# ~ 2011 ~ U.S. Sunflower Crop Quality Report



#### Regarding the 2011 Sunflower Crop Quality Report . . .

The 2011 U.S. Sunflower Crop Quality Report, compiled by the National Sunflower Association in cooperation with the Foreign Agricultural Service, U.S. Department of Agriculture, provides an overview on the size and quality of the 2011 U.S. sunflower seed crop. It includes statistics on the marketing of the crop, as well as U.S. and world supply/disappearance tables and information on U.S. sunflower oil.

Produced annually by the National Sunflower Association since 1981, this newest U.S. Sunflower Crop Quality Report can be found on the NSA's website. That site's address is www.sunflowernsa.com. Printed copies of this report can be made available by the NSA. (See NSA's contact details on page 9).

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### 2011 U.S. Sunflower Acreage & Production

hited States sunflower production totaled 2.04 billion pounds in 2011, down 25% from 2010 and down by nearly one-third from the 2009 crop size.

The U.S. average yield per acre — at 1,398 pounds — decreased by 62 pounds from 2010. Planted area, at 1.54 million acres, was about 21% below that of 2010. Area harvested during 2011 decreased by 12% from the prior year, to 1.46 million acres.

For the first time since USDA began publishing sunflower data in 1977, South Dakota produced more sunflower seed than North Dakota. South Dakota's 2011 production totaled 777 million pounds, while North Dakota came in at slightly above 766 million. U.S. production of oiltype sunflower varieties in 2010, at 1.72 billion pounds, decreased 17% from 2010. Harvested acreage of oil types was down more than 13% from the prior year and by more than 25% from 2009.

At 1,397 pounds per acre, the average yield of oil sunflower in 2011 was about 4% less than the 2010 average of 1,458 pounds per acre.

The 2011 U.S. production of nonoil sunflower varieties, at nearly 316 million pounds, dropped sharply (by more than 52%) from the 2010 nonoil — which in turn had been 46% higher than that of 2009. At 224,400 acres, nonoil harvested acreage was about half the 2010 level.



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### **U.S. Sunflower Production**

(1,000s of Pounds)

	2008	2009	2010	2011
Oil	2,993,510	2,584,010	2,074,500	1,722,675
Nonoil	429,330	452,450	661,070	315,600
Total	3,422,840	3,036,460	2,735,570	2,038,275

# U.S. Oil-Type Sunflower Harvested Area, By State

			(1,0005	or nectares	5)			
State	2004	2005	2006	2007	2008	2009	2010	2011
Colorado	32.4	58.7	30.4	40.5	57.9	27.5	37.2	39.3
Kansas	56.7	99.2	52.6	58.7	83.0	56.7	42.5	42.5
Minnesota	11.3	29.1	21.4	35.6	29.5	17.8	20.6	10.9
Nebraska	14.2	23.5	12.5	13.4	17.4	10.5	9.7	14.2
North Dakota	267.1	358.2	299.5	362.2	376.4	307.6	277.2	202.3
South Dakota	159.4	194.7	165.9	157.4	220.6	206.4	161.9	163.1
Texas	6.5	19.4	5.3	5.9	21.9	23.9	11.3	9.3
Other	28.7	39.5	25.1	22.1	27.9	18.6	15.1	17.6
Total	576.3	822.3	612.7	695.8	834.6	669.0	575.5	499.2

### 2011 Seed Quality/Confection Kernel Specifications

eed quality and kernel specifications of the 2011 crop were estimated from samples of oil and nonoil (confection) sunflower collected with the aid of the North Dakota Grain Inspection Service, Kansas Grain Inspection Service, Aberdeen (S.D.) Grain Inspection and several confection sunflower processing plants. The samples were drawn from sunflower loads delivered to processors, or from submitted samples taken at local grain buying facilities. The seed samples were then analyzed according to USDA Grain Inspection, Packers &

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Stockyards Administration (GIPSA, formerly known as FGIS) directives. Oil content of oil-type seed samples was determined on a clean-seed basis using nuclear magnetic resonance (NMR) analysis.

