

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 **Nutmeg, Mace & Cardamom and Potatoes** and imports of **Interchangeable Tools for Hand Tools** and **Biodiesel & Mixtures thereof** 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-0908 & 0701 for export and 8207 & 3826 for import) and the latest finalized data available on the UN Comtrade Database up to year 2022 and on the DGCI&S Database up to August 2023. So, trends from 2019 to 2022 have been shown when we extract the data from UN Comtrade and from 2019 to 2022 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 Nutmeg, Mace & Cardamom and Potatoes and imports of Interchangeable Tools for Hand Tools and Biodiesel & Mixtures thereof. We will use both the 4 digit Commodity codes, for our analysis, as appropriate.

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 Nutmeg, Mace & Cardamom with their shares in percentage.
- Table 2 : World's top 10 Exporters of Nutmeg, Mace & Cardamom with their shares in percentage.
- Table 3 : World's top 10 Importers of Nutmeg, Mace & Cardamom with their shares in percentage.
- Annex- I : Top 3 sources of Nutmeg, Mace & Cardamom of World's top 3 Importers.
- Table 4 : India's top 10 Export destination of Potatoes with their shares in percentage.
- Table 5 : World's top 10 Exporters of Potatoes with their shares in percentage.
- Table 6 : World's top 10 Importers of Potatoes with their shares in percentage.
- Annex-II : Top 3 sources of Potatoes of World's top 3 Importers.
- Table 7 : India's top10 Sources of Interchangeable Tools for Hand Tools with their shares in percentage.
- Table 8 : World's top 10 Importers Interchangeable Tools for Hand Tools with their shares in percentage.
- Table 9 : India's top 10 Sources of Biodiesel & Mixtures thereof with their shares in percentage.
- Table 10 : World's top 10 Importers of Biodiesel & Mixtures thereof with their shares in percentage.

EXPORT

Nutmeg, Mace and Cardamoms

Nutmeg is the seed, or the ground spice derived from that seed, of several tree species of the genus *Myristica*; **fragrant nutmeg** or **true nutmeg** is a dark-leaved evergreen tree cultivated for two spices derived from its fruit: nutmeg, from its seed, and **mace**, from the seed covering. It is also a commercial source of nutmeg essential oil and nutmeg butter. Indonesia is the main producer of nutmeg and mace, and the true nutmeg tree is native to its islands.

If consumed in amounts exceeding its typical use as a spice, nutmeg powder may produce allergic reactions, cause contact dermatitis, or have psychoactive effects. Although used in traditional medicine for treating various disorders, nutmeg has no scientifically confirmed medicinal value.

Nutmeg is the spice made by grinding the seed of the fragrant nutmeg tree into powder. The spice has a distinctive pungent fragrance and a warm, slightly sweet taste; it is used to flavor many kinds of baked goods, confections, puddings, potatoes, meats, sausages, sauces, vegetables, and such beverages as eggnog. Mace is the spice made from the reddish seed covering (aril) of the nutmeg seed. Its flavour is similar to nutmeg, but more delicate; it is used to flavour baked goods, meat, fish, and vegetables, and in preserving and pickling.

In the processing of mace, the crimson-colored aril is removed from the nutmeg seed that it envelops and is flattened out and dried for 10 to 14 days. Its color changes to pale yellow, orange, or tan. Whole dry mace consists of flat pieces—smooth, horn-like, and brittle—about 40 mm (1+1/2 in) long.

Nutmeg and mace have similar sensory qualities, with nutmeg having a slightly sweeter and mace a more delicate flavour. Mace is often preferred in light dishes for the bright orange, saffron-like hue it imparts. Nutmeg is used for flavouring many dishes. Whole nutmeg can also be ground at home using a grater specifically designed for nutmeg or a multi-purpose grating tool.

In Indonesian cuisine, nutmeg is used in dishes, such as spicy soups including variants of soto, konro, oxtail soup, sup iga (ribs soup), bakso, and sup kambing. It is also used in gravy for meat dishes, such as semur, beef stew, ribs with tomato, and European derived dishes such as bistik (beef steak), rolade (minced meat roll), and bistik lidah (beef tongue steak).

In Indian cuisine, nutmeg is used in many sweet, as well as savoury, dishes. In Kerala Malabar region, grated nutmeg is used in meat preparations and also sparingly added to desserts for the flavour. It may also be used in small quantities in garam masala.

Cardamom, sometimes **cardamon** or **cardamum**, is a spice made from the seeds of several plants in the genera *Elettaria* and *Amomum* in the family Zingiberaceae. Both genera are native to the Indian subcontinent and Indonesia. They are recognized by their small seed pods: triangular in cross-section and spindle-shaped, with a thin, papery outer shell and small, black seeds; *Elettaria* pods are light green and smaller, while *Amomum* pods are larger and dark brown.

Species used for cardamom are native throughout tropical and subtropical Asia. The first references to cardamom are found in Sumer, and in the Ayurvedic literatures of India. Nowadays it is also cultivated in Guatemala, Malaysia, and Tanzania. The German coffee planter Oscar Majus Klöffer introduced Indian cardamom to cultivation in Guatemala before World War I; by 2000, that country had become the biggest producer and exporter of cardamom in the world, followed by India.

True or green cardamom comes from the species *Elettaria cardamomum* and is distributed from India to Malaysia. What is often referred to as white cardamon is actually Siam cardamom, *Amomum krervanh*. Black cardamom, also known as brown, greater, large, longer, or Nepal cardamom, comes from species *Amomum subulatum* and is native to the eastern Himalayas and mostly cultivated in Eastern Nepal, Sikkim, and parts of Darjeeling district in West Bengal of India, and southern Bhutan.

Both forms of cardamom are used as flavourings and cooking spices in both food and drink, and as a medicine. *E. cardamomum* (green cardamom) is used as a spice, a masticatory, or is smoked.

These are broadly classified under **H.S. Code-0908**

Table -1

India's Top 10 destination of Nutmeg, Mace and Cardamoms (HS Code -0908)

