

Risk Management Education for Alternative Crops

Price Risk Issues for Alternative Crops

November 2001

OUTLINE

1. Loan Deficiency Payments

a. Eligible Crops

b. Beneficial Interest

2. Crop Rotations and Price Risk Effects

**a. Are These Crops Less Risky Than
Wheat???**

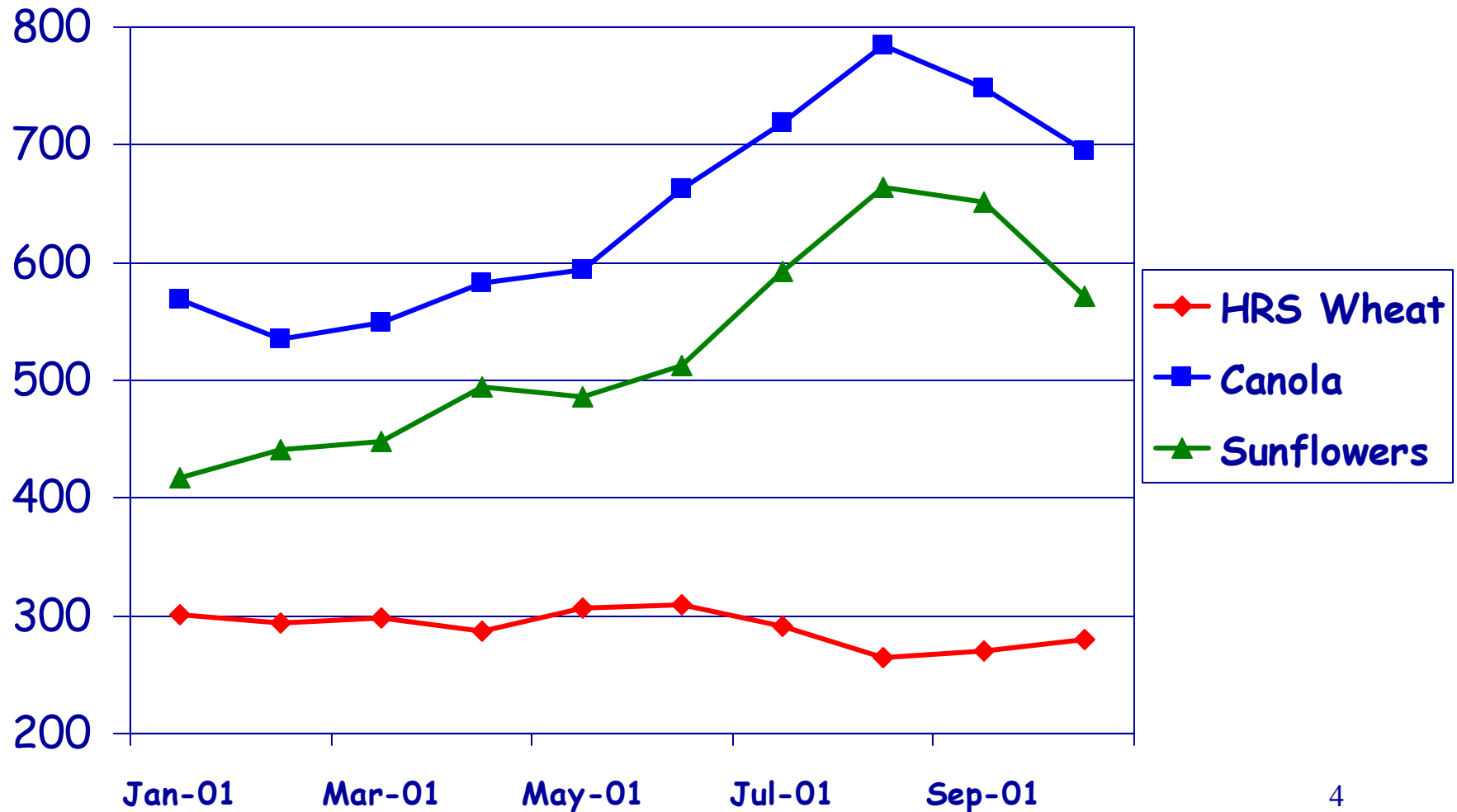
b. More Crops, Lower Risk????

Specialty Crop - Loan Rates

<u>Crop</u>	<u>Loan Rate (Range for WY)</u>
Barley	1.70 – 1.91
Canola	7.85 – 8.82
Crambe	6.54 – 8.06
Rapeseed	8.47 – 9.28
Flaxseed	8.36 - 9.04
Mustard	8.12 - 9.11
Safflower	7.08 – 8.13
Sunflower	8.18 – 9.21

Posted County Prices: Gallatin County, MT (Jan 2001-Oct 2001)

Cents/bu



Price Risk

Comparison of HRS Wheat/Canola/Sunflowers

Price Risk is measured as the variability of price, relative to it's average => Coefficient of Variation

HRS Wheat Price Risk => 5% Coefficient of Variation.

Canola Price Risk => 14% Coefficient of Variation

Sunflower Price Risk => 15% Coefficient of Variation.

Price Risk

LDP – Maintaining Beneficial Interest

To be eligible for LDP's on a crop, a producer must maintain beneficial interest. A producer retains beneficial interest if the producer has:

- Control of the Commodity**
- Risk of Loss**
- Title to the Commodity**

Price Risk

LDP – Maintaining Beneficial Interest

Control of the Commodity: Producer retains the ability to make all decisions affecting the movement, sale, and the request for a loan or an LDP.

Price Risk

LDP – Maintaining Beneficial Interest

Risk of Loss: The producer is responsible for loss of or damage to the commodity. If insured, any indemnity must be payable to the producer.

Price Risk

LDP – Maintaining Beneficial Interest

Title to the Commodity: A producer is considered to have transferred the title of the commodity if the producer has sold or delivered the commodity to the buyer or delivered warehouse receipts to the buyer. The transference of title may occur before the producer receives payment.

Price Risk

LDP – Maintaining Beneficial Interest

- Not all advance sales contracts give the buyer beneficial interest when the contract is signed
- Forward contracts, price later contracts and contracts for future delivery gives the buyer an interest in the commodity at a later time
- The producer gives up beneficial interest when the payment is made, not when the contract is signed.

Price Risk

LDP – Maintaining Beneficial Interest

The producer may give up beneficial interest at the time of signing if certain clauses are present:

- The buyer requires the producer to obtain a loan or an LDP
- The producer may obtain a loan or an LDP, only with prior approval of the buyer

Price Risk

LDP – Maintaining Beneficial Interest

- Addendums to specific contracts can also be used to clarify the beneficial interest between a producer and a buyer
- Consult your local FSA office for advice on contracts and beneficial interest as conditions are subject to change

OUTLINE

1. Loan Deficiency Payments

a. Eligible Crops

b. Beneficial Interest

2. Crop Rotations and Price Risk Effects

a. Are These Crops Less Risky Than Wheat???

b. More Crops, Lower Risk????

Are Alternative Crops Less Risky than Wheat?

U.S. Average Prices: 1992-2000

<u>Crop</u>	<u>Risk Measure</u>
Barley	15.2%
Canola	18.5%
Dry Beans	15.4%
Dry Peas	27.8%
Flaxseed	20.8%
Lentils	19.9%
Mustard	19.3%
Safflower	13.4%
Sunflower	20.3%
Wheat – Spring	16.7%
Wheat – Winter	23.3%

More Crops, Less Risk?

Depends on the Correlation between crop prices

Correlation – A measure of co-movement of prices over time.

+1.00 \Rightarrow Two prices move exactly the same over time

0.00 \Rightarrow Two prices have no relationship over time

-1.00 \Rightarrow Two prices move in opposite direction over time.

More Crops, Less Risk?

- **To reduce overall price risk**
 - **Want crops that have low price correlations**
 - **Even better, negative price correlations.**
- **Alternative crops are fairly correlated with Winter Wheat prices:**
 - **+0.43 (Mustard) to +0.81 (Dry Peas)**

More Crops, Less Risk?

Example Crop Rotations

Rotation	Overall Price Risk
50% Spring Wheat, 50% Winter Wheat	19.7%
	17

More Crops, Less Risk?

Example Crop Rotations

Rotation	Overall Price Risk
50% Spring Wheat, 50% Winter Wheat	19.7%
45% Spring Wheat, 45% Winter Wheat, 5% Flaxseed, 5% Dry Peas	19.6%
	18

More Crops, Less Risk?

Example Crop Rotations

Rotation	Overall Price Risk
50% Spring Wheat, 50% Winter Wheat	19.7%
45% Spring Wheat, 45% Winter Wheat, 5% Flaxseed, 5% Dry Peas	19.6%
40% Spring Wheat, 40% Winter Wheat, 5% Flaxseed, 5% Dry Peas, 5% Sunflower, 5% Mustard	17.8%

More Crops, Less Risk?

Example Crop Rotations

Rotation	Overall Price Risk
50% Spring Wheat, 50% Winter Wheat	19.7%
45% Spring Wheat, 45% Winter Wheat, 5% Flaxseed, 5% Dry Peas	19.6%
40% Spring Wheat, 40% Winter Wheat, 5% Flaxseed, 5% Dry Peas, 5% Sunflower, 5% Mustard	17.8%
35% Spring Wheat, 35% Winter Wheat, 5% Flaxseed, 5% Dry Peas, 5% Sunflower, 5% Mustard, 5% Canola, 5% Dry Beans	16.6%

More Crops, Less Risk?

Example Crop Rotations

Rotation	Overall Price Risk
50% Spring Wheat, 50% Winter Wheat	19.7%
45% Spring Wheat, 45% Winter Wheat, 5% Flaxseed, 5% Dry Peas	19.6%
40% Spring Wheat, 40% Winter Wheat, 5% Flaxseed, 5% Dry Peas, 5% Sunflower, 5% Mustard	17.8%
35% Spring Wheat, 35% Winter Wheat, 5% Flaxseed, 5% Dry Peas, 5% Sunflower, 5% Mustard, 5% Canola, 5% Dry Beans	16.6%
Equal amount of acreage in 10 crops.	15.3%

SUMMARY

Because many crop prices tend to move together over time and tend to be volatile, the substitution of an alternative crop may not reduce risk significantly and in some cases, may actually increase overall price risk.