Analysis of the oil-type sunflower seed samples indicated an average oil of 41.4%, down 2.1% from the 2010 average of 43.5%. Test weight was 28.8 pounds per bushel, 2.3 pounds below the 2010 test weight average of 31.1 pounds. Foreign material, at 4.4%, was 0.7% lower than the 2010 average. Moisture, at 9.6%, was almost identical to the 2010 average of 9.5.

### **Oil-Type Sunflower Seed Quality**

Year	Test Weight	Moisture	Foreign Material	Oil
	(Lbs/Bu)	(%)	(%)	(%)
2011	28.8	9.6	4.4	41.4
2010	31.1	9.5	5.1	43.5
2009	29.8	9.8	4.3	42.6
2008	31.4	101	4.3	43.6
2007	30.9	9.1	5.5	43.1

### **Nonoil Sunflower Seed Quality**

Year	Test Weight	Moisture	Foreign Material	Seeds Over 20/64 Size
	(Lbs/Bu)	(%)	(%)	(%)
2011	21.0	11.4	9.1	85.2
2010	22.3	10.6	9.3	81.1
2009	22.7	10.4	9.0	80.7
2008	23.3	10.5	8.2	76.8
2007	25.1	10.0	7.5	68.1

The percentage of confection (nonoil) seeds over 20/64 in size was an impressive 85.2% in 2011. That's 4.0% higher than 2010's 81.2%.

Foreign material in the nonoils averaged 9.1%, 0.2% lower than 2010.

At 21.0 pounds per bushel, average 2011 nonoil test weight was 1.3 pounds lower than 2010's 22.3 pounds per bushel, while average moisture, at 11.4%, was 0.8% higher than the 2010 nonoil crop average.

### **Product Specifications** U.S. Sunflower Kernel

Origin -	Sunflower hybrid seed
Flavor -	Good, typical, mild, distinctive
Odor -	Good, clean, fresh aroma
Texture -	Firm, not brittle or soggy
Color -	Off-white, gray
Microbiological -	Aflatoxin: Negative
0	Pathogens: Negative
Chemical Additives -	No preservatives or chemical
	additives may be used
Pesticide Residues -	Meets all state & federal
	regulatory requirements
Fumigants -	Only FDA-approved fumigants
	may be used as considered nec-
	essary. Residues may not exceed
	FDA approved tolerances
Quality and type o	
	f kernel is determined with the
fallouing factors to	most most fis quetomor most
following factors to	meet specific customer needs:
U U	Defined as kernel count per oz
U U	•
Size -	Defined as kernel count per oz
Size -	Defined as kernel count per oz Includes shells and unshelled
Size -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or
Size - Foreign Material -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight
Size - Foreign Material -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or
Size - Foreign Material - Moisture -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8%
Size - Foreign Material - Moisture -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8% Distinctly discolored kernel or
Size - Foreign Material - Moisture -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8% Distinctly discolored kernel or insect damage. Each defined as a
Size - Foreign Material - Moisture - Damage -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8% Distinctly discolored kernel or insect damage. Each defined as a percentage
Size - Foreign Material - Moisture - Damage -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8% Distinctly discolored kernel or insect damage. Each defined as a percentage Any portion less than 1/2 kernel;
Size - Foreign Material - Moisture - Damage - Broken or Chip -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8% Distinctly discolored kernel or insect damage. Each defined as a percentage Any portion less than 1/2 kernel; defined as a percentage Kernel with a piece of shell
Size - Foreign Material - Moisture - Damage - Broken or Chip -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8% Distinctly discolored kernel or insect damage. Each defined as a percentage Any portion less than 1/2 kernel; defined as a percentage Kernel with a piece of shell adhering; defined as count
Size - Foreign Material - Moisture - Damage - Broken or Chip -	Defined as kernel count per oz Includes shells and unshelled seed; defined as percentage or count per unit of weight Defined as a percentage at or below 8% Distinctly discolored kernel or insect damage. Each defined as a percentage Any portion less than 1/2 kernel; defined as a percentage Kernel with a piece of shell

## 2011 Oil Quality Analysis/Oil Traits & Rules

The tables below compare the oil quality and fatty acid content of representative samples of high-oleic and mid-oleic sunflower seed oil, gathered from the 2011 U.S. crop, to previous years' data on oil quality. The sunflower oil quality analysis was conducted with standard gas chromatography, basis American Oil Chemists' Society Method #Cel-62.