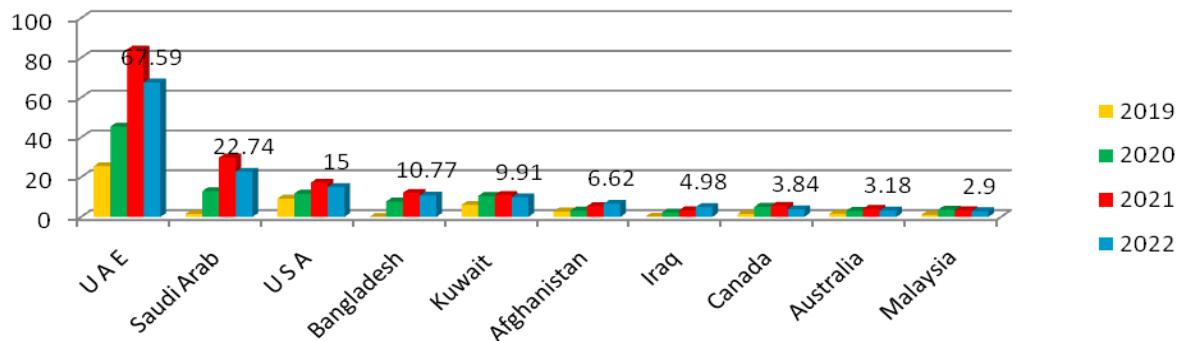
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	U A E	25.49	31.89	45.39	30.49	84.21	35.65	67.59	36.60
2.	Saudi Arab	1.49	1.86	12.96	8.70	29.83	12.63	22.74	12.31
3.	U S A	9.25	11.58	11.76	7.90	17.29	7.32	15.00	8.12
4.	Bangladesh	0.04	0.05	7.77	5.22	12.13	5.13	10.77	5.83
5.	Kuwait	6.06	7.58	10.58	7.11	11.05	4.68	9.91	5.37
6.	Afghanistan	2.70	3.37	3.15	2.12	5.43	2.30	6.62	3.58
7.	Iraq	0.13	0.17	2.25	1.51	3.32	1.40	4.98	2.70
8.	Canada	1.49	1.87	5.06	3.40	5.62	2.38	3.84	2.08
9.	Australia	1.63	2.05	2.99	2.01	4.05	1.71	3.18	1.72
10.	Malaysia	1.10	1.38	3.63	2.44	3.38	1.43	2.90	1.57
	Others	30.54	38.21	43.34	29.11	59.91	25.36	37.15	20.12
	Total	79.93	100	148.87	100	236.22	100	184.68	100

Source: DGCI&S.

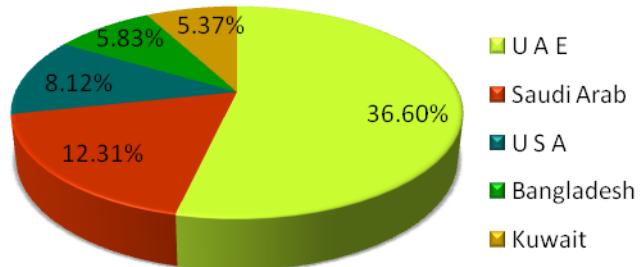
Note : India's Export including re-export

Leading importers of Nutmeg, Mace & Cardamom from India for 2019-2022(in million USD)

Data label given on the basis of 2022



India's top 5 destinations of Nutmeg, Mace & Cardamom by percentage India in 2022:



The total value of Nutmeg, Mace & Cardamom export from India to around the world in year 2022 was almost US \$ 184.68 Million, it was almost 21.82% down than the year 2021. UAE was the largest market for Nutmeg, Mace & Cardamom export from India. In 2022, UAE imported US \$ 67.59 million worth Nutmeg, Mace & Cardamom from India which was accounted 36.60% share of India's total export. It was followed by Saudi Arab (US \$ 22.74 M) and USA (US \$ 15 M) with 12.31% and 8.12% share of India's total export of Nutmeg, Mace & Cardamom in 2022.

Table-2

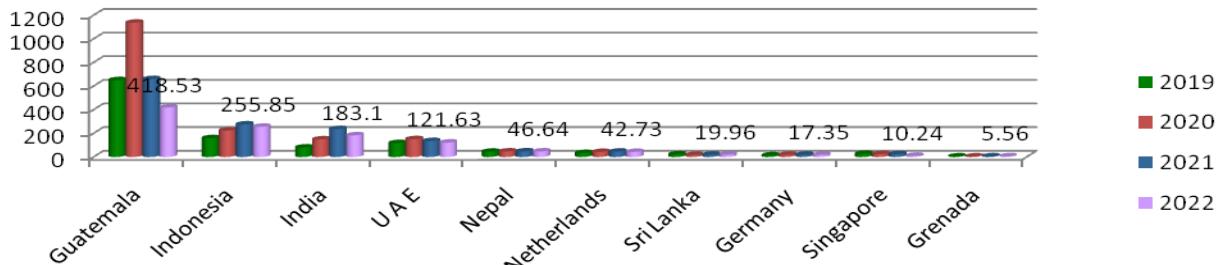
World's Top 10 exporter of Nutmeg, Mace and Cardamoms (HS Code -0908)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Guatemala	650.44	52.74	1136.60	58.42	659.14	41.37	418.53	35.50
2.	Indonesia	159.24	12.91	222.97	11.46	274.91	17.25	255.85	21.70
3.	India	80.19	6.50	148.92	7.65	236.22	14.83	183.10	15.53
4.	U A E	117.59	9.53	150.72	7.75	134.96	8.47	121.63	10.32
5.	Nepal	44.42	3.60	46.71	2.40	47.20	2.96	46.64	3.96
6.	Netherlands	33.29	2.70	42.25	2.17	45.59	2.86	42.73	3.62
7.	Sri Lanka	21.54	1.75	17.58	0.90	19.31	1.21	19.96	1.69
8.	Germany	13.54	1.10	18.40	0.95	19.24	1.21	17.35	1.47
9.	Singapore	26.17	2.12	24.26	1.25	23.44	1.47	10.24	0.87
10.	Grenada	4.92	0.40	4.52	0.23	5.58	0.35	5.56	0.47
	Others	81.88	6.64	132.79	6.82	127.79	8.02	57.33	4.86
	Total	1233.22	100	1945.72	100	1593.37	100	1178.91	100

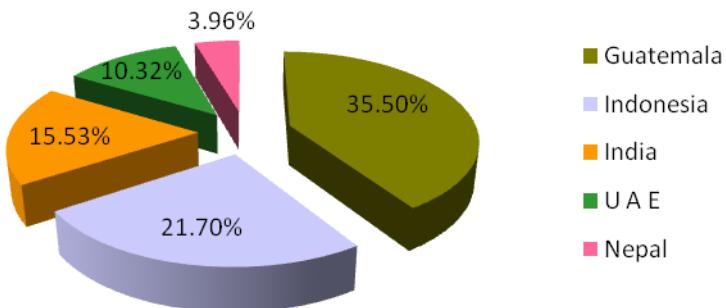
Source: UN Comtrade

Leading exporters of Nutmeg, Mace & Cardamom of world from 2019 to 2022 (in million USD)

Data label given on the basis of 2022



Country wise world's leading exporter of Nutmeg, Mace & Cardamom by percentage in 2022



In 2022, the world exports of Nutmeg, Mace & Cardamom was more than US \$ 1.17 billion. It was US \$ 1.59 billion in the year 2021. Guatemala has the highest export volume of Nutmeg, Mace & Cardamom of any country, at about US \$ 418.53 Million, accounted 35.50% share of world export. The second largest Nutmeg, Mace & Cardamom exporter, Indonesia, exported the same in that year at about US \$ 255.85 Million, which was accounted 21.70% of world export. In that year **India** stood at 3rd largest exporter of Nutmeg, Mace & Cardamom in the world, exported US \$ 183.10 Million or accounted 15.53% share of world export of Nutmeg, Mace & Cardamom.