Other Factors to Consider:

-Yield Risk

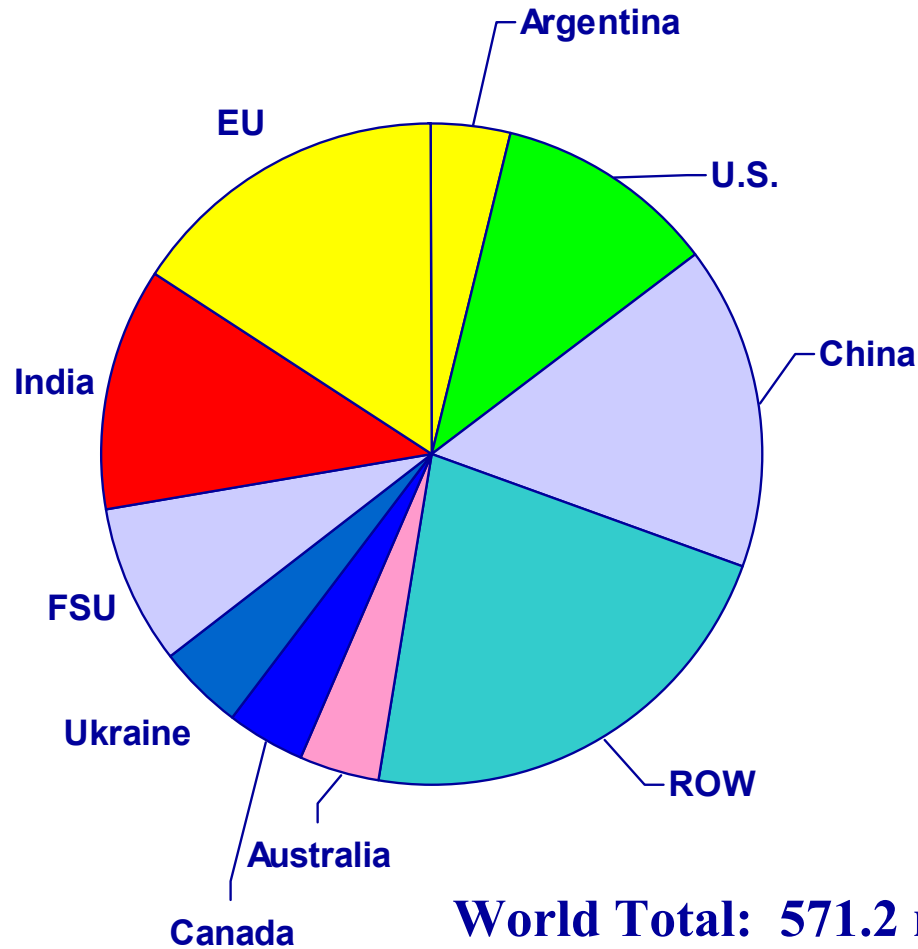
-Expected Returns

-Labor & Machinery Utilization

Wheat

(For Comparison)

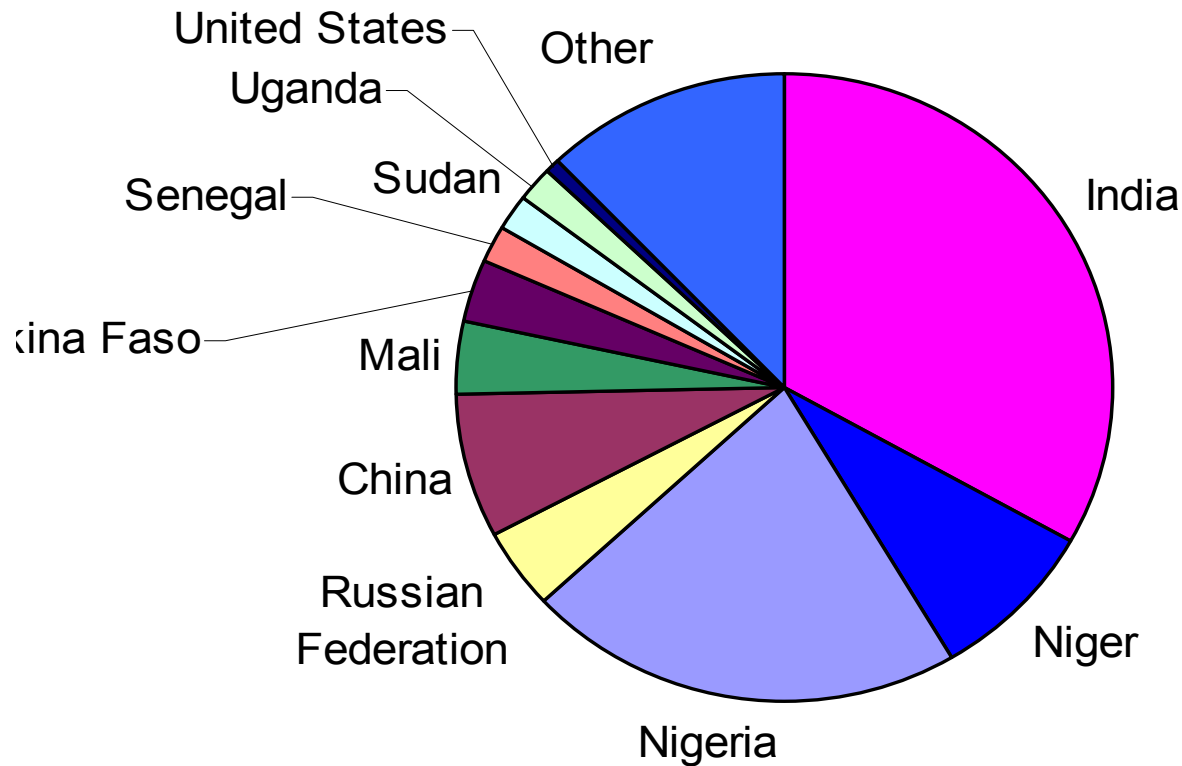
World Wheat Production by Country, 2000



World Total: 571.2 million metric tons

Millet

World Millet Production by Country, 2000



World Total: 27 Million Metric

World & U.S. Millet Production 1991-2000

Figure 1: World Millet Production

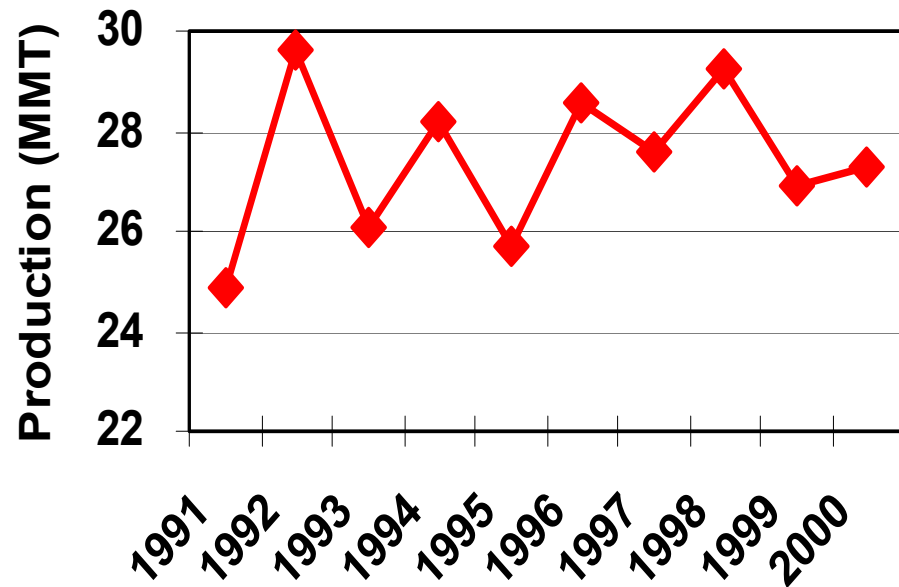
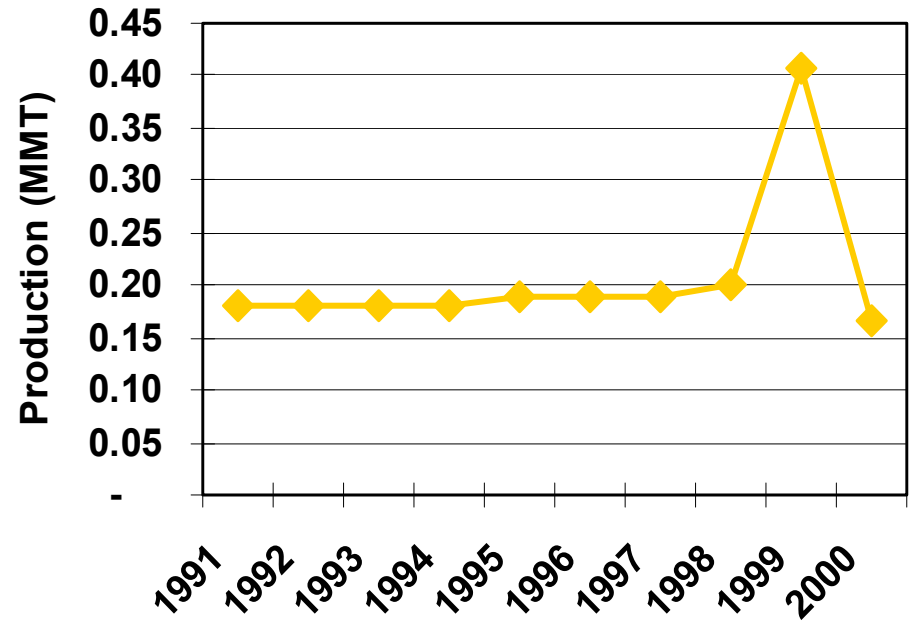