The 62.97% oleic average of the 2011 NuSun<sup>®</sup> (mid-oleic) samples was slightly higher than 2010's 62.82% (which in turn was above 2009's 62.34%).

The 2011 high-oleic seed samples averaged an oleic acid content of

85.35%. That is just slightly above the 85.27% average of the 2010 high-oleic sunflower seed samples.

As is the case each year, climatic factors and timing of production contributed to the fatty acid levels of both the NuSun and higholeic samples collected at harvest.

See general trading rules for mid-oleic and higholeic oil, as well as product specification tables, at www.sunflowernsa.com. Click on the link "Sunflower oil," then "product specifications." For more details or questions regarding trading rules, go to the American Fats & Oils Assn., Inc., website, afoaonline.org.

### Sunflower Oil Quality / High Oleic

		Per	cent		
	Palmitic	Stearic	Oleic	Linoleic	Linolenic
Year	16:0	18:0	18:1	18:2	18:3
2011	3.24	2.96	85.35	6.43	0.33
2010	3.24	3.03	85.27	6.62	0.21
2009	3.05	3.10	85.71	6.27	0.18
2008	3.03	3.03	84.75	7.19	0.16
2007	3.04	3.35	85.89	5.44	0.13

### Sunflower Oil Quality / NuSun®

		Per	rcent	-	
	Palmitic	Stearic	Oleic	Linoleic	Linolenic
Year	16:0	18:0	18:1	18:2	18:3
2011	4.11	3.39	62.97	27.41	0.36
2010	4.30	3.40	62.82	27.47	0.23
2009	4.28	3.62	62.34	27.92	0.22
2008	4.14	3.47	61.88	28.62	0.29
2007	4.12	3.98	61.73	28.32	0.43

#### Mid-Oleic Sunflower Oil (NuSun®): Crude

Trading Rules: Specifications from American Fats and Oils Association: Rule 14B

ITEM Flash Point (AOCS Cc 9b-56) Halphen Test Saponification Value Unsaponifiable Free Fatty Acid (as Oleic)

Moisture & Volatile (AOCS Ca 2d-25) Insoluble Impurities (AOCS Ca 3-46) Color (in 5 1/4 inch cell or tube), as determined under AOCS Method Cc 13b-45, Bleached (AOCS Cc 8g-52), after refining (AOCS Ca 9a-52) Linolenic acid Oleic (as % of TFA)

VALUE 250°F Minimum Negative 188-194 1.3% Maximum Basis 2.0% Maximum 3.0% 0.5% Maximum 0.3% Maximum 2.5 Red Maximum

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1.0% Maximum 55% Minimum 75% Maximum

Rule 14B -- Crude mid-oleic sunflower oil (NuSun®) shall be pure and produced only from sunflower seed of fair average quality by hydraulic, expeller, or solvent extraction process. Buyer shall receive an allowance of 0.1% of the invoice value for each 0.1% of free fatty acid in excess of 2%; fractions in proportion. (Effective 1/1/2003)

#### Mid-Oleic Sunflower Oil (NuSun<sup>®</sup>): Fully Refined, Bleached & Deodorized

Trading Rules: Specifications from American Fats and Oils Association: Rule 15B

ITEM	VALUE
Free Fatty Acid (as Oleic)	0.05% Maximum
Moisture & Impurities (AOCS Ca 2d-25	) 0.10% Maximum
Peroxide Value	2.0 Maximum
Color (Lovibond Scale)	2.5 Red Maximum
lodine Value	88-115.0
Oleic	55% Minimum
	75% Maximum
Flavor	Pleasing
Appearances (Waxes Not Separated)	Will be cloudy at
	room temperature
Other Possible Specs:	
Saponification Value	186-194
Unsaponifiable	1.5% Maximum
Specific Gravity by 20° Centigrade	0.917-0.924
Rule 15B Fully refined, bleached and deo	