Table-3

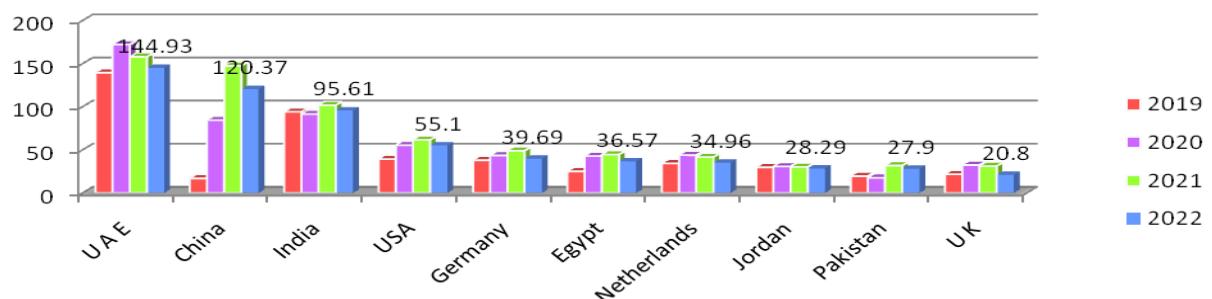
World's top 10 Importers of Nutmeg, Mace and Cardamoms (HS Code -0908)

Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	U A E	139.47	15.55	172.14	13.69	157.87	12.50	144.93	17.54
2.	China	16.78	1.87	84.43	6.71	147.40	11.67	120.37	14.57
3.	India	94.07	10.49	91.41	7.27	101.74	8.06	95.61	11.57
4.	USA	39.21	4.37	55.33	4.40	61.56	4.87	55.10	6.67
5.	Germany	37.84	4.22	43.48	3.46	48.83	3.87	39.69	4.80
6.	Egypt	25.03	2.79	42.74	3.40	44.45	3.52	36.57	4.43
7.	Netherlands	34.27	3.82	43.83	3.48	41.54	3.29	34.96	4.23
8.	Jordan	29.66	3.31	30.74	2.44	30.12	2.38	28.29	3.42
9.	Pakistan	19.44	2.17	17.56	1.40	31.71	2.51	27.90	3.38
10.	U K	21.60	2.41	32.30	2.57	31.05	2.46	20.80	2.52
	Others	439.49	49.00	643.88	51.19	566.78	44.87	221.92	26.86
	Total	896.86	100	1257.85	100	1263.06	100	826.14	100

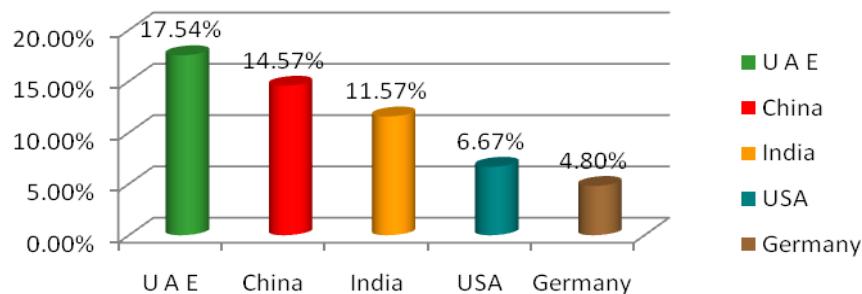
Source : UN Comtrade

Leading Nutmeg, Mace & Cardamom importers of world from 2019 to 2022(in million USD)

Data label given on the basis of 2022



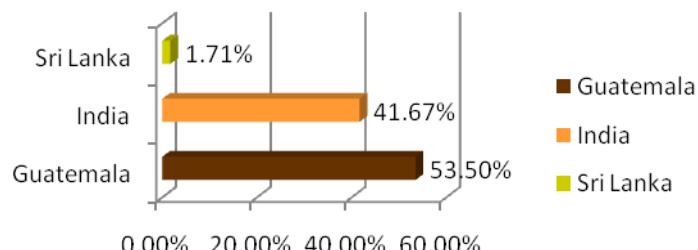
Country wise world's leading importers of Nutmeg, Mace & Cardamom by percentage in 2022



Global purchases of imported Nutmeg, Mace & Cardamom cost a total US \$ 826.14 million in 2022. In that year, imported Nutmeg, Mace & Cardamom depreciated by 34.60% from US \$ 1.26 billion during 2021. From a major importing countries perspective, UAE consumed the highest dollar worth of imported Nutmeg, Mace & Cardamom during 2022 with purchases valued at US \$ 144.93 million or 17.54 % of the world total. In second and third place were China (US \$ 120.37M) and **India (US \$ 95.61M)** at 14.57% and 11.57% of globally imported Nutmeg, Mace & Cardamom in 2022.

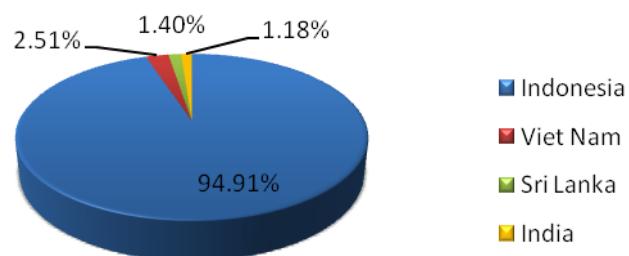
Top sources of world's top three importers of Nutmeg, Mace and Cardamoms (HS Code -0908)

Top 3 Sources of Nutmeg, Mace & Cardamom to UAE in 2022 by percentage:



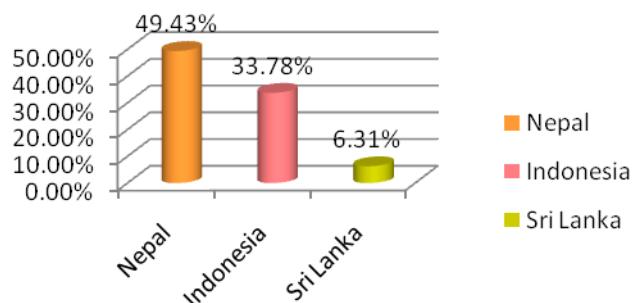
In 2022, UAE imported 53.50% share of Nutmeg, Mace & Cardamom from Guatemala. **India** was the 2nd major source country of Nutmeg, Mace & Cardamom to UAE, exported 41.67% share of UAE's total import of Nutmeg, Mace & Cardamom. It was followed by Sri Lanka, exported 1.71% share of Nutmeg, Mace & Cardamom to UAE in that year. **Source : UN Comtrade**)

ii) Top 3 Sources of Nutmeg, Mace & Cardamom to China in 2022 by percentage:



In 2022 China imports most of its requirements of Nutmeg, Mace & Cardamom from Indonesia with a share of 94.94% , 2nd and 3rd largest exporter of the commodity to China were Viet Nam and Sri Lanka with a share of 2.51% and 1.40% respectively. India exported 1.18% share of China's total import of Nutmeg, Mace & Cardamom in that year. **Source: UN Comtrade**).

iii) Top 3 Sources of Nutmeg, Mace & Cardamom to India in 2022 by percentage:



India's 3 major source countries of Nutmeg, Mace & Cardamom in 2022 were Nepal (49.43%), Indonesia (33.78%) and Sri Lanka (6.31%). (**Source: UN Comtrade**).

