:0), 4%, and palmitic acid (C-16:0), 10%.

The high-proportion of oxidation-prone polyunsaturated fatty acid is undesirable for some uses, such as cooking oils. Three companies, Monsanto Company, DuPont/Bunge, and Asoyia in 2004 introduced low linolenic Roundup Ready soybeans. Hydrogenation may be used to reduce the unsaturation in linolenic acid. The resulting oil is called hydrogenated soybean oil. If the hydrogenation is only partially complete, the oil may contain small amounts of trans fat.

Soybean oil has a variety usage in nutrition such as, salad oil, cooking oil, baking fats, confectionary fats, ingredient for margarine and mayonnaise and also heavy-duty frying oil f blended with high stability oil like cottonseed or palm oil. Having a high value of Omega-3, Omega-6 and Vitamin E and low value of price makes soybean oil an vital nutriment for daily consume. Both cold pressing and refining of soybean oil are commonly used and beneficial processing systems. In cold pressing while high temperature have not been used, the deodorization step of refining needs high temperature and pressure to eliminate of impurities comes from extracted raw material. Refining has more steps than cold pressing, like, degumming, neutralization, bleaching, winterizing and deodorizing. Moreover conditions of crude oil receiving and unloading, storage, refined oil storage and loading steps effects the quality and hygiene of last product. Soybean oil has been used in the pharmaceutical formulations. In conclusion, soybean oil is not only used in food products but is also used as pharmaceutical excipients to produce a novel, biocompatible formulations which are cost effective, non-irritating, and capable of being sterilized before application

Soybean oil is one of many drying oils, which means that it will slowly harden (due to free-radical based polymerization) upon exposure to air, forming a flexible, transparent, and waterproof solid. Because of this property, it is used in some printing ink and oil paint formulations. However, other oils (such as linseed oil) may be superior for some drying oil applications.

These are broadly classified under **H. S. Code 1507**

Table - 7

**India's Top 10 Sources of Esters of Soya-bean Oils and its fractions ( H.S. Code - 1507)**

Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Argentina	1679.49	74.04	2091.22	69.82	2805.98	59.00	2756.72	45.10
2.	Brazil	222.48	9.81	264.65	8.84	664.41	13.97	2187.81	35.79
3.	Netherlands	40.24	1.77	100.88	3.37	247.69	5.21	377.99	6.18
4.	U S A	0.33	0.01	0.37	0.01	36.63	0.77	243.49	3.98
5.	NEPAL	54.83	2.42	207.19	6.92	594.53	12.50	153.63	2.51
6.	Switzerland	202.28	8.92	130.35	4.35	183.60	3.86	147.60	2.41
7.	Russia	0.00	0.00	42.73	1.43	0.00	0.00	104.96	1.72
8.	Turkey	5.76	0.25	40.43	1.35	70.76	1.49	56.23	0.92
9.	Germany	0.13	0.01	0.27	0.01	18.15	0.38	27.42	0.45
10.	Egypt	0.00	0.00	51.79	1.73	31.79	0.67	17.12	0.28
	Others	62.69	2.76	65.28	2.18	102.60	2.16	40.13	0.66
	<b>Total</b>	2268.23	100	2995.15	100	4756.14	100	6113.10	100

**Source: DGCI&S**

Note : India's Import including re-import

The dollar value of Soya-bean Oil & its fractions import in 2022 stood at US \$ 6.11 Billion and US \$ 4.75 Billion in 2021, which shows the import of Soya-bean Oil & its fractions in India grew by more than 28.53% compare to the year 2021. In 2022 India imported Soya-bean Oil & its fractions maximum worth value of US \$ 2.75 Billion from Argentina or 45.10 % of India's total import and from Brazil it was US \$ 2.18 Billion or 35.79%, which shows the India's dependency upon Argentina and Brazil for Soya-bean Oil & its fractions. Third largest source of it to India was Netherlands from where India imported around 6.18% share of Soya-bean Oil & its fractions.

Table – 8

**World's Top 10 Importer of Soya-bean Oil & its fractions ( H.S. Code – 1507)**

Rank	Countries	2018		2019		2020		2021	
		Value (million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)
1.	<b>India</b>	<b>2279.46</b>	<b>30.86</b>	<b>2267.27</b>	<b>31.08</b>	<b>2986.43</b>	<b>33.78</b>	<b>4750.93</b>	<b>34.38</b>
2.	China	437.78	5.93	593.05	8.13	723.52	8.18	1051.46	7.61
3.	Peru	396.83	5.37	386.56	5.30	414.98	4.69	728.54	5.27
4.	Morocco	402.45	5.45	382.48	5.24	411.18	4.65	642.48	4.65
5.	Nepal	122.35	1.66	132.49	1.82	236.52	2.68	608.86	4.41
6.	Rep. of Korea	239.75	3.25	263.45	3.61	312.35	3.53	575.26	4.16
7.	Colombia	273.88	3.71	252.30	3.46	293.03	3.31	394.68	2.86
8.	Poland	98.93	1.34	133.26	1.83	179.46	2.03	283.66	2.05
9.	Spain	66.56	0.90	82.66	1.13	63.88	0.72	239.97	1.74
10.	U K	161.73	2.19	140.79	1.93	142.48	1.61	230.79	1.67
	Others	2905.60	39.34	2661.64	36.48	3077.34	34.81	4313.65	31.21
	<b>Total</b>	<b>7385.31</b>	<b>100</b>	<b>7295.94</b>	<b>100</b>	<b>8841.18</b>	<b>100</b>	<b>13820.30</b>	<b>100</b>