Rule 15B -- Fully refined, bleached and deodorized mid-oleic sunflower oil (NuSun<sup>®</sup>) shall be pure mid-oleic sunflower seed oil. It shall be produced from fair average quality crude mid-oleic sunflower seed oil from which essentially all of the free fatty acids and non-oil substances have been removed by chemical treatments and by mechanical or physical separation. (Effective 1/1/2003)

### 2011 Sun Oil & Sun Meal Exports

**Oil Exports -** Sunflower oil is the preferred oil in most of Europe, Russia and Mexico, as well as in countries along the Mediterranean and several South American nations.

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U.S. sunflower oil exporters can deliver three types of sunflower oil: NuSun<sup>®</sup>, Linoleic and High Oleic.

• **NuSun**<sup>®</sup> is a midrange oleic, 55%-75% (monounsaturated) sun-

### **U.S. Sunflower Oil Exports**

(October-September, in Metric Tons)

Country	2007/08	2008/09	2009/10	2010/11
Belgium	2,304	6	2	347
Canada	60,099	77,071	27,992	15,101
Chile	1,176	79	0	16
Costa Rica	0	4	521	1,120
Egypt	0	0	15,500	0
India	0	0	11,768	0
Japan	4,584	8,118	4,144	3,983
Mexico	3,587	2,458	10,398	5,056
Morocco	0	0	9,209	0
Singapore	4,205	1,990	0	0
South Korea	30	4	52	112
Taiwan	157	195	12,819	103
Tunisia	0	0	1,800	0
Saudi Arabia	0	0	2,500	0
South Africa	0	0	39	10,000
Other	543	915	969	2,193
Total MT	76,685	90,840	97,674	38,031

### U.S. Sunflower Meal Exports

	(October-Septe			
Country	2007/08	2008/09	2009/10	2010/11
Canada	2,348	2,400	2,411	2,049
Mexico	10,011	4,662	3,141	825
Ireland	4,108	0	0	0
Other	171	73	519	0
Total MT	16,638	7,135	6,071	2,874

flower oil. It needs no hydrogenation and has a 9% saturated fat level. NuSun® is extremely functional for frying applications and has a good balance of linoleic acid — an essential fatty acid that enhances products' taste.

• Linoleic sunflower oil has about 69% polyunsaturated fat, 20% monounsaturated fat and 11% saturated fat. Linoleic sunflower is an excellent cooking oil with a neutral taste. This enhances the taste of food rather than overpowering it.

• High Oleic sun-

flower oil has 80% or more oleic (monounsaturated) acid. This unique oil has many specialty applications.

#### Sun Meal Exports -

Most of U.S. sunflower meal produced is utilized within the United States as an ingredient for the domestic livestock feeding industry, although some U.S. sunflower meal is exported. Four types of sun meal, identified by their respective protein contents (28, 30, 32 and 35%), are produced in the United States.



### U.S. Sunflower Supply & Disappearance (in 1,000 Metric Tons, Unless Specified)

2006/07 2007/08 2008/09 2009/10 2010/11 2011/12 Item Oct.-Sept. Revised Forecast NONOIL SUNFLOWER Area Harvested (1,000 HA) Area Harvested (1.000 AC) 1.69 1.64 1.58 1.44 Yield (MT/HA) 1.56 1.47 1,506 1,465 1,406 1,285 Yield (LB/AC) 1,389 1,315 Stocks, Oct. 1 Production Seed Import TOTAL SUPPLY Disappearance **Ending Stocks OIL SUNFLOWER** Area Harvested (1,000 HA) 1.233 1,653 1.423 Area Harvested (1.000 AC) 1.514 2,062 1.719 1.75 1.57 1.63 1.63 Yield (MT/HA) 1.32 1.62 1,397 1,452 1,563 1,458 Yield (LB/AC) 1,181 1,445 Stocks, Oct. 1 1,172 Production 1,358 1,127 Seed Import 1,387 1,082 1,403 TOTAL SUPPLY 1,188 1,166 Oilseed Crushed Planting Seed, Birdfood, Domestic Use **Exports** 1,261 1,044 1,200 Disappearance 1,167 1,138 **Ending Stocks SUNFLOWER OIL** Stocks, Oct. 1 **Oil Imports Oil Production** TOTAL SUPPLY Domestic Oil Use **Oil Exports** Total Use **Ending Stocks** SUNFLOWER MEAL Stocks, Oct. 1 Production TOTAL SUPPLY Domestic Use **Exports** Total Use **Ending Stocks** 