Potatoes, Fresh or Chilled

The **potato** is a starchy food, a tuber of the plant *Solanum tuberosum* and is a root vegetable native to the Americas. The plant is a perennial in the nightshade family Solanaceae.

Wild potato species can be found from the southern United States to southern Chile. The potato was originally believed to have been domesticated by Native Americans independently in multiple locations, but later genetic studies traced a single origin, in the area of present-day southern Peru and extreme northwestern Bolivia. Potatoes were domesticated there approximately 7,000–10,000 years ago. In the Andes region of South America, where the species is indigenous, some close relatives of the potato are cultivated.

Potatoes were introduced to Europe from the Americas by the Spanish in the second half of the 16th century. Today they are a staple food in many parts of the world and an integral part of much of the world's food supply. As of 2014, potatoes were the world's fourth-largest food crop after maize, wheat, and rice. Following millennia of selective breeding, there are now over 5,000 different types of potatoes. Over 99% of potatoes presently cultivated worldwide descend from varieties that originated in the lowlands of south-central Chile. The importance of the potato as a food source and culinary ingredient varies by region and is still changing. It remains an essential crop in Europe, especially Northern and Eastern Europe, where per capita production is still the highest in the world, while the most rapid expansion in production during the 21st century was in southern and eastern Asia, with China and India leading the world production of 376 million tonnes (370,000,000 long tons; 414,000,000 short tons), as of 2021.

Like the tomato, the potato is a nightshade in the genus *Solanum*, and the vegetative and fruiting parts of the potato contain the toxin solanine which is dangerous for human consumption. Normal potato tubers that have been grown and stored properly produce glycoalkaloids in amounts small enough to be negligible for human health, but, if green sections of the plant (namely sprouts and skins) are exposed to light, the tuber can accumulate a high enough concentration of glycoalkaloids to affect human health.

Potato plants are herbaceous perennials that grow about 60 cm (24 in) high, depending on variety, with the leaves dying back after flowering, fruiting and tuber formation. They bear white, pink, red, blue, or purple flowers with yellow stamens. Potatoes are mostly cross-pollinated by insects such as bumblebees, which carry pollen from other potato plants, though a substantial amount of self-fertilizing occurs as well. Tubers form in response to decreasing day length, although this tendency has been minimized in commercial varieties.

There are about 5,000 potato varieties worldwide. Three thousand of them are found in the Andes alone, mainly in Peru, Bolivia, Ecuador, Chile, and Colombia. They belong to eight or nine species, depending on the taxonomic school. Apart from the 5,000 cultivated varieties, there are about 200 wild species and subspecies, many of which can be cross-bred with cultivated varieties. Cross-breeding has been done repeatedly to transfer resistances to certain pests and diseases from the gene pool of wild species to the gene pool of cultivated potato species.

Boiled potato pulp with skin is 77% water, 20% carbohydrates, 2% protein, and contains negligible fat (table). In a reference amount of 100 grams (3.5 oz), boiled potato supplies 87 calories of food energy, and is a rich source of vitamin B6 (23% of the Daily Value, DV), with moderate contents (10–16% DV) of some B vitamins and vitamin C (table). Other micronutrients are below 10% of the DV.

Potatoes are prepared in many ways: skin-on or peeled, whole or cut up, with seasonings or without. The only requirement involves cooking to swell the starch granules. Most potato dishes are served hot but some are first cooked, then served cold, notably potato salad and potato chips (crisps). Common dishes are: mashed potatoes, which are first boiled (usually peeled), and then mashed with milk or yogurt and butter; whole baked potatoes; boiled or steamed potatoes; French-fried potatoes or chips; cut into cubes and roasted; scalloped, diced, or sliced and fried (home fries); grated into small thin strips and fried (hash browns); grated and formed into dumplings, potato pancakes. Potatoes can also be cooked in a microwave oven to produce a meal very similar to a steamed potato, while retaining the appearance of a conventionally baked potato.

These are broadly classified under **H.S. Code-0701**.

Table - 4

India's Top 10 destination of Potatoes, Fresh or Chilled (HS Code –0701)

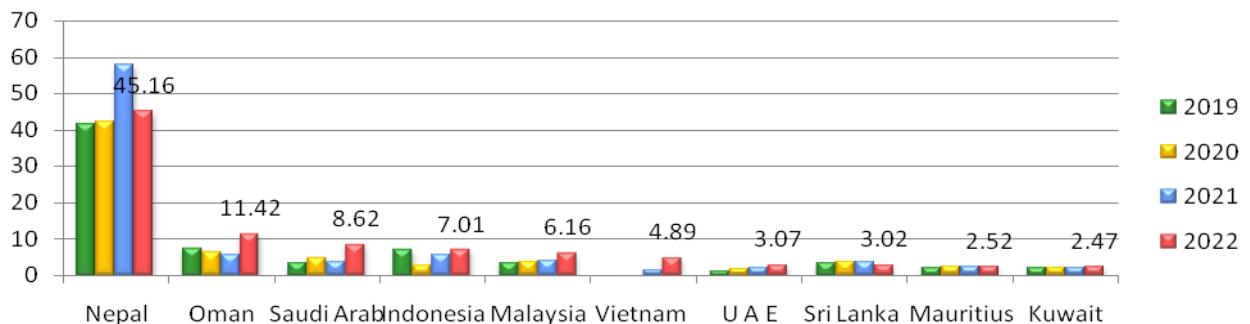
Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Nepal	41.58	53.01	42.09	54.40	57.90	60.88	45.16	45.20
2.	Oman	7.59	9.68	6.48	8.37	5.84	6.14	11.42	11.43
3.	Saudi Arab	3.46	4.42	4.71	6.09	3.99	4.20	8.62	8.63
4.	Indonesia	7.04	8.98	2.82	3.64	5.94	6.25	7.01	7.02
5.	Malaysia	3.68	4.70	4.05	5.23	4.17	4.38	6.16	6.17
6.	Vietnam	0.04	0.05	0.36	0.46	1.44	1.52	4.89	4.89
7.	U A E	1.24	1.58	1.84	2.38	2.28	2.40	3.07	3.07
8.	Sri Lanka	3.65	4.65	4.05	5.24	3.84	4.03	3.02	3.02
9.	Mauritius	2.23	2.85	2.54	3.28	2.56	2.69	2.52	2.52
10.	Kuwait	2.11	2.69	2.33	3.02	2.36	2.48	2.47	2.47
	Others	5.80	7.40	6.11	7.89	4.78	5.03	5.56	5.58
	Total	78.43	100	77.37	100	95.11	100	99.91	100