Source :UNComtrade

In 2021, the global Soya-bean Oil & its fractions imports amounted to US \$ 13.82 Billion, huge increasing by more than 56.33% against the previous year figure. Over the period under review, global Soya-bean Oil & its fractions imports reached its maximum level of US \$ 13.82 Billion in this year, however, from 2018 to 2020, it was on almost flat level. In 2021 India (US \$ 4.75 B) constitutes the largest market for imported Soya-bean Oil & its fractions worldwide, making up 34.38 % of global imports. The second position in the ranking was occupied by China (US \$ 1.05 B), with the share of 7.61% of global imports. It was followed by the Peru, with the share of 5.27%.

### **Insecticides, Fungicides etc.. , other disinfectants (Pesticides)**

**Pesticides** are substances that are meant to control pests. This includes herbicide, insecticide, nematicide, molluscicide, piscicide, avicide, rodenticide, bactericide, , animal repellent, microbicide, fungicide, and lampricide. The most common of these are herbicides, which account for approximately 50% of all pesticide use globally. Most pesticides are intended to serve as plant protection products, which in general, protect plants from weeds, fungi, or insects. As an example, the fungus *Alternaria solani* is used to combat the aquatic weed *Salvinia*.

In general, a pesticide is a chemical (such as carbamate) or biological agent (such as a virus, bacterium, or fungus) that deters, incapacitates, kills, or otherwise discourages pests. Target pests can include insects, plant pathogens, weeds, molluscs, birds, mammals, fish, nematodes (roundworms), and microbes that destroy property, cause nuisance, or spread disease, or are disease vectors. Along with these benefits, pesticides also have drawbacks, such as potential toxicity to humans and other species.

Pesticides can be classified by target organism (e.g., herbicides, insecticides, fungicides, rodenticides, and pediculicides), chemical structure, and physical state. Biopesticides include microbial pesticides and biochemical pesticides. Plant-derived pesticides, or "botanicals", have been developing quickly. These include the pyrethroids, rotenoids, nicotinoids, and a fourth group that includes strychnine and scilliroside

Many pesticides can be grouped into chemical families. Prominent insecticide families include organochlorines, organophosphates, and carbamates. Organochlorine hydrocarbons (e.g., DDT) could be separated into dichlorodiphenyl ethanes, cyclodiene compounds, and other related compounds. They operate by disrupting the sodium/potassium balance of the nerve fiber, forcing the nerve to transmit continuously. Their toxicities vary greatly, but they have been phased out because of their persistence and potential to bioaccumulate. Organophosphate and carbamates largely replaced organochlorines. Both operate through inhibiting the enzyme acetylcholinesterase, allowing acetylcholine to transfer nerve impulses indefinitely and causing a variety of symptoms such as weakness or paralysis. Organophosphates are quite toxic to vertebrates and have in some cases been replaced by less toxic carbamates. Thiocarbamate and dithiocarbamates are subclasses of carbamates. Prominent families of herbicides include phenoxy and benzoic acid herbicides, triazines, ureas, and Chloroacetanilide. Phenoxy compounds tend to selectively kill broad-leaf weeds rather than grasses.

Since before 2000 BC, humans have utilized pesticides to protect their crops. The first known pesticide was elemental sulfur dusting used in ancient Sumer about 4,500 years ago in ancient Mesopotamia. By the 15th century, toxic chemicals such as arsenic, mercury, and lead were being applied to crops to kill pests. In the 17th century, nicotine sulfate was extracted from tobacco leaves for use as an insecticide. The 19th century saw the introduction of two more natural pesticides, pyrethrum, which is derived from chrysanthemums, and rotenone, which is derived from the roots of tropical vegetables. Until the 1950s, arsenic-based pesticides were dominant. Paul Müller discovered that DDT was a very effective insecticide.