Sources:

### World Sunflower Supply & Disappearance

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Item  2006/07  2007/08  2008/09  2009/10  2010/11  2011/12 Revision 24,471    Area Harcested (1,000 HA)  24,094  23,397  24,725  24,250  24,471  25,433    SUDVELOWER SED – Production  1,25  1,21  1,41  1,36  1,37  1,49    Agentina Other Europe  3,120  4,600  3,200  2,650  3,640  3,800    Channe copies Republic of  1,850  1,800  7,201  6,976  8,030    Channe copies Republic of  1,850  5,500  7,201  6,600  5,720  1,700    Ukraine  5,550  4,800  7,100  7,300  8,800  8,900    Ukraine  1,553  1,309  1,553  1,377  1,214  1,225    India  1,450  1,440  1,153  1,377  1,200  9,400    Ukraine  3,163  3,001  4,517  3,423  3,808  7,700  1,070  1,070    Ukraine  3,0092  29,259	World Sunflower	Supp	ly & Di	sappea	rance	Oil We	Sources: orld & USDA
Area Harvested (1,000 HA)  24,094  23,397  24,725  24,250  24,471  25,333    Wield (MT/HA)  1.25  1.21  1.46  1.37  1.49    SUPR (MT/HA)  1.25  1.21  1.46  1.36  1.49    Production  3.120  4.600  3.200  2.650  3.665  3.400    Other Europe  3.655  4.800  1.750  1.650  1.710  1.700    Russia  6.350  5.500  7.270  6.600  8.900  0.100  6.50  5.80    Ukraine  5.555  4.880  7.100  7.650  5.720  9.100    Ukraine  5.550  4.800  7.70  7.600  8.000  9.00    Ukraine  5.20  7.70  7.90  7.00  8.00  9.40    Other  3.163  3.801  4.571  3.448  36.007  9.00    Ukraine  30,092  29.259  34.753  32.171  3.3448  36.007							-
Vield (MT/HA)  1.25  1.25  1.41  1.36  1.37  1.49    SUNFLOWER SEED	Area Harvested (1,000 HA)	24,094	23,397	24,725	24,250		
SUNFLOWER SEED –    Production  3.120  4.600  3.200  2.650  3.665  3.400    Other Europe  3.85  2.95  4.500  2.650  3.665  3.3400    Other Europe  1.850  1.800  1.900  1.650  1.710  1.700    Russia  6.350  5.500  7.270  6.600  5.720  9.100    United States  997  1.309  1.533  1.377  1.241  9.25    India  1.450  1.460  1.150  1.000  6.50  5.800    Turkey  820  6.70  850  7.90  1.020  940    Other  3.163  3.801  4.517  3.425  4.086  4.040    Other  3.163  3.53  6.623  6.29  1.098    Europan  1.954  1.334  2.165  6.83  6.29  1.098    Sced Exports  1.954  1.334  2.165  1.680  1.741  1.515						,	,
Agentina  3,120  4,600  3,200  2,650  3,665  3,400    Other Europe  385  295  454  378  380  390    European Union  6,407  4,944  6,909  7,001  6,976  8,032    China, Peoples Republic of  6,550  5,500  7,720  6,600  5,720  9,100    Ukraine  5,550  4,880  7,100  7,300  8,000  8,900    United States  997  1,030  1,533  1,127  1,241  925    India  1,450  1,460  1,150  1,000  650  580    Other  3,163  3,801  4,517  3,425  4,040  0    Other  3,163  3,801  4,517  3,425  4,048  8,007    Seed Import  Tirkey  495  529  477  704  719  830    European Union  653  353  623  1,033  1,217  1,616  1,712							
Other Europe  385  295  454  378  380  390    European Union  6,407  4,944  6,909  7,011  6,976  8,032    China, Peoples Republic of  1,850  1,800  1,720  1,660  5,710  9,100    Ukraine  5,550  4,880  7,200  6,600  5,720  9,100    Ukraine  5,550  4,880  7,200  8,000  8,900    United States  997  1,309  1,553  1,377  1,241  925    India  1,450  1,460  1,150  1,000  650  580    Turkey  820  670  850  780  747  743  748  8,4040    TOTAL  30,929  29,259  34,753  32,171  83,438  8,007    Bed Impot  1  1,55  1,630  1,741  2,510  5,550  1,630  1,741  2,510    Seed Impot  1,55  1,81  166  1,625	Production						