Source: DGCI&S

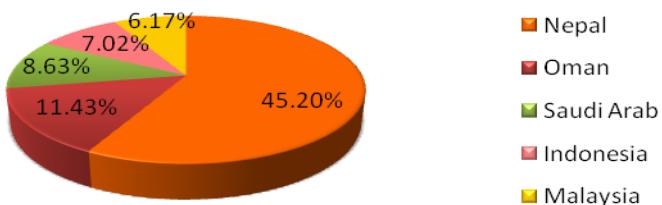
Note : India's Export including re-export

Destinations of Indian Potatoes, Fresh or Chilled from 2019-2022(**Values in million USD**)

Data label given on the basis of 2022



India's top 5 major destinations of Potatoes, Fresh or Chilled by percentage in 2022:



In the year 2022, the total export value of Potatoes, Fresh or Chilled from India was US \$ 99.91 Million and riches pick in this year. Nepal was the largest destination of Potatoes, Fresh or Chilled from India in 2022. It has imported US \$ 45.16 Million in 2022, accounted 45.20% share of India's total export. Oman (US \$ 11.42M) and Saudi Arab (US \$ 8.62M) stood at 2nd and 3rd largest destination of Potatoes, Fresh or Chilled form India with 11.43% and 8.63% share respectively of India's total export of Potatoes, Fresh or Chilled in the same year.

Table - 5

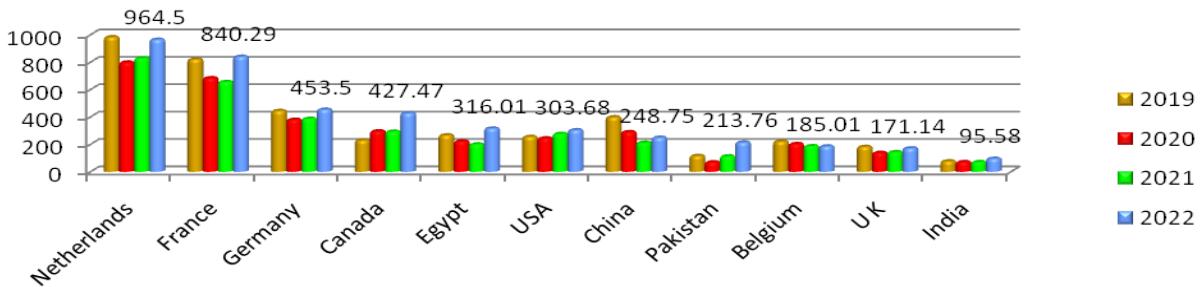
World's Top 10 exporters of Potatoes, Fresh or Chilled (HS Code -0701)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Netherlands	982.71	19.19	798.16	18.30	827.59	18.88	964.50	19.17
2.	France	820.57	16.03	683.80	15.68	655.64	14.95	840.29	16.70
3.	Germany	444.32	8.68	380.06	8.72	386.87	8.82	453.50	9.01
4.	Canada	228.85	4.47	296.02	6.79	292.54	6.67	427.47	8.50
5.	Egypt	266.26	5.20	221.95	5.09	200.20	4.57	316.01	6.28
6.	USA	255.47	4.99	244.47	5.61	275.94	6.29	303.68	6.04
7.	China	398.01	7.77	289.75	6.64	212.13	4.84	248.75	4.94
8.	Pakistan	115.29	2.25	69.85	1.60	112.43	2.56	213.76	4.25
9.	Belgium	220.89	4.31	203.00	4.66	187.15	4.27	185.01	3.68
10.	U K	182.05	3.56	138.75	3.18	142.97	3.26	171.14	3.40
12	India	76.60	1.50	71.64	1.64	70.92	1.62	95.58	1.90
	Others	1128.79	22.05	963.06	22.09	1019.91	23.26	811.73	16.13
	Total	5119.80	100	4360.51	100	4384.30	100	5031.43	100

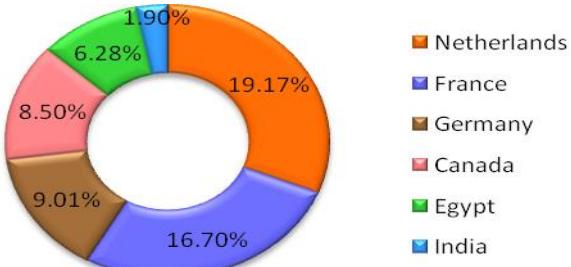
Source: UN Comtrade

World Export of Potatoes, Fresh or Chilled from 2019 to 2022 (**Values in million USD**)

Data label given on the basis of 2022



Country wise export trends of Potatoes, Fresh or Chilled by percentage in 2022:



In 2022, the world imports of Potatoes, Fresh or Chilled was US \$ 5.03 billion. It was US \$ 4.38 billion in 2021, shows the rise of 14.76% compare to the 2021. Netherlands was the world's largest exporter of Potatoes, Fresh or Chilled in the world over the review period, it has exported US \$ 964.50 Million of the commodity, which was accounted 19.17% share of world export in 2022 followed by France (US \$ 840.29 M) and Germany (US \$ 453.50 M) with 16.70% and 9.01% share . In that year **India** exported US \$ 95.58 Million worth of Potatoes, Fresh or Chilled to the world and stood at 12th position in ranking in the world with 1.90% share of global export.

Table - 6

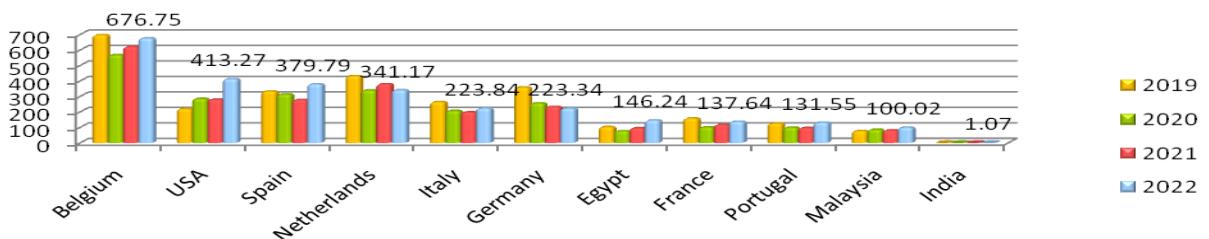
World's Top 10 Importers of Potatoes, Fresh or Chilled (HS Code –0701)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Belgium	697.62	13.75	568.10	12.76	621.94	13.68	676.75	14.12
2.	USA	220.32	4.34	285.76	6.42	280.78	6.18	413.27	8.62
3.	Spain	333.39	6.57	314.12	7.06	278.15	6.12	379.79	7.92
4.	Netherlands	432.28	8.52	340.14	7.64	379.88	8.36	341.17	7.12
5.	Italy	264.83	5.22	207.63	4.66	198.76	4.37	223.84	4.67
6.	Germany	359.14	7.08	256.53	5.76	233.28	5.13	223.34	4.66
7.	Egypt	103.06	2.03	76.81	1.73	96.26	2.12	146.24	3.05
8.	France	158.21	3.12	101.40	2.28	117.26	2.58	137.64	2.87
9.	Portugal	125.80	2.48	99.64	2.24	97.20	2.14	131.55	2.74
10.	Malaysia	77.66	1.53	85.90	1.93	81.46	1.79	100.02	2.09
114.	India	0.02	0.00	0.03	0.00	0.75	0.02	1.07	0.02
	Others	2302.21	45.37	2116.20	47.53	2160.42	47.52	2018.85	42.12
	Total	5074.54	100	4452.26	100	4546.13	100	4793.53	100