Pesticides are used to control organisms that are considered to be harmful, or pernicious to their surroundings. For example, they are used to kill mosquitoes that can transmit potentially deadly diseases like West Nile virus, yellow fever, and malaria. They can also kill bees, wasps or ants that can cause allergic reactions. Insecticides can protect animals from illnesses that can be caused by parasites such as fleas. Pesticides can prevent sickness in humans that could be caused by moldy food or diseased produce. Herbicides can be used to clear roadside weeds, trees, and brush. They can also kill invasive weeds that may cause environmental damage. Herbicides are commonly applied in ponds and lakes to control algae and plants such as water grasses that can interfere with activities like swimming and fishing and cause the water to look or smell unpleasant. Uncontrolled pests such as termites and mold can damage structures such as houses.

Alternatives to pesticides are available and include methods of cultivation, use of biological pest controls, genetic engineering (mostly of crops), and methods of interfering with insect breeding. Application of composted yard waste has also been used as a way of controlling pests.

These are broadly classified under **H. S. Code 3808**.

Table - 7

**India's Top 10 Sources of Pesticides (HS Code : 3808)**

Rank	Countries	2019		2020		2021		2022	
		Value ( million \$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)	Value ( million\$)	Share (%)
1.	China	679.28	50.87	730.14	48.91	923.61	49.77	756.90	41.96
2.	U S A	180.11	13.49	166.71	11.17	192.05	10.35	326.78	18.12
3.	Japan	59.79	4.48	80.62	5.40	95.00	5.12	128.94	7.15
4.	Netherland	33.56	2.51	61.87	4.14	113.01	6.09	87.61	4.86
5.	Germany	54.16	4.06	90.61	6.07	99.90	5.38	83.81	4.65
6.	Israel	55.37	4.15	57.03	3.82	87.63	4.72	82.03	4.55
7.	Singapore	31.88	2.39	91.87	6.15	115.31	6.21	56.70	3.14
8.	U K	23.08	1.73	20.95	1.40	44.60	2.40	51.41	2.85
9.	Taiwan	24.17	1.81	36.49	2.44	32.37	1.74	36.63	2.03
10.	Thailand	26.31	1.97	16.05	1.08	22.56	1.22	33.23	1.84
	Others	167.60	12.55	140.63	9.42	129.57	6.98	159.71	8.85
	<b>Total</b>	1335.30	100	1492.97	100	1855.60	100	1803.76	100

**Source: DGCI&S**

Note : India's Import including re-import

In 2022, India imported US \$ 1.80 billion of Insecticides, Fungicides etc.. , other disinfectants which was declined by ,more than 2.81% than 2021.India imports Insecticides, Fungicides etc.. , other disinfectants primarily from China (US \$756.90M), USA (US \$326.78M) and Japan (US \$ 128.94 M). These 3 countries in total exported US \$ 1212.62 billion value of Insecticides, Fungicides etc.. , other disinfectants to India which rounds up to 67.23% of the total Insecticides, Fungicides etc.. , other disinfectants import into India 2021.



**Table 10****World's top 10 Importers of Pesticides (HS Code :3808)**

Rank	Countries	2018		2019		2020		2021	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Brazil	2994.08	8.14	3656.28	10.28	3731.79	9.13	4241.37	10.25
2.	France	2102.51	5.71	2004.47	5.63	2135.14	5.23	2044.31	4.94
<b>3.</b>	<b>India</b>	<b>1340.01</b>	<b>3.64</b>	<b>1331.31</b>	<b>3.74</b>	<b>1507.22</b>	<b>3.69</b>	<b>1853.11</b>	<b>4.48</b>
4.	USA	1372.03	3.73	1090.77	3.07	1875.91	4.59	1848.27	4.47
5.	Canada	1635.54	4.44	1428.63	4.02	1919.44	4.70	1837.15	4.44
6.	Germany	1665.20	4.53	1631.50	4.59	1773.65	4.34	1730.08	4.18
7.	Australia	757.24	2.06	566.41	1.59	1114.58	2.73	1265.12	3.06
8.	Spain	1018.36	2.77	1017.88	2.86	1034.85	2.53	1054.45	2.55
9.	Italy	941.23	2.56	874.69	2.46	998.79	2.44	1034.59	2.50
10.	Ukraine	968.74	2.63	932.87	2.62	892.00	2.18	1022.55	2.47
	Others	22002.46	59.79	21039.06	59.14	23876.07	58.43	23448.62	56.67
	<b>Total</b>	<b>36797.40</b>	<b>100</b>	<b>35573.87</b>	<b>100</b>	<b>40859.44</b>	<b>100</b>	<b>41379.63</b>	<b>100</b>

**Source: UN Comtrade**

Worldwide import of Insecticides, Fungicides etc.. , other disinfectants (Pesticides) by country totaled US \$ 41.38 billion in 2021. The overall value of pesticides imports up by 1.28% for all importing countries in 2021 from 2020. The Brazil imported US \$ 4.24 billion worth of the commodity in 2021, making it the leading importer of the commodity worldwide that year. France and India followed in second and third place, importing US \$ 2.04 billion and US \$ 1.85 billion worth of Insecticides, Fungicides etc.. , other disinfectants in 2021.