European Union  6,407  4,944  6,909  7,001  6,976  8,032    China, Poples Republic of  1,850  1,800  1,750  1,650  1,700    Russia  6,350  5,500  7,220  6,600  5,720  9,100    Urraine  5,550  4,880  7,100  7,300  8,000  8,900    United States  997  1,460  1,130  1,000  6,53  940    Other  3,163  3,801  4,517  3,425  4,046  4,040    TotAL  30,092  29,259  34,753  32,171  34,448  38,007    Seed Import  Turkey  495  5.29  477  704  719  830    European Union  653  353  623  263  633  629  1,098    TotAL  1,954  1,334  2,165  1,680  1,41  17    Rossia  167  35  155  18  13  600  144  11	Argentina	3,120	4,600	3,200	2,650	3,665	3,400
China, Peoples Republic of  1,850  1,800  1,720  1,650  5,720  9,100    Russia  5,550  4,880  7,100  7,300  8,000  8,900    United States  997  1,309  1,553  1,377  1,241  925    India  1,450  1,460  1,515  1,000  650  580    Other  3,163  3,801  4,517  3,425  4,086  4,040    TOTAL  30,092  29,259  34,753  32,171  33,448  38,007    Seed Impot    1,653  353  623  293  582    Other  806  452  1,065  693  629  1,098    IOTAL  1,954  1,334  2,165  1,680  1,741  1,510    Seed Exports  167  35  155  18  13  600    Uhred States  181  168  159  160  1,41  177  1,515  141	Other Europe	385	295	454	378	380	390
Russia  6,350  5,500  7,270  6,600  5,720  9,100    Ukraine  5,550  4,880  7,100  7,300  8,000  8,900    United States  997  1,309  1,533  1,377  1,241  925    India  1,450  1,460  1,150  1,000  650  580    Turkey  820  670  850  790  1,020  9400    Other  3,163  3,801  4,517  3,2471  3,448  38,007    Seed Import  Turkey  495  529  477  704  719  830    Furopean Union  653  353  623  283  393  582    Other  1,954  1,334  2,165  1,680  1,741  2,510    Seed Exports  1  1,334  2,165  1,681  1,491  171    Russia  1616  1,512  1,613  1,730  2,517  25,311  31,936  446  580		6,407	4,944	6,909	7,001	6,976	8,032
	China, Peoples Republic of	1,850	1,800		1,650		1,700
					<i>'</i>		
India  1,450  1,460  1,150  1,000  650  580    Turkey  3,163  3,801  4,517  3,425  4,086  4,040    TOTAL  30,092  29,259  34,753  32,171  33,448  38,007    Seed Import    3,53  623  283  393  582    Other  806  452  1,065  693  629  1,098    TOTAL  1,954  1,344  2,165  1,680  1,741  2,510    Seed Exports    7  70  70  1,144  117    Russia  167  35  155  1.8  1.3  600    Ukraine  338  72  774  350  446  580    Other  1,166  1,016  1,125  1,181  1,575  1,52    TOTAL  1,915  1,332  2,277  1,613  1,287  1,52    Other  1,162  1,016 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Turkey  820  670  850  790  1,020  940    Other  3,163  3,001  4,517  3,425  4,086  4,040    TOTAL  30,092  29,259  34,753  32,171  33,448  38,007    Seed Import     33,448  38,007  529  477  704  719  80  520  1,051  33,53  623  283  393  582  0.016  6452  1,065  693  629  1,098  629  1,098  629  1,098  629  1,098  629  1,098  629  1,098  629  1,098  629  1,098  629  1,098  629  1,094  1,133  610  1,117  830  446  580  611  1,215  1,018  1,057  1,152  1,018  1,057  1,152  1,018  1,057  1,152  1,018  1,057  1,153  1,150  0,113  0,018  1,018  1,020  1,132<							