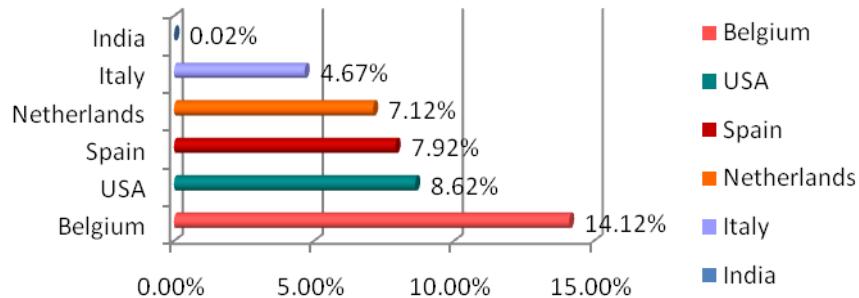
Source :UNComtrade

Potatoes, Fresh or Chilled importers of world from 2019 to 2022 (**Values in million USD**)

Data label given on the basis of 2022



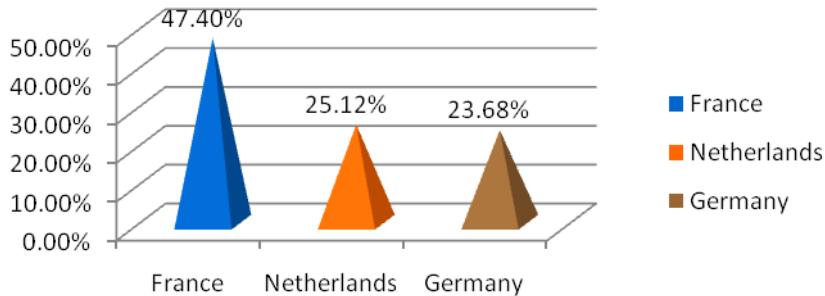
Country wise import trends of Potatoes, Fresh or Chilled by percentage in 2022



The value of global imports of Potatoes, Fresh or Chilled totalled US \$ 4.79 Billion in 2022. Which was increased by 5.44% than previous year. With the value of US \$ 5.07 Billion the world export of Potatoes, Fresh or Chilled reaches picked in the year 2019. Belgium represented the major importer of Potatoes, Fresh or Chilled in the world, recording US \$ 676.75 Million, which was 14.12% of total global imports in 2022, followed by USA (US \$ 413.27 M or 8.62%) and Spain (US \$ 379.79 or 7.92%). India represented the 114th largest importer of Potatoes, Fresh or Chilled in the world in 2022 with the value of US \$ 1.07 Million or 0.02% share of world import.

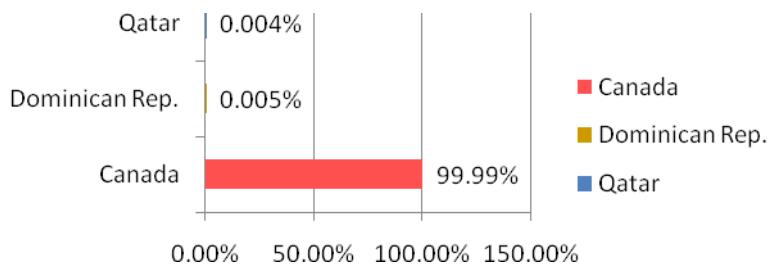
Major sources of world's top three importers of Potatoes, Fresh or Chilled (HS Code –0701

(i) Top 3 Sources of Potatoes, Fresh or Chilled to Belgium in 2022 by percentage:



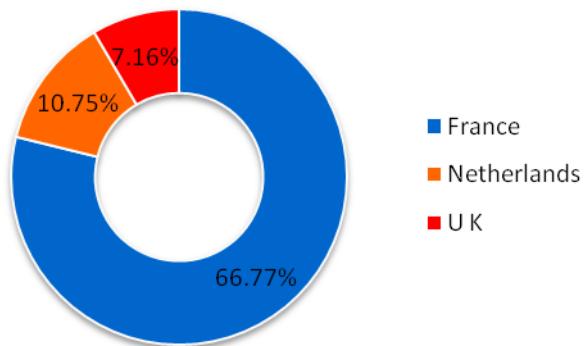
France was the principle source country of Potatoes, Fresh or Chilled to Belgium in 2022. Belgium imported over 47.40% of the commodity from France, it was followed by Netherlands (25.12%) and Germany (23.68%). India has no share in that year. (**Source: UN Comtrade**)

(ii) Top 3 Sources of Potatoes, Fresh or Chilled to USA in 2022 by percentage:



Almost 100% share of USA's import of Potatoes, Fresh or Chilled exported from Canada in 2022. In that year Dominican Rep. and Qatar has exported 0.005% and 0.004% share of Potatoes, Fresh or Chilled to USA respectively. In that year India has no trade to USA. (**Source: UN Comtrade**)

(iii) Top 3 Sources of Potatoes, Fresh or Chilled to Spain in 2022 by percentage:



Almost 66.77% of Potatoes, Fresh or Chilled imports of Spain came from France in 2022. Netherlands (10.75 %) and U K 7.16%) were another important source countries of Potatoes, Fresh or Chilled to Spain respectively in that year. In 2022 year there was no export of Potatoes, Fresh or Chilled from India to Spain. (**Source : UN Comtrade**).

IMPORT

Interchangeable Tools for Hand Tools

Interchangeable Tools are parts (components) that are identical for practical purposes. They are made to specifications that ensure that they are so nearly identical that they will fit into any assembly of the same type. One such part can freely replace another, without any custom fitting, such as filing. This interchangeability allows easy assembly of new devices, and easier repair of existing devices, while minimizing both the time and skill required of the person doing the assembly or repair. The concept of interchangeability was crucial to the introduction of the assembly line at the beginning of the 20th century, and has become an important element of some modern manufacturing but is missing from other important industries.

Interchangeability of parts was achieved by combining a number of innovations and improvements in machining operations and the invention of several machine tools, such as the slide rest lathe, screw-cutting lathe, turret lathe, milling machine and metal planer. Additional innovations included jigs for guiding the machine tools, fixtures for holding the workpiece in the proper position, and blocks and gauges to check the accuracy of the finished parts. Electrification allowed individual machine tools to be powered by electric motors, eliminating line shaft drives from steam engines or water power and allowing higher speeds, making modern large-scale manufacturing possible

Methods for industrial production of interchangeable parts in the United States were first developed in the nineteenth century. The term *American system of manufacturing* was sometimes applied to them at the time, in distinction from earlier methods. Within a few decades such methods were in use in various countries.