Figure 2: U.S. Millet Production



World Millet Imports and Exports, 2000

World Millet Imports, 2000

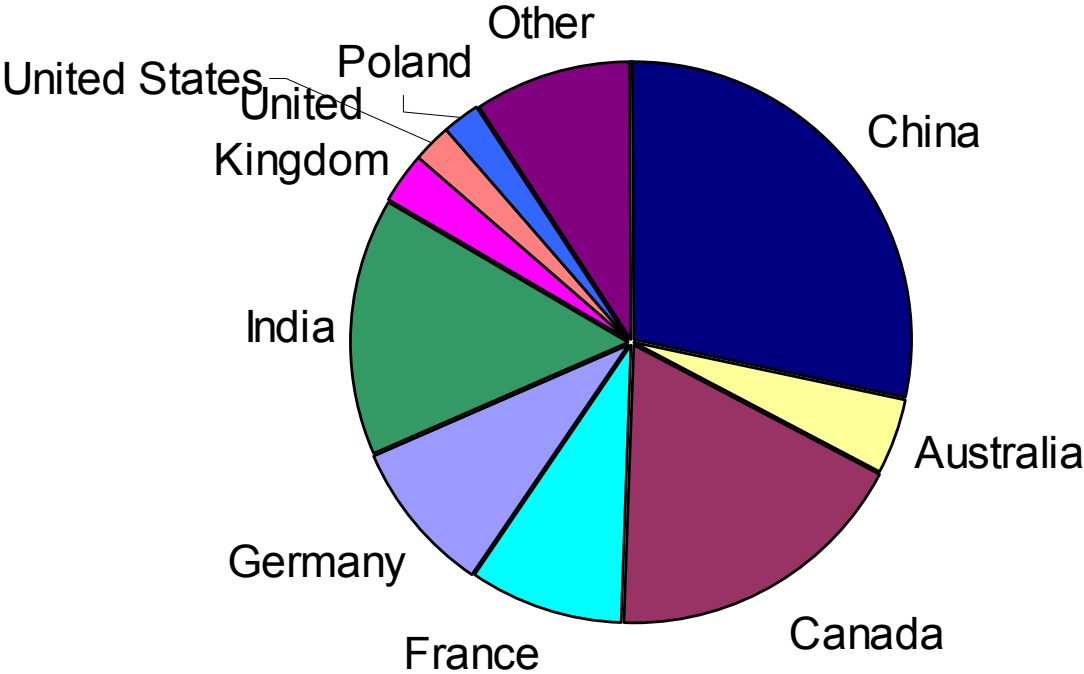
Millet Imports	Metric Tons	Share of World
Netherlands	7,948	13.46%
Germany	4,954	8.39%
Belgium-Luxembourg	4,638	7.85%
United States	1,119	1.89%
World Total	59,060	100.00%

World Millet Exports, 2000

Millet Exports	Metric Tons	Share of World
United States	10,207	20.13%
Netherlands	7,282	14.36%
Australia	4,996	9.85%
China	4,575	9.02%
World Total	50,699	100.00%

Canola

World Canola Production by Country, 2000



World Total: 40.2 Million Metric Tons

World & U.S. Canola Production 1991-2000

Figure 1: World Canola Production

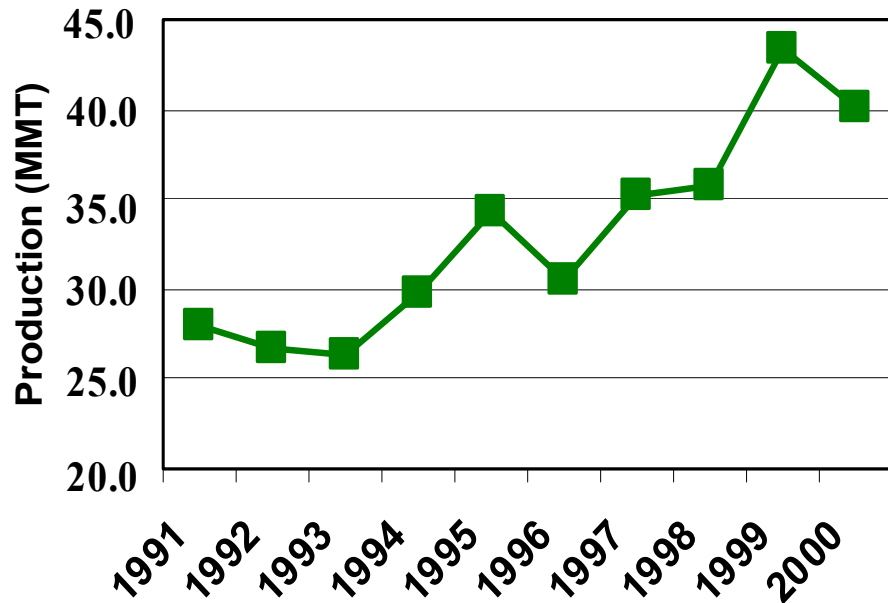
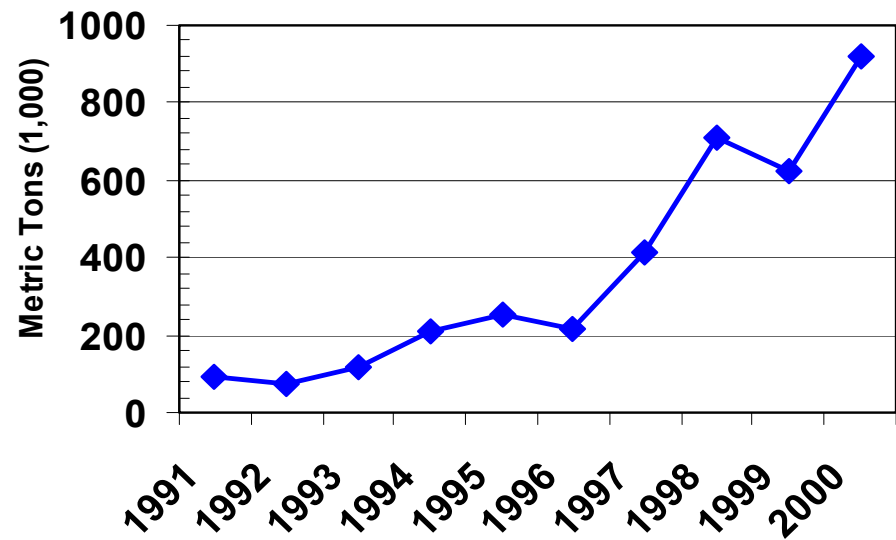


Figure 2: U.S. Canola Production



World Canola Imports and Exports, 2000

World Canola Imports, 2000

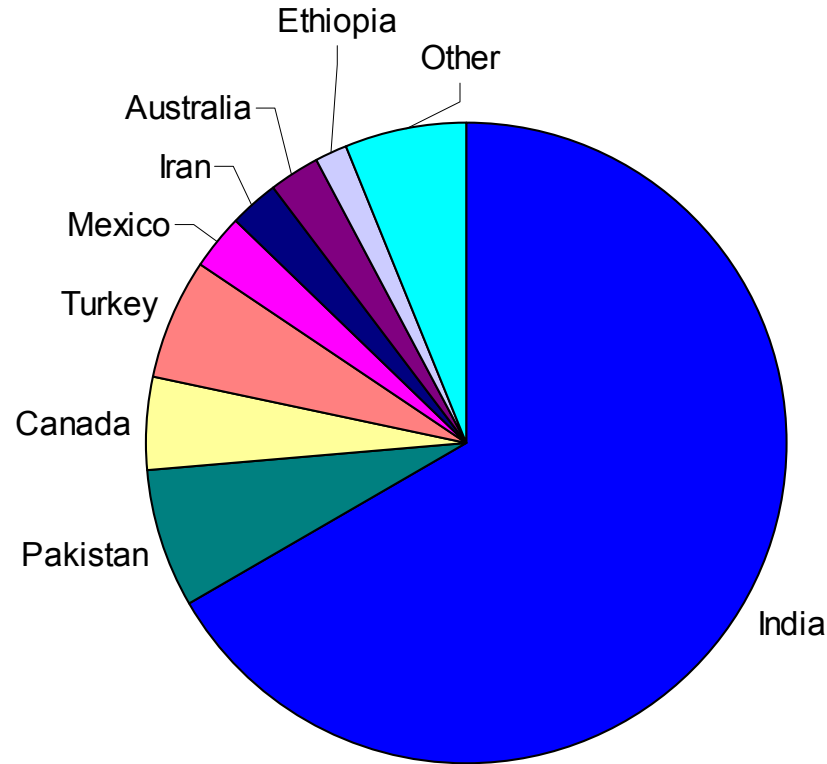
Canola Imports	Metric Tons	Share of World
China	628,403	26.71%
Japan	613,223	26.07%
Germany	261,154	11.10%
United States	59,494	2.53%
World	2,352,668	100.00%

World Canola Exports, 2000

Canola Exports	Metric Tons	Share of World
Canada	898,344	37.68%
France	510,657	21.42%
Australia	396,194	16.62%
United States	37,110	1.56%
World	2,383,917	100.00%