Other  3,163  3,801  4,517  3,251  4,086  4,040    TOTAL  30,092  29,259  34,753  32,171  33,448  38,007    Seed Import							
TOTAL  30,092  29,259  34,753  32,171  33,448  38,007    Seed Import  Turkey  495  529  477  704  719  830    European Union  653  353  623  283  393  582    Other  806  452  1,065  693  629  1,098    TOTAL  1,954  1,334  2,165  1,660  1,741  2,510    Seed Exports  181  168  159  160  144  117    Russia  167  35  155  18  13  600    Ukraine  338  72  774  350  446  580    Other  1,161  1,015  1,018  1,070  2,519    TOTAL  1,915  1,332  2,277  1,613  1,730  2,519    Oil Production  11,320  10,200  12,817  12,543  12,296  14,228    Oil Induction  11,320  10,270							
Seed Import  1 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>,</td></th<>							,
Turkey  495  529  477  704  719  830    European Union  653  353  623  283  393  582    Other  806  452  1,065  693  629  1,098    TOTAL  1,954  1,334  2,165  1,680  1,741  2,510    Seed Exports    4/1  64  67  70  70    United States  1.81  1.68  1.59  1.60  1.44  1.77    Russia  167  3.5  1.55  1.8  1.3  600    Ukraine  3.38  72  774  3.50  4.46  580    Other  1,161  1,132  2,277  1,613  1,730  2,519    Oil Seed Crushed  27,517  25,331  31,096  30,454  29,967  34,137    Oil Opening Stocks  1,124  994  944  1,598  1,287  1,195    Oil Production  1,32		30,092	29,259	34,753	32,171	33,448	38,007
European Union  653  353  623  283  393  582    Other  806  452  1,065  693  629  1,098    TOTAL  1,954  1,343  2,165  1,680  1,741  2,510    Seed Exports	•	105			70.4	710	000
Other  806  452  1,065  693  629  1,098    TOTAL  1,954  1,334  2,165  1,680  1,741  2,510    Seed Exports							
TOTAL  1,954  1,334  2,165  1,680  1,741  2,510    Seed Exports	•						
seed Exports    Argentina  63  441  64  67  70  70    United States  181  168  159  160  144  117    Russia  167  35  155  18  13  600    Ukraine  338  72  774  350  446  580    Other  1,166  1,016  1,125  1,018  1,057  1,521    TOTAL  1,915  1,332  2,277  1,613  1,730  29,967  34,137    SUNFLOWER OIL —  701  012,531  31,096  30,454  29,967  34,135    Oil Production  11,320  10,200  12,871  12,543  12,396  14,223    Oil Inports  132  334  427  194  403  535    Egypt  303  195  114  175  45  90    Turkey  132  334  427  194  403  535    E							
Argentina  63  41  64  67  70  70    United States  181  168  159  160  144  117    Russia  167  338  72  774  350  446  580    Other  1,166  1,016  1,125  1,018  1,057  1,512    TOTAL  1,915  1,332  2,277  1,613  1,730  2,519    Oil seed Crushed  27,517  25,331  31,096  30,454  29,967  34,137    SUNFLOWER OIL  19,152  1,287  1,613  1,730  2,519    Oil Peoduction  11,320  10,200  12,871  12,543  12,396  14,228    Oil Imports  132  334  427  194  403  533    Egypt  303  195  425  503  3144  450    European Union  877  973  1,076  972  885  943    Russia  163  340 <td></td> <td>1,954</td> <td>1,334</td> <td>2,165</td> <td>1,680</td> <td>1,/41</td> <td>2,510</td>		1,954	1,334	2,165	1,680	1,/41	2,510