Evidence of the use of interchangeable Tools can be traced back over two thousand years to Carthage in the First Punic War. Carthaginian ships had standardized, interchangeable parts that even came with assembly instructions akin to "tab A into slot B" marked on them. In East Asia, during the Warring States period and later the Qin Dynasty, bronze crossbow triggers and locking mechanisms were mass-produced and made to be interchangeable.^[1]

In the late 18th century, French General Jean-Baptiste Vaquette de Gribeauval promoted standardized weapons in what became known as the *Système Gribeauval* after it was issued as a royal order in 1765. (Its focus at the time was artillery more than muskets or handguns.) One of the accomplishments of the system was that solid cast cannons were bored to precise tolerances, which allowed the walls to be thinner than cannons poured with hollow cores. However, because cores were often off center, the wall thickness determined the size of the bore. Standardized boring allowed cannons to be shorter without sacrificing accuracy and range because of the tighter fit of the shells. It also allowed standardization of the shells.

Overall, while interchangeable Tools have played a significant role in the evolution of modern manufacturing, it is essential to carefully consider the potential drawbacks and limitations before fully committing to this approach in any given industry or product line.

Numerous inventors began to try to implement the principle Blanc had described. The development of the machine tools and manufacturing practices required would be a great expense to the U.S. Ordnance Department, and for some years while trying to achieve interchangeability, the firearms produced cost more to manufacture. By 1853, there was evidence that interchangeable parts, then perfected by the Federal Armories, led to savings. The Ordnance Department freely shared the techniques used with outside suppliers.

Examples like the one above are not as common in real commerce as they conceivably could be, mostly because of separation of concerns, where each part of a complex system is expected to give performance that does not make any limiting assumptions about other parts of the system. In the car transmission example, the separation of concerns is that individual firms and customers accept no lack of freedom or options from others in the supply chain. For example, in the car buyer's view, the car manufacturer is "not within its rights" to assume that no field-service mechanic will ever repair the old transmission instead of replacing it.

These are broadly classified under **H. S. Code- 8207**

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Table - 7

India's Top 10 Sources of Interchangeable Tools for Hand Tools (HS Code : 8207)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	China	90.83	14.82	115.53	23.78	162.57	28.79	141.00	25.63
2.	Korea RP	209.50	34.18	148.78	30.62	119.68	21.20	110.11	20.01
3.	Japan	98.18	16.02	60.25	12.40	74.60	13.21	88.85	16.15
4.	Germany	52.96	8.64	44.25	9.11	63.14	11.18	59.16	10.75
5.	U S A	28.04	4.57	29.56	6.08	32.86	5.82	32.99	6.00
6.	U A E	14.57	2.38	7.64	1.57	8.38	1.48	13.11	2.38
7.	Singapore	10.66	1.74	9.08	1.87	10.87	1.92	12.52	2.28
8.	Italy	10.43	1.70	8.11	1.67	12.78	2.26	11.34	2.06
9.	Taiwan	15.69	2.56	11.78	2.42	17.78	3.15	11.09	2.01
10.	Thailand	10.92	1.78	5.06	1.04	5.08	0.90	10.89	1.98
	Others	71.21	11.62	45.89	9.44	56.85	10.07	59.15	10.75
	Total	612.99	100	485.93	100	564.58	100	550.22	100

Source: DGCI&S

Note : India's Import including Re-import

The above data indicates that India's import of Interchangeable Tools for Hand Tools has decreased to US \$ 550.22 million in 2022 from US \$ 564.58 million in 2021, which shows a negative growth of (-) 2.54% from the previous year's import i.e. in 2021. In the year 2022 China was the largest exporter of Interchangeable Tools for Hand Tools to India, it has exported US \$ 141 Million of the commodity, which was accounted 25.63% share of world export in 2022 followed by Korea RP (US \$ 110.11 M) and Japan (US \$ 88.85M) with 20.01% and 16.15% share .

World Top 10 Importer of Interchangeable Tools for Hand Tools (HS Code : 8207)

Rank	Countries	2019		2020		2021		2022	
		Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	USA	3071.40	13.63	2799.00	14.08	3217.38	13.64	3252.82	15.00
2.	Germany	2238.63	9.93	1994.44	10.04	2519.75	10.68	2330.44	10.75
3.	Mexico	1222.32	5.42	1014.82	5.11	1212.81	5.14	1278.68	5.90
4.	China	1741.71	7.73	1396.49	7.03	1476.97	6.26	1171.07	5.40
5.	Canada	775.56	3.44	736.91	3.71	885.84	3.75	997.49	4.60
6.	France	731.68	3.25	649.63	3.27	711.82	3.02	681.38	3.14
7.	Italy	587.22	2.61	503.29	2.53	628.19	2.66	635.30	2.93
8.	U K	505.78	2.24	450.36	2.27	544.34	2.31	591.79	2.73
9.	Thailand	623.96	2.77	532.68	2.68	648.83	2.75	568.68	2.62
10.	India	612.91	2.72	487.45	2.45	564.77	2.39	552.54	2.55
	Others	10421.68	46.25	9307.55	46.84	11180.58	47.39	9621.77	44.38
	Total	22532.84	100	19872.62	100	23591.27	100	21681.96	100

Source :UN Comtrade

The worth value of Global import of Interchangeable Tools for Hand Tools was nearly US \$ 21.68 billion in 2022 which was down by 8.09 % compare to the year 2021. USA has became the world's largest importer of Interchangeable Tools for Hand Tools among world's largest importers. Imports US \$ 3.25 Billion worth of Interchangeable Tools for Hand Tools which was accounted 15% share of world's import of it in 2022, followed by Germany (US \$ 2.33 B) and Mexico (US \$ 1.28 B) or 10.75% and 5.90% share of global total. In the same year India's imports of Interchangeable Tools for Hand Tools was US \$ 552.54 million and its share in the world-wide export market of this product was 2.55 % of total world import trade value of Interchangeable Tools for Hand Tools and ranked in 10th position in the world.

Biodiesel and Mixtures Thereof

Biodiesel is a form of diesel fuel derived from plants or animals and consisting of long-chain fatty acid esters. It is typically made by chemically reacting lipids such as animal fat (tallow), soybean oil, or some other vegetable oil with an alcohol, producing a methyl, ethyl or propyl ester by the process of transesterification.

Unlike the vegetable and waste oils used to fuel converted diesel engines, biodiesel is a drop-in biofuel, meaning it is compatible with existing diesel engines and distribution infrastructure. However, it is usually blended with petrodiesel (typically to less than 10%) since most engines cannot run on pure biodiesel without modification. Biodiesel blends can also be used as heating oil.