Chickpeas

World Chickpeas Production by Country, 2000



World Total: 8 Million Metric Tons

World & U.S. Chickpea Production 1991-2000

Figure 1: World Chickpea Production

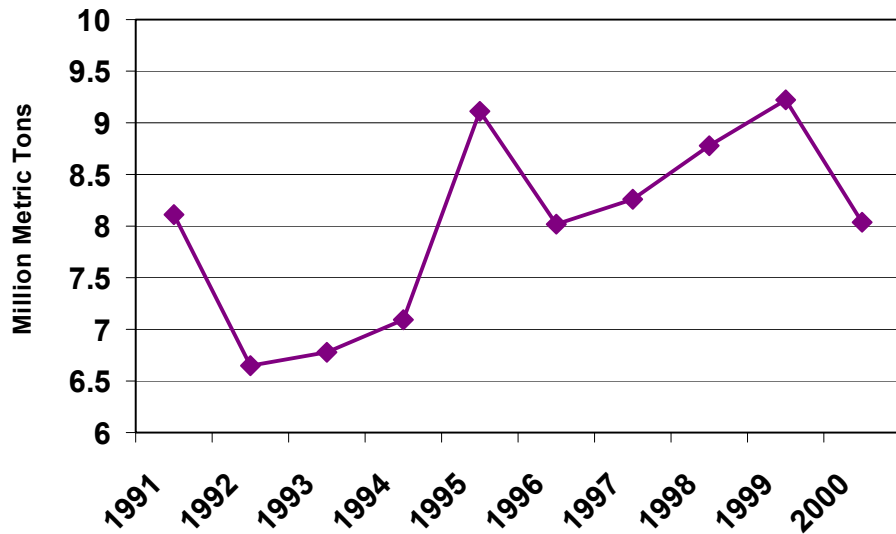
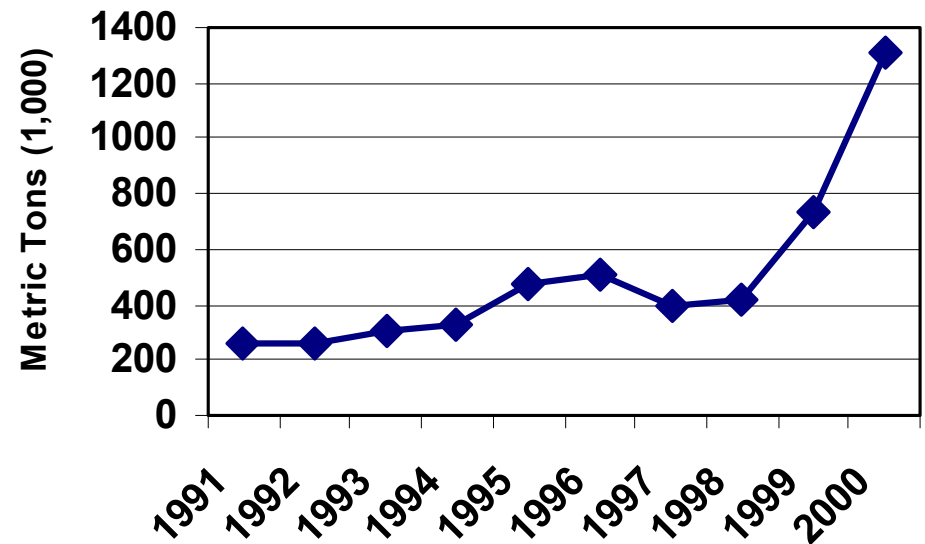


Figure 2: U.S. Chickpea Production



World Chickpea Imports and Exports, 2000

World Chickpea Imports, 2000

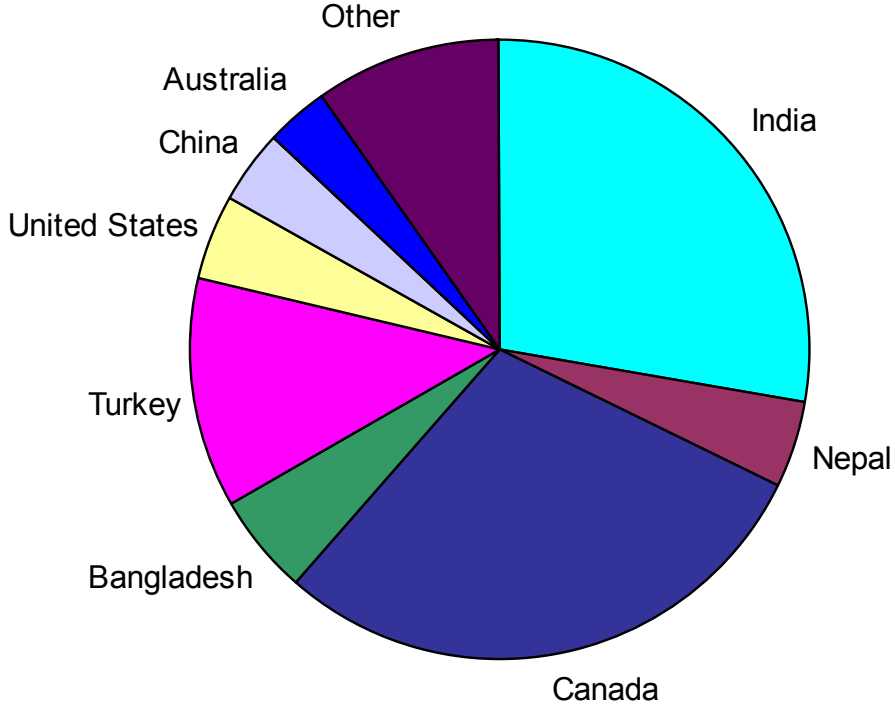
Chickpeas Imports	Metric Tons	Share of World
Spain	38,566	17.70%
Bangladesh	31,000	14.23%
India	21,000	9.64%
US	8,296	3.81%
World	217,879	100.00%

World Chickpea Exports, 2000

Chickpea Exports	Metric Tons	Share of World
Mexico	155,042	30.83%
Australia	126,687	25.19%
Turkey	101,668	20.21%
US	22,677	4.51%
World	502,937	100.00%

Lentils

World Lentils Production by Country, 2000



World Total: 3 Million Metric Tons

World & U.S. Lentils Production 1991-2000

Figure 1: World Lentil Production

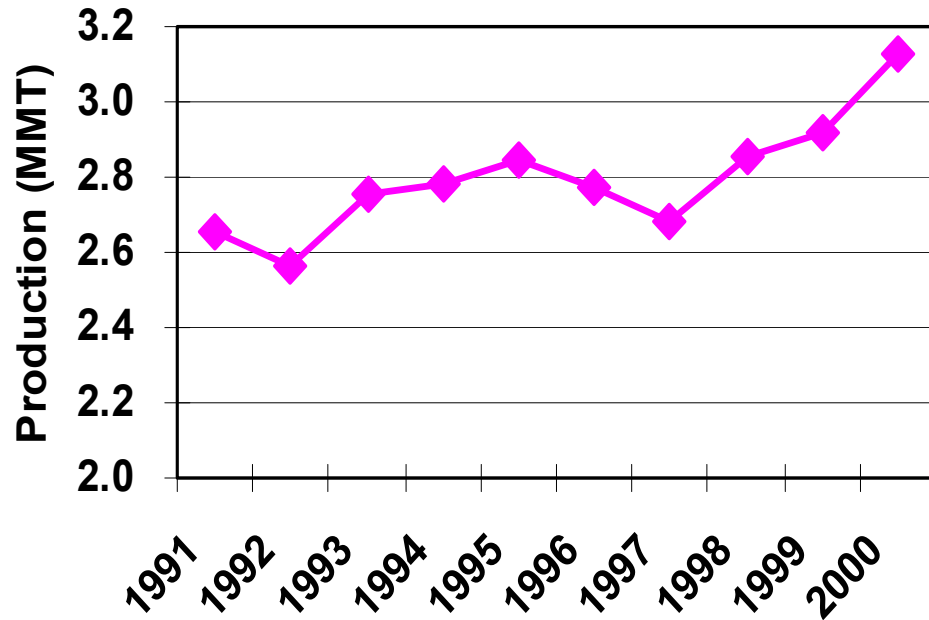
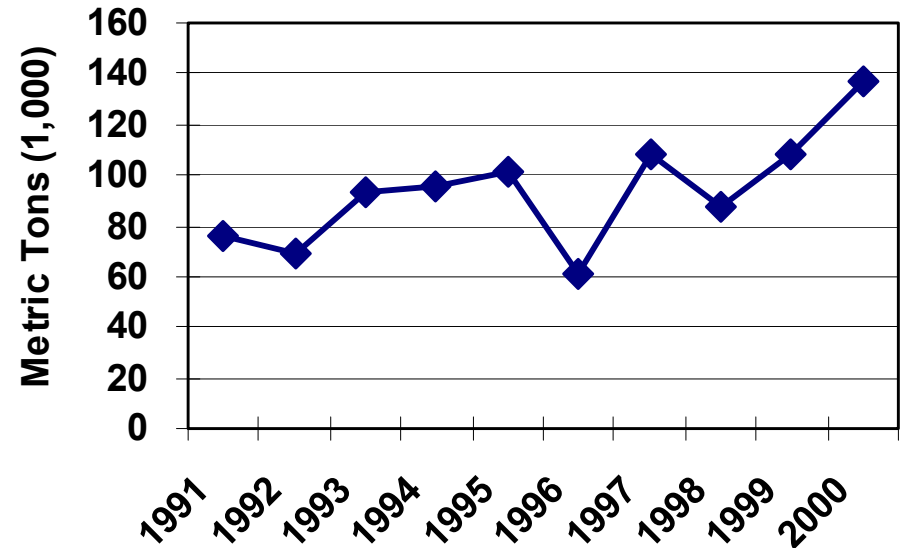


