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## Mustard Seed

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### Background

Mustard, *Brassica* spp., is an annual, cool season crop that is native to the temperate regions of Europe and allegedly one of the first domesticated crops. Mustard has been grown as an herb in Asia, North Africa, and Europe for thousands of years. It has been a specialty crop in North America since World War II interrupted supplies from Western Europe.

Mustard seed is a relative to canola that has a short growing season and is typically grown in rotation with small grains. It is tolerant to drought, heat, and frost. Mustard is best adapted to fertile and well-drained soils.

There are three types of mustard: yellow, brown, and oriental. Yellow

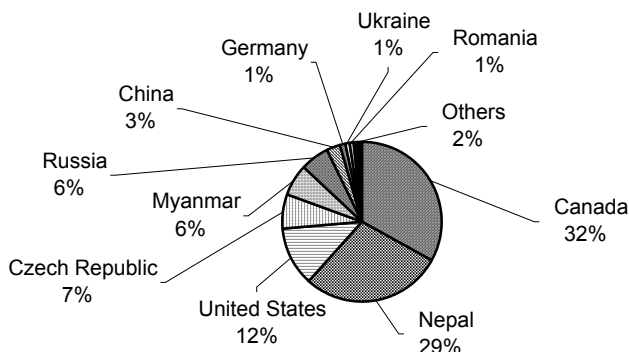
mustard, also called white mustard in Europe, is the most common mustard variety planted in North America, comprising about 90 percent of total U.S. mustard acreage and production. Brown and oriental mustard varieties are grown on limited acres and have lower seed yields than yellow mustard.

### Production

*World*<sup>1</sup>: In 2002, world production of mustard seed was about 469,000 metric tons. Mustard seed is produced in over 18 different countries.

<sup>1</sup> All data concerning world production of safflower is received from the FAOSTAT database of the Food and Agriculture Organization of the United Nations, which is compiled on a calendar year-basis. Marketing year and crop year information may yield somewhat different numerical results.

**Figure 1: Percentage of World Mustard Seed Production by Country: 2002**



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**Table 1: World Mustard Seed Production, Historical**

<i>Year</i>	<i>Production in Metric Tons</i>
1991	356,731
1992	348,326
1993	463,289
1994	532,317
1995	475,889
1996	451,435
1997	513,391
1998	548,544
1999	595,316
2000	462,409
2001	364,067
2002	468,725

Canada is the world's leading producer of mustard seed. Canada, Nepal, and the United States typically combine to produce nearly 73 percent of total world mustard seed production (Figure 1).

World mustard seed production increased steadily from the early 1990s to the late 1990s and has decreased somewhat over the past three years from a peak of 595 thousand metric tons in 1999 to 469 thousand metric tons in 2002 (Table 2).

*United States:* The United States accounted for 12 percent of world mustard seed production in 2002. In the United States the total

acreage planted to mustard seed has increased substantially over the last 12 years from 19,000 acres in 1991 and 191,000 acres in 2002 (Table 2). Under the FACT Act, mustard became eligible as a minor oilseed crop for marketing assistance loans in the 1991 crop year. Production of mustard seed has followed a similar trend to planted acres over the last 12 years with production reaching a peak of 56 thousand metric tons in 2002.

*Montana:* Montana has accounted for about ten percent of total United States production in recent years. Montana mustard seed production reached a peak of 8,097 metric tons in 1999 but was 38 percent lower in 2002. The area planted to mustard was 21,500 acres in 1999 to 11,000

**Table 2: United States Mustard Seed Production, Acreage and Production**

<i>Year</i>	<i>Acreage</i>		<i>Production</i>		
	<i>Planted (000)</i>	<i>Harvested (000)</i>	<i>Yield (lbs)/acre</i>	<i>Total (000) Pounds</i>	<i>Metric Tons</i>
1991	19	18	925	16,742	7,594
1992	15	14	980	14,504	6,579
1993	18.1	16.4	755	12,382	5,616
1994	13.6	13.4	970	12,998	5,896
1995	22.9	22	832	18,304	8,303
1996	19	18.6	785	14,601	6,623
1997	76.3	74.7	793	59,273	26,886
1998	98.9	95.6	855	81,750	37,082
1999	60.8	58.8	816	48,010	21,777
2000	46.3	43.2	855	36,930	16,751
2001	45.8	44.2	930	41,106	18,646
2002	191	175	705	123,450	55,997

acres in 2001, before increasing 27,000 acres in 2002. (Table 3).

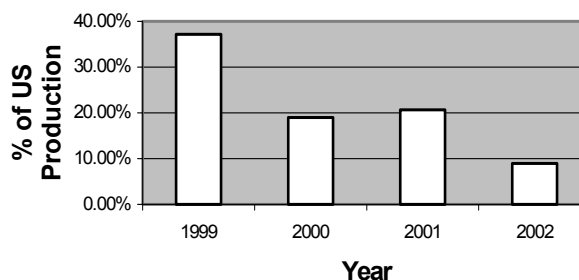
Montana's share of total United States mustard seed production was about 37 percent in 1999 but dropped sharply to only around 10 percent in 2002 (Figure 2) primarily due to drought-impacted yields.

*Domestic Competition:* In addition to farmers in other countries, producers of mustard seed in Montana must compete with other states for the United States mustard seed market. United States mustard seed acreage and production is not reported by state each year.