Blends of biodiesel and conventional hydrocarbon-based diesel are most commonly distributed for use in the retail diesel fuel marketplace. Much of the world uses a system known as the "B" factor to state the amount of biodiesel in any fuel mix. Blends of 20% biodiesel and lower can be used in diesel equipment with no, or only minor modifications, although certain manufacturers do not extend warranty coverage if equipment is damaged by these blends. The B6 to B20 blends are covered by the ASTM D7467 specification. Biodiesel can also be used in its pure form (B100), but may require certain engine modifications to avoid maintenance and performance problems.

Biodiesel is commonly produced by the transesterification of the vegetable oil or animal fat feedstock, and other non-edible raw materials such as frying oil, etc. There are several methods for carrying out this transesterification reaction including the common batch process, heterogeneous catalysts, supercritical processes, ultrasonic methods, and even microwave methods.

The color of biodiesel ranges from clear to golden to dark brown, depending on the production method and the feedstock used to make the fuel. This also changes the resulting fuel properties. In general, biodiesel is slightly miscible with water, has a high boiling point and low vapor pressure. The flash point of biodiesel can exceed 130 °C (266 °F), significantly higher than that of petroleum diesel which may be as low as 52 °C (126 °F). Biodiesel has a density around ~0.88 g/cm³, higher than petrodiesel (~0.85 g/cm³).

The calorific value of biodiesel is about 37.27 MJ/kg. This is 9% lower than regular Number 2 petrodiesel. Variations in biodiesel energy density is more dependent on the feedstock used than the production process. Still, these variations are less than for petrodiesel. It has been claimed biodiesel gives better lubricity and more complete combustion thus increasing the engine energy output and partially compensating for the higher energy density of petrodiesel.

Biodiesel also contains virtually no sulfur and although lacking sulfur compounds that in petrodiesel provide much of the lubricity, it has promising lubricating properties and cetane ratings compared to low sulfur diesel fuels and often serves as an additive to ultra-low-sulfur diesel (ULSD) fuel to aid with lubrication. Biodiesel Fuels with higher lubricity may increase the usable life of high-pressure fuel injection equipment that relies on the fuel for its lubrication. Depending on the engine, this might include high pressure injection pumps, pump injectors and fuel injectors.

Biodiesel can be used in pure form (B100) or may be blended with petroleum diesel at any concentration in most injection pump diesel engines. New extreme high-pressure (29,000 psi) common rail engines have strict factory limits of B5 or B20, depending on manufacturer. Biodiesel has different solvent properties from petrodiesel, and will degrade natural rubber gaskets and hoses in vehicles (mostly vehicles manufactured before 1992), although these tend to wear out naturally and most likely will have already been replaced with FKM, which is nonreactive to biodiesel. Biodiesel has been known to break down deposits of residue in the fuel lines where petrodiesel has been used. As a result, fuel filters may become clogged with particulates if a quick transition to pure biodiesel is made. Therefore, it is recommended to change the fuel filters on engines and heaters shortly after first switching to a biodiesel blend.

British train operating company Virgin Trains West Coast claimed to have run the UK's first "biodiesel train", when a Class 220 was converted to run on 80% petrodiesel and 20% biodiesel. On 8 July 2014, the then Indian Railway Minister D.V. Sadananda Gowda announced in Railway Budget that 5% bio-diesel will be used in Indian Railways' Diesel Engines.

These are broadly classified under **H. S. Code 3826**

India's Top 10 Sources of Biodiesel and Mixtures Thereof (HS Code :3826)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	China	0.57	12.93	0.22	26.86	0.70	47.30	1.30	59.36
2.	Belgium	0.00	0.00	0.43	52.44	0.06	4.05	0.49	22.37
3.	U S A	0.00	0.00	0.00	0.00	0.00	0.00	0.23	10.50
4.	Singapore	0.00	0.00	0.00	0.00	0.00	0.00	0.12	5.48
5.	Italy	0.00	0.00	0.00	0.00	0.00	0.00	0.03	1.37
6.	Germany	0.09	1.95	0.01	1.22	0.00	0.28	0.01	0.46
7.	Korea RP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13
8.	Kenya	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9.	Austria	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.	Brazil	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
	Others	3.75	85.03	0.16	19.51	0.71	47.97	0.00	0.00
	Total	4.41	100	0.82	100	1.48	100	2.19	100

Source: **DGCI&S**

Note : India's Import including re-import

There are 20 countries India imports Biodiesel and Mixtures Thereof from. The Biodiesel and Mixtures Thereof import in 2022 stood at US \$ 2.19 Million and US \$ 1.48 Million in 2021, which shows a growth of almost 48% from the 2021 of India's import value of Biodiesel and Mixtures Thereof. Major three source countries of Biodiesel and Mixtures Thereof to India in 2022 were China (US \$ 1.30 Million), Belgium (US \$ 0.49 Million) and USA (US \$ 0.23 Million). These 3 countries in total sold US \$ 2.02 Million value of Biodiesel and Mixtures Thereof to India which rounds up to 92.24% of the total Biodiesel and Mixtures Thereof import into India.

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Table - 8

World Top Importer of Biodiesel and Mixtures Thereof (HS Code :3826)

Rank	Countries	2019		2020		2021		2022	
		Value (million \$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)	Value (million\$)	Share (%)
1.	Netherlands	3418.23	22.45	3930.34	25.39	7154.43	27.95	8296.97	23.20
2.	France	1323.76	8.69	969.77	6.27	2168.57	8.47	3309.57	9.25
3.	Belgium	1189.01	7.81	1357.60	8.77	2486.62	9.71	3299.20	9.23
4.	Germany	1364.02	8.96	1611.77	10.41	1811.13	7.07	2951.53	8.25
5.	Spain	1415.84	9.30	1162.66	7.51	1892.64	7.39	2890.72	8.08
6.	Italy	719.36	4.72	1140.91	7.37	1819.63	7.11	2670.46	7.47
7.	U K	1017.01	6.68	1104.64	7.14	1297.84	5.07	2520.65	7.05
8.	USA	501.95	3.30	622.07	4.02	970.32	3.79	1447.63	4.05
9.	Canada	554.12	3.64	479.01	3.09	676.76	2.64	1357.84	3.80
10.	Bulgaria	392.60	2.58	367.53	2.37	599.95	2.34	1094.40	3.06
39	India	4.39	0.03	0.83	0.01	1.48	0.01	2.12	0.01
	Others	3327.12	21.85	2730.98	17.64	4722.13	18.44	5922.25	16.56
	Total	15227.40	100	15478.10	100	25601.54	100	35761.78	100

Source :UNComtrade

The value of global imports of Biodiesel and Mixtures Thereof totalled US \$ 36 Billion in 2022. Which was increased by 39.69% than previous year. The world import of Biodiesel and Mixtures Thereof reaches picked in the year 2022. Netherlands represented the major importer of Biodiesel and Mixtures Thereof in the world, recording US \$ 8.30 Billion, which was 23.20% of total global imports in 2022, followed by France (US \$ 3.30 B) and Belgium (US \$ 3.30%) represented 9.25% and 9.23% share of global total . India's import of Biodiesel and Mixtures Thereof in 2022 was the value of US \$ 2.12 Million or 0.01% share of world import.