Figure 2: U.S. Lentil Production



World & U.S. Lentils Production 1991-2000

Figure 1: World Lentil Production

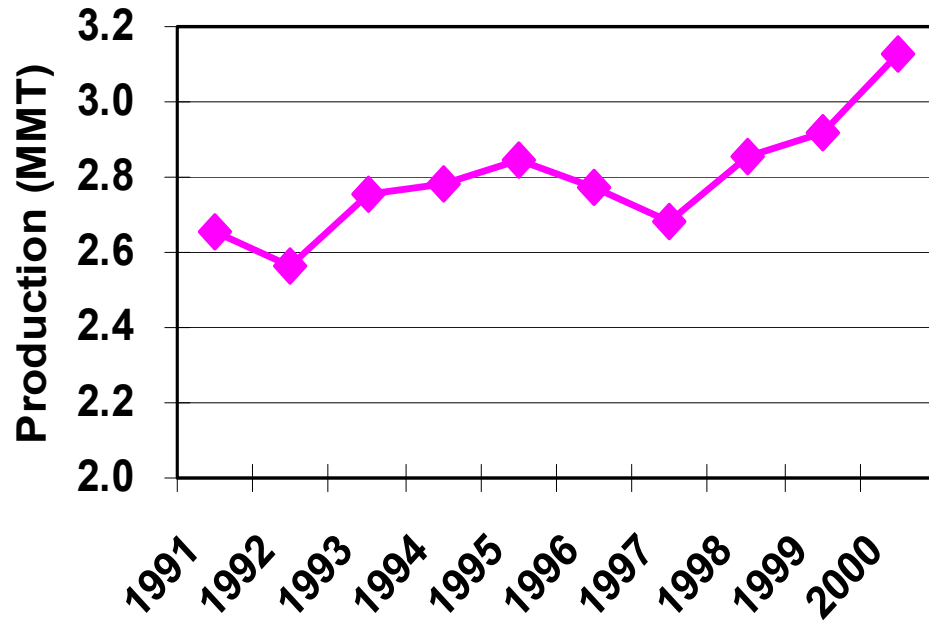
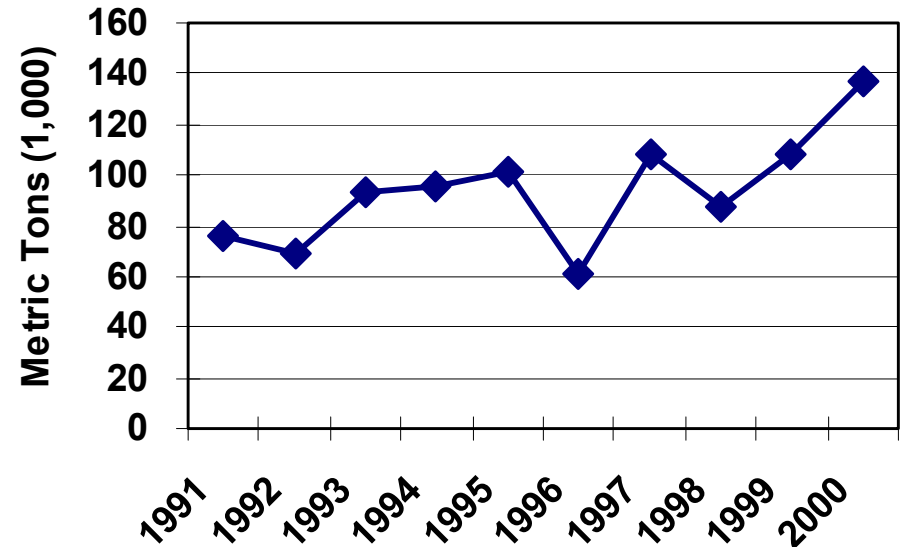
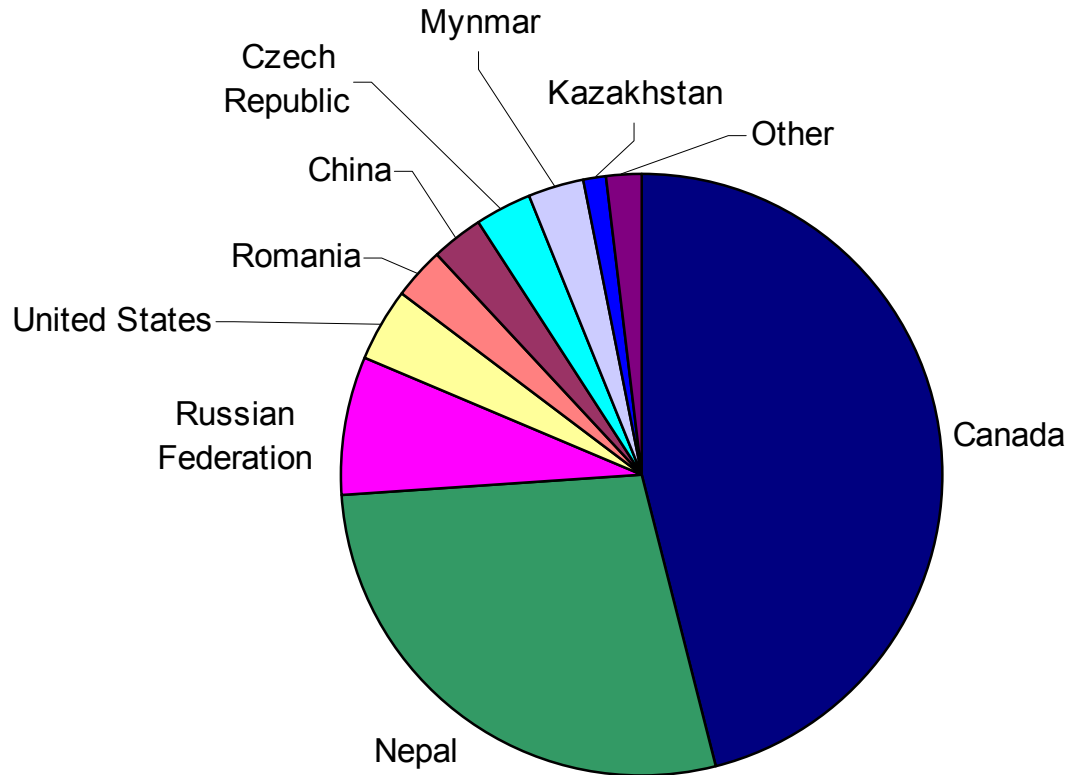


Figure 2: U.S. Lentil Production



Mustard

World Mustard Production by Country, 2000



World Total: 439,435 Metric Tons

World & U.S. Mustard Production 1991-2000

Figure 1: World Mustard Production

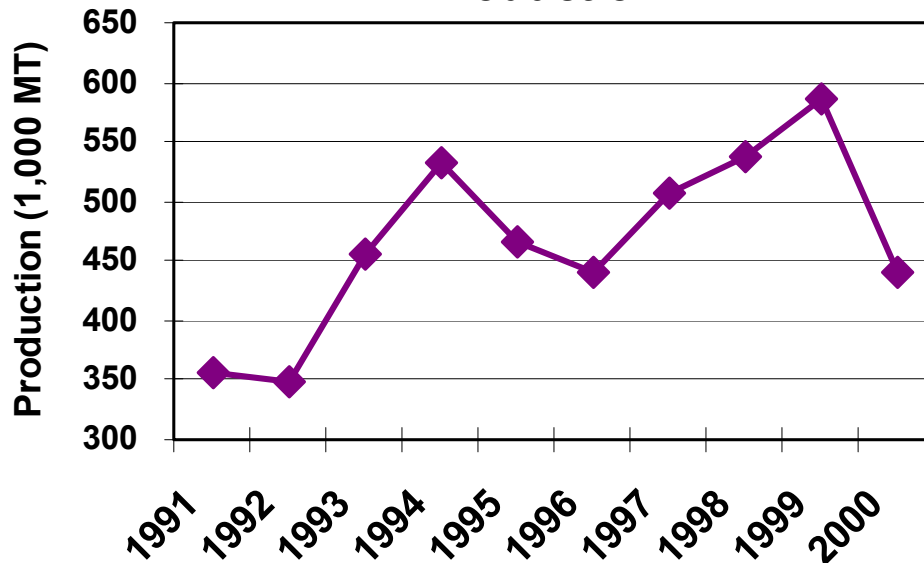
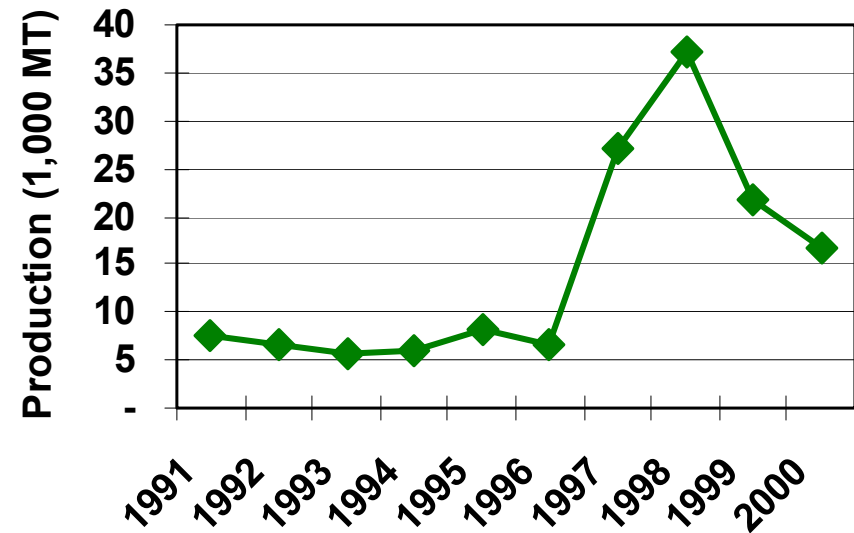