**Table 3: Montana Mustard Seed Production, Historical Production**

<i>Year</i>	<i>Acreage</i>		<i>Production</i>		
	<i>Planted (000)</i>	<i>Harvested (000)</i>	<i>Yield (lbs.)/acre</i>	<i>Total (000) Pounds</i>	<i>Metric Tons</i>
1999	21.5	21	850	17,850	8,097
2000	12	10	700	7,000	3,175
2001	11	10	850	8,500	3,856
2002	27	25	440	11,000	4,990

**Figure 2: Montana's Share of United States Total Mustard Seed Production**



## Consumption

Ancient Greeks and Romans used mustard as a paste and powder. Around 1300 AD the name “mustard” was given to the condiment that was made by mixing mustum, which is the Latin word for unfermented grape juice, with ground mustard seeds. Today, more than 700 million pounds of mustard are consumed worldwide each year.

Yellow mustard is typically used for prepared or “table” mustard, which is a condiment, and also as dry mustard. Dry mustard is used as a seasoning in mayonnaise, salad dressings, and sauces. Yellow mustard is also used to make flour that is used as an emulsifying agent and stabilizer for the production of sausages. The oil content of yellow mustard seed is around 27 percent.

Brown mustard seed has oil content of about 36 percent and is primarily ground into flour which is used to produce “hot” table mustard. Oriental mustard is about 39 percent oil and is often used to produce spicy cooking oils.

## Imports

In recent years, about 70 percent of the world’s production of mustard seed has been traded internationally. Around 250,000 metric tons of the world’s production was traded in international markets in the 2001 crop year.

In the 2001 crop year, the top three importing countries for mustard seed were Bangladesh, the United States, and Germany (Table 4). Collectively, these three countries account for around 59 percent of world mustard seed imports. The remaining imports are spread among many different countries, with over 92 countries reporting imports of mustard seed in 2001. The United States is a relatively large importer of mustard seed, with about a 19 percent share of total world mustard seed imports (Figure 3).

## Exports

The United States is a minor exporter of mustard seed. The United States exported 3,275 metric tons of mustard seed in 2001, accounting for approximately eight percent of total United States production and one percent of the world mustard exports (Table 5).

Canada is the world’s leading mustard seed exporter. Canada, the Czech Republic, and Germany accounted for approximately 80 percent of the world’s mustard seed exports in 2001 (Figure 4).

## Summary

World mustard seed production was nearly 470,000 metric tons in 2002. About 70 percent of world production is traded in international market annually.

The United States accounts for about 12 percent of world mustard seed production but only about one percent of world exports. The United States imported about 49,000 metric tons of mustard seed in 2001.

In recent years, Montana accounted for about ten percent of total U.S. mustard seed production. Mustard seed yield and total production decreased in Montana in recent years, likely due to prolonged drought.

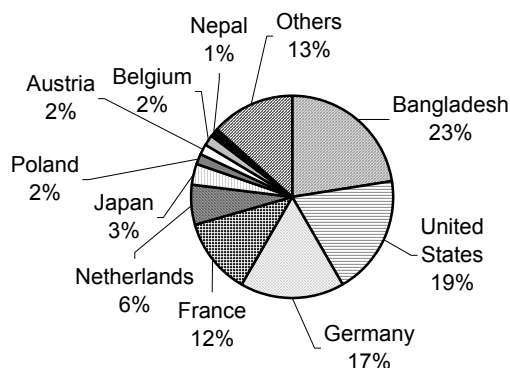
**Table 4: Major World Mustard Seed Importing Countries, 2001**

<i>Country</i>	<i>World Rank</i>	<i>Metric Tons</i>
Bangladesh	1	57,000
United States	2	48,778
Germany	3	42,066
France	4	30,984
Netherlands	5	16,219
Japan	6	8,438
Poland	7	4,432
Austria	8	4,226
Belgium	9	4,178
Nepal	10	3,600
Others		33,929
World Total		253,848

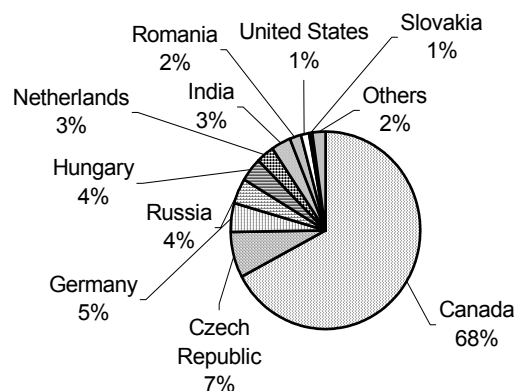
**Table 5: Major World Mustard Seed Exporting Countries, 2001**

<i>Country</i>	<i>World Rank</i>	<i>Metric Tons</i>
Canada	1	152,466
Czech Republic	2	16,883
Germany	3	10,537
Russia	4	9,983
Hungary	5	8,338
Netherlands	6	7,443
India	7	7,282
Romania	8	4,245
United States	9	3,275
Slovakia	10	1,277
Others		5,035
World Total		226,764

**Figure 3: Percent of World Mustard Seed Imports by Country: 2001**



**Figure 4: Percent of World Mustard Seed Exports by Country: 2001**



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