Figure 2: U.S. Mustard Production



World & U.S. Mustard Production 1991-2000

Figure 1: World Mustard Production

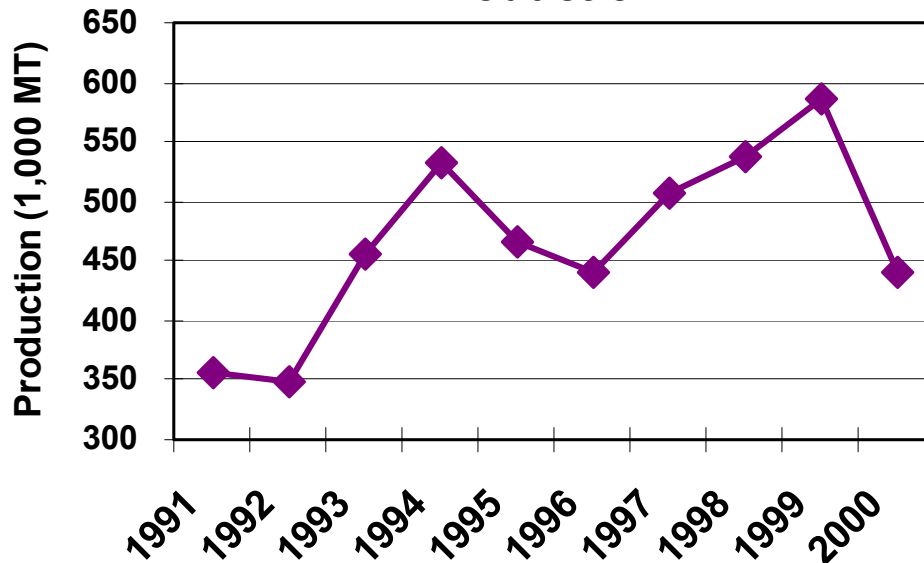
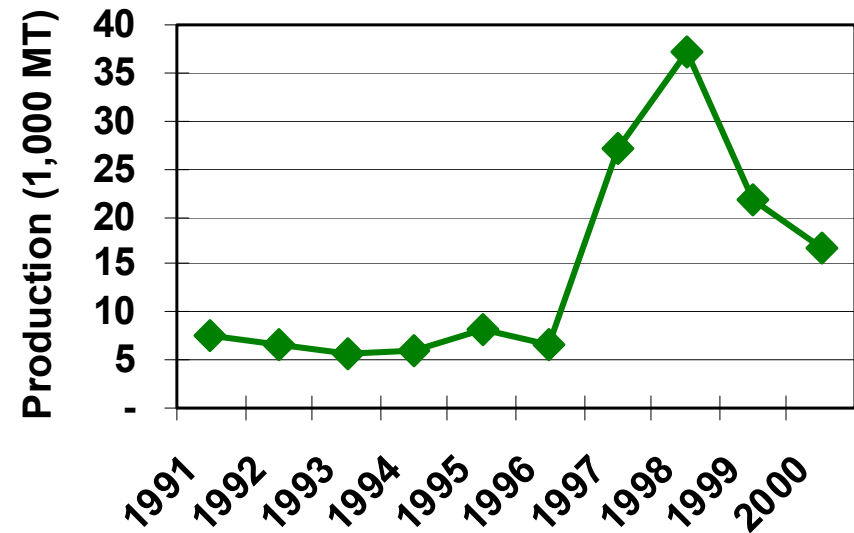


Figure 2: U.S. Mustard Production



Rye

World Rye Production by Country, 2000



World Total: 19.9 Million Metric Tons

World & U.S. Rye Production 1991-2000

Figure 1: World Rye Production:

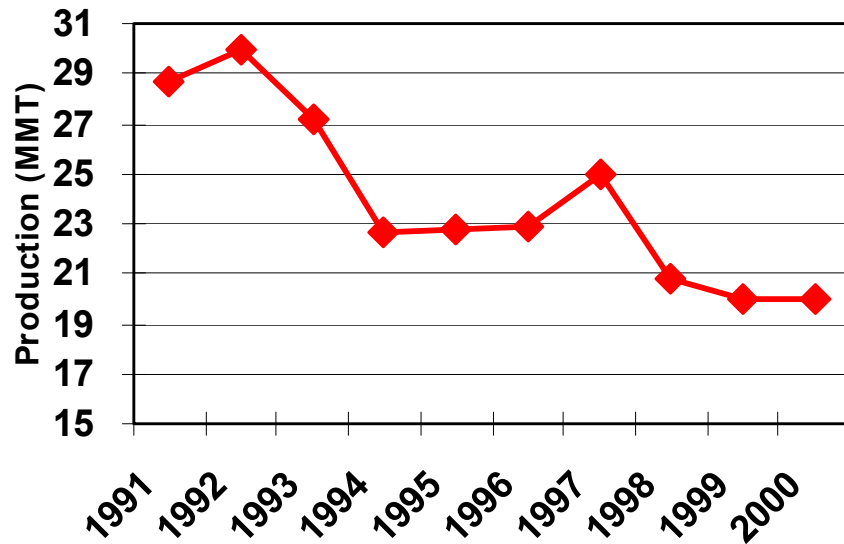
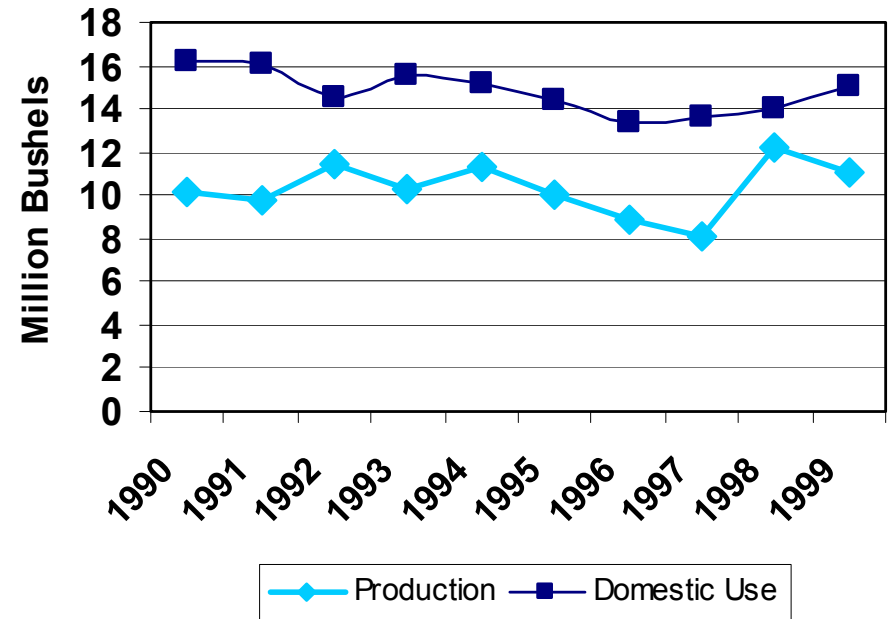


Figure 2: U.S. Rye Production and Domestic Use



World Rye Imports and Exports, 2000

World Rye Imports, 2000

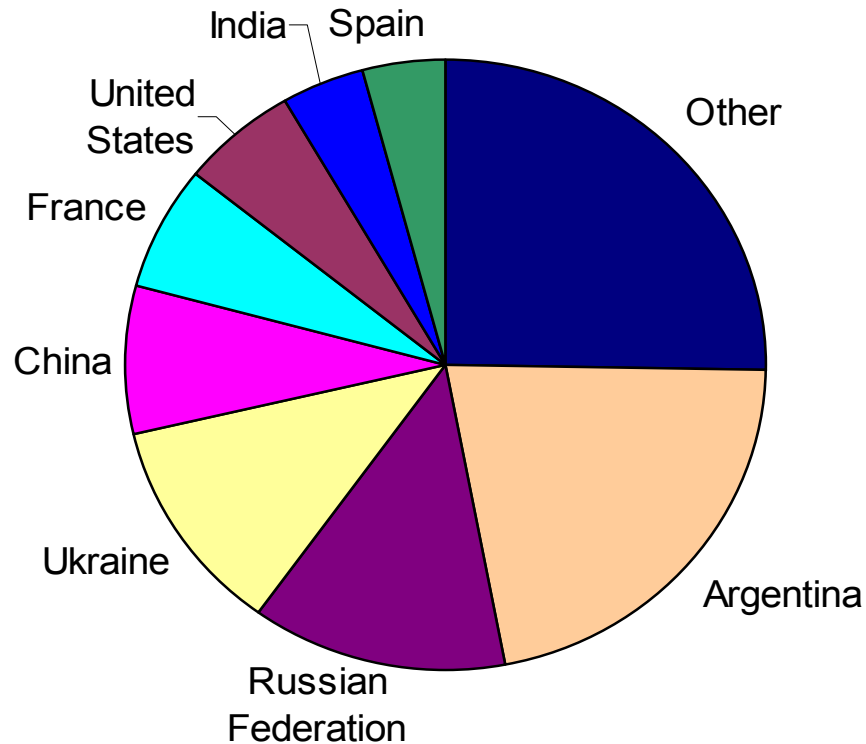
Rye Imports	Metric Tons	Share of World
Japan	34,434	17.04%
China	30,990	15.34%
South Korea	18,666	9.24%
United States	8,037	3.98%
World	202,019	100.00%

World Rye Exports, 2000

Rye Exports	Metric Tons	Share of World
Germany	109,273	51.97%
Ukraine	34,000	16.17%
Denmark	25,494	12.13%
United States	414	0.20%
World	210,248	100.00%

Sunflower

World Sunflower Production by Country, 2000



World Total: 36 Million Metric Tons

World & U.S. Sunflower Production 1991-2000

Figure 1: World Sunflower Production:

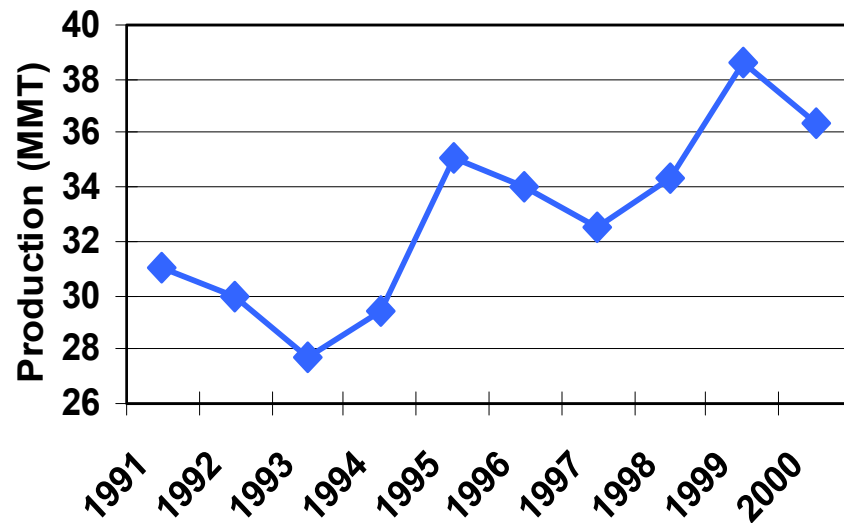
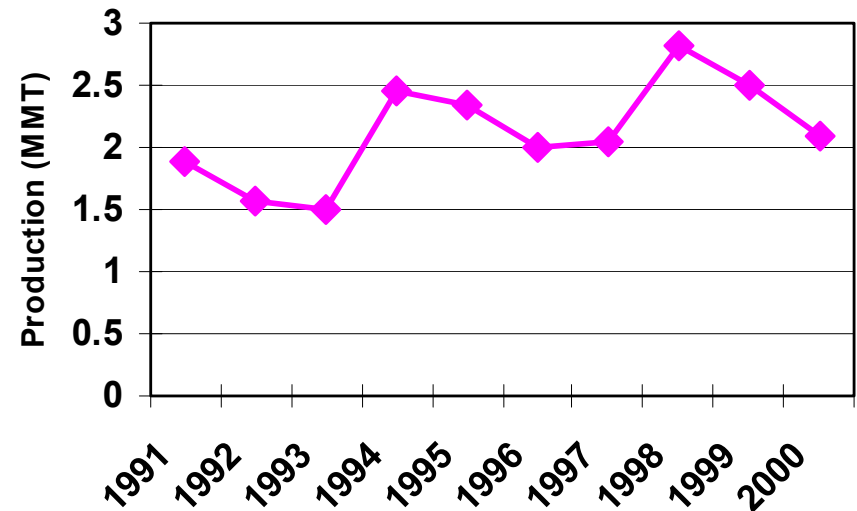


Figure 2: U.S. Sunflower Production:



World Sunflower Imports and Exports, 2000

World Sunflower Imports, 2000

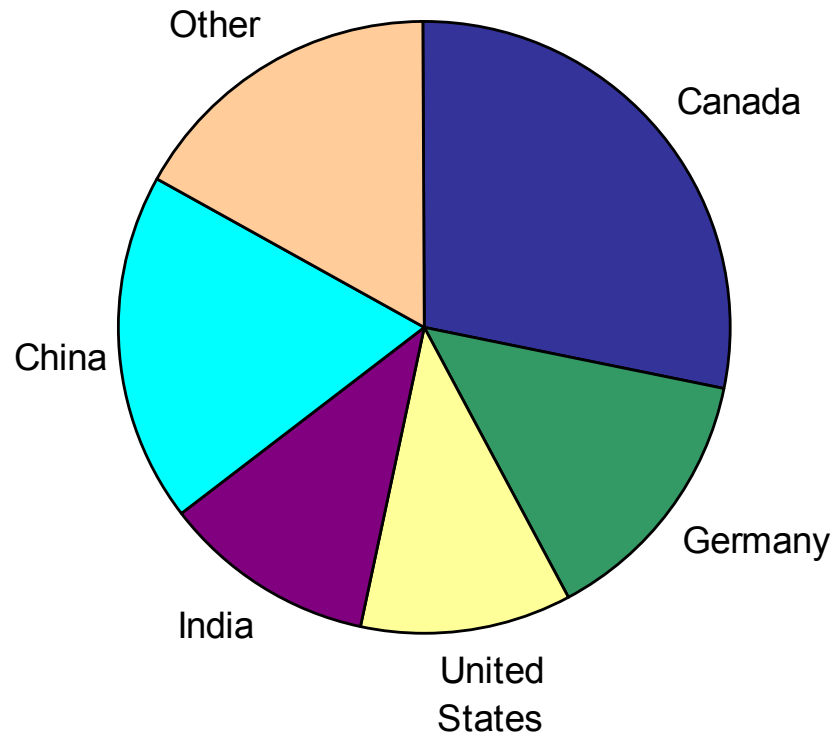
Sunflower Imports	Metric Tons	Share of World
India	400,000	10.94%
Netherlands	265,131	7.25%
Spain	221,389	6.05%
United States	16,630	0.45%
World	3,657,486	100.00%

World Sunflower Exports, 2000

Sunflower Exports	Metric Tons	Share of World
Argentina	1,096,444	35.45%
United States	333,280	10.78%
France	278,168	8.99%
Ukraine	204,036	6.60%
World	3,092,808	100.00%

Flaxseed

World Flaxseed Production by Country, 2000



World Total: 2.4 Million Metric Tons

World & U.S. Flaxseed Production 1991-2000

Figure 2: World Flaxseed Production

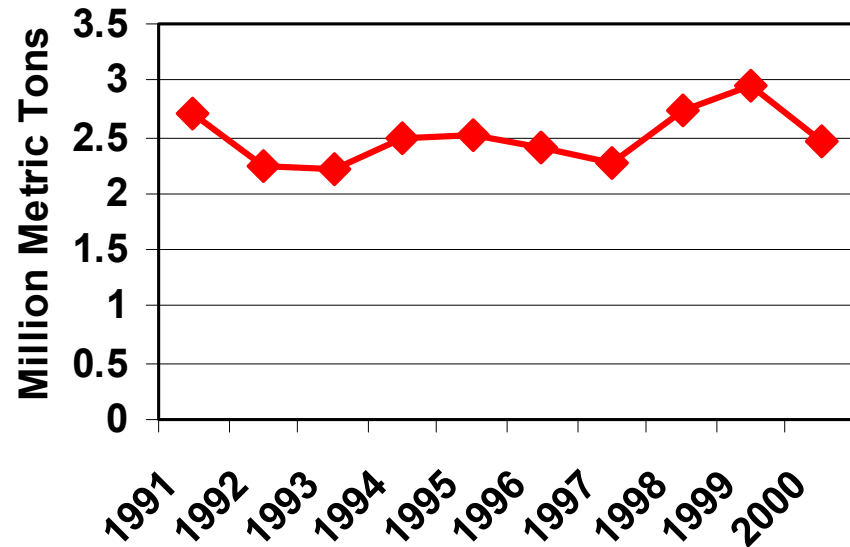
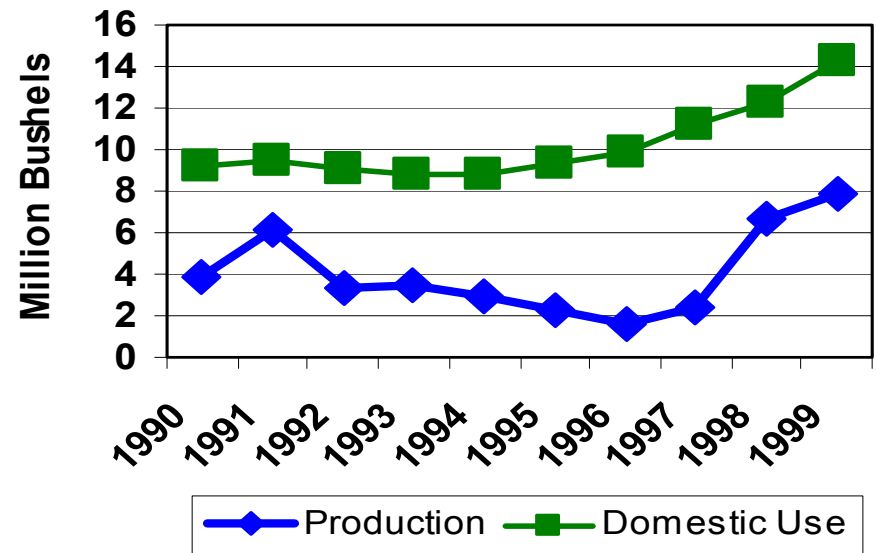


Figure 3: U.S. Flaxseed Production and Domestic Use



World Flaxseed Imports and Exports, 2000

World Flaxseed Imports, 2000

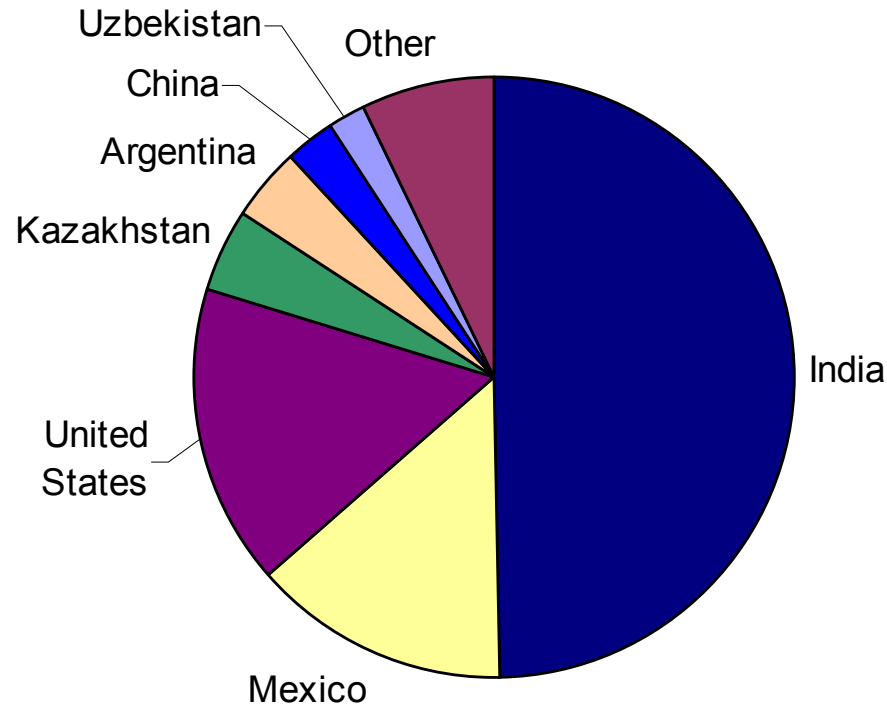
Flaxseed Imports	Metric Tons	Share of World
Belgium-Luxembourg	69,418	29.21%
United States	44,294	18.64%
Germany	35,167	14.80%
Netherlands	29,575	12.45%
World	237,635	100.00%

World Flaxseed Exports, 2000

Flaxseed Exports	Metric Tons	Share of World
Canada	127,797	61.45%
United Kingdom	24,699	11.88%
Belgium-Luxembourg	24,547	11.80%
United States	443	0.21%
World	207,963	100.00%

Safflower

World Safflower Production by Country, 2000



World Total: 1.05 Million Metric Tons

World & U.S. Safflower Production 1991-2000

Figure 2: World Safflower Production: 1991-2000

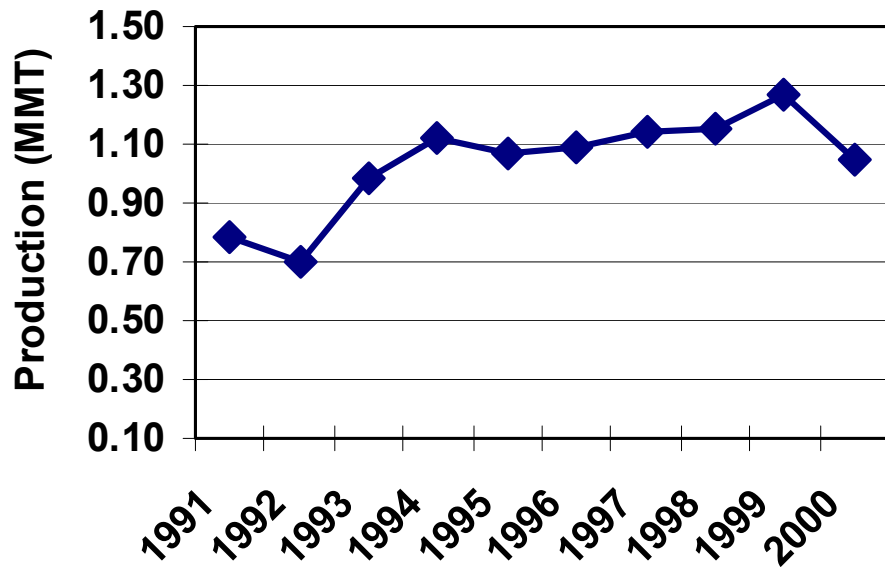
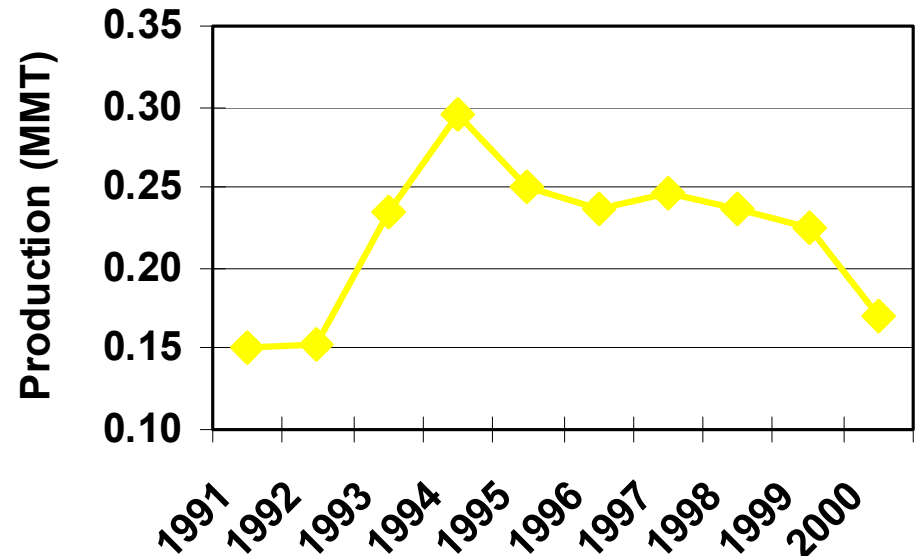


Figure 2: U.S. Safflower Production: 1991-2000



World Safflower Imports and Exports, 2000

World Safflower Imports, 2000

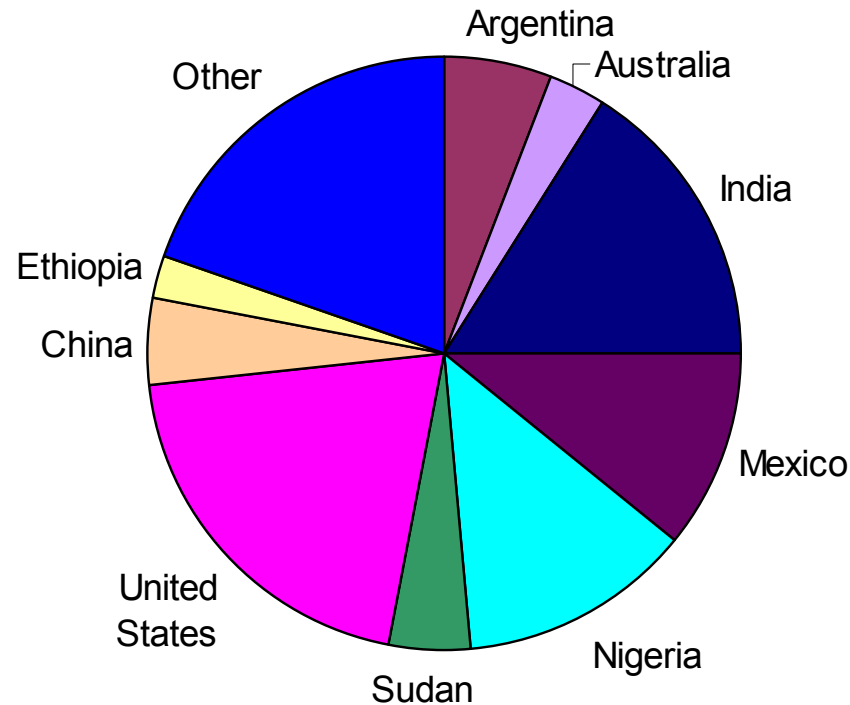
Safflower Imports	Metric Tons	Share of World
Japan	55,189	34.53%
Egypt	30,909	19.34%
United States	29,035	18.17%
World	159,811	100.00%

World Safflower Exports, 2000

Safflower Exports	Metric Tons	Share of World
United States	47,817	38.46%
Mexico	34,843	28.03%
Netherlands	22,725	18.28%
World	124,315	100.00%

Sorghum

World Sorghum Production by Country, 2000



World Total: 58 Million Metric Tons

World & U.S. Sorghum Production 1991-2000

Figure 1: World Sorghum Production

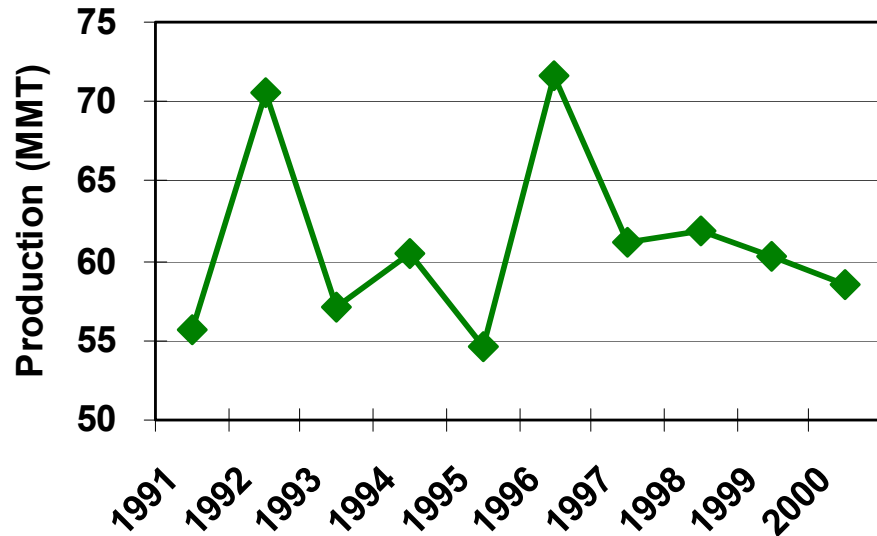
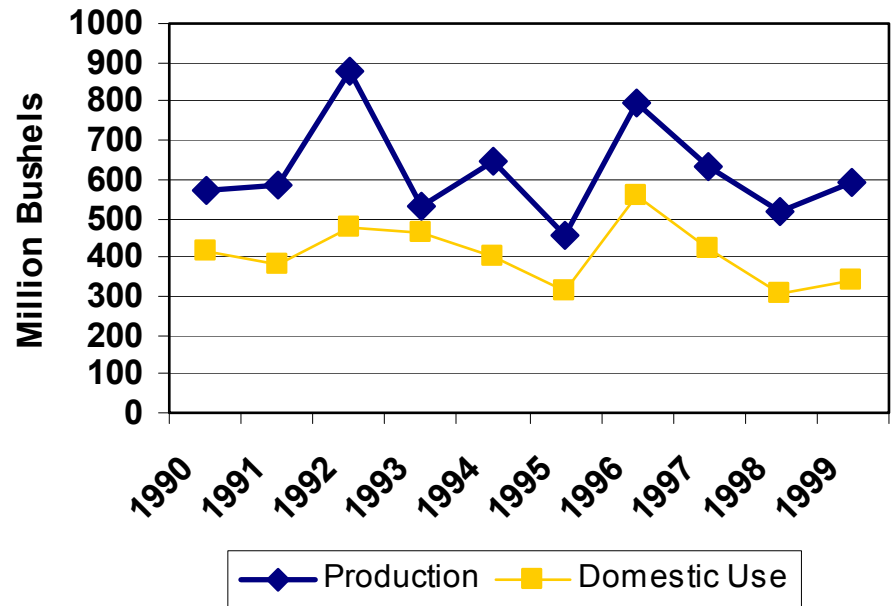


Figure 2: U.S. Sorghum Production and Domestic Use



World Sorghum Imports and Exports, 2000

World Sorghum Imports, 2000

Sorghum Imports	Metric Tons	Share of World
Mexico	456,881	52.75%
Japan	254,440	29.38%
Spain	40,373	4.66%
United States	73	0.01%
World	866,083	100.00%

World Sorghum Exports, 2000

Sorghum Exports	Metric Tons	Share of World
United States	555,354	77.73%
Argentina	46,434	6.50%
Australia	39,375	5.51%
France	31,719	4.44%
World	714,475	100.00%

QUESTIONS?