United States181168159160144117Russia167351551813600Ukraine33872774350446580Other1,1661,0161,1251,0181,0571,152TOTAL1,9151,3322,2771,6131,7302,519Oilseed Crushed27,51725,33131,09630,45429,96734,137SUNFLOWER OIL —9949441,5981,2871,195Oil Production11,32010,20012,87112,54312,39614,228Oil Inports132334427194403533Egypt133195425503314450European Union8779731,076972885943Russia124131465214368India663859593622776940Others2,1741,1612,4962,3612,2412,834TOTAL4,4123,7085,1774,8794,8075,860Oil Exports7791983825Other556679926741897950United States777791983825Other556679926741897950United States7777791983825O	•	( )	4.1	6.4	<b>7</b>	70	70
Russia  167  35  155  18  13  600    Ukraine  338  72  774  350  446  580    Other  1,165  1,016  1,125  1,018  1,057  1,152    TOTAL  1,915  1,332  2,277  1,613  1,730  2,519    Oilseed Crushed  27,517  25,331  31,096  30,454  29,967  34,137    SUNFLOWER OIL  —							
Ukraine33872774350446580Other1,1661,0161,1251,0181,0571,152TOTAL1,9151,3322,2771,6131,7302,519Oilseed Crushed27,51725,33131,09630,45429,96734,137SUNFLOWER OIL — </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
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TOTAL1,9151,3322,2771,6131,7302,519Oilseed Crushed27,51725,33131,09630,45429,96734,137SUNFLOWER OIL —0il Opening Stocks1,1249949441,5981,2871,195Oil Production11,32010,20012,87112,54312,39614,228Oil Imports							
Oilseed Crushed SUNFLOWER OIL —27,51725,33131,09630,45429,96734,137Oil Opening Stocks1,1249949441,5981,2871,195Oil Production11,32010,20012,87112,54312,39614,228Oil Imports1323344271944033535Egypt303195425503314450European Union8779731,076972885943Russia124131465214368India663859593622776940Others2,1741,1612,4962,3612,2412,834TOTAL4,4121311465214368India663859593622776940Others2,1741,1612,4962,3612,2412,834TOTAL4,41213146531951,000Others2,1741,1612,4962,3612,2412,834TOTAL4,3121,1881,082727893865European Union1531061331441582,000Ukraine1,8331,3392,1962,5522,6542,880United States777791983825Other5566799267418975,920Disapearance11,450<							
SUNFLOWER OIL —Oil Opening Stocks1,1249949441,5981,2871,195Oil Production11,32010,20012,87112,54312,3961,4228Oil Imports </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Oil Opening Stocks1,1249949441,5981,2871,214Oil Production11,32010,20012,87112,54312,39614,228Oil ImportsAlgeria139551141754590Turkey132334427194403535Egypt303195425503314450European Union8779731,0769728859433Russia1241314652143681India663859593622776940Others2,1741,1612,4962,3612,2412,834TOTAL4,4123,7085,1774,8794,8075,860Oil ExportsArgentina1,0801,1881,082727893865European Union1531061331441582000Russia6933408345031951,000Ukraine1,8331,3392,1962,5522,6542,880United States777791983825Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disapearance11,45010,25012,21712,85412,48813,810		27,317	25,551	51,090	30,434	29,907	34,137
Oil Production11,32010,20012,87112,54312,39614,228Oil Imports139551141754590Algeria139551141754590Turkey132334427194403535Egypt303195425503314450European Union8779731,076972885943Russia124131465214368India663859593622776940Others2,1741,1612,4962,3612,2412,834TOTAL4,4123,7085,1774,8794,8075,860Oil Exports777714,8794,8075,860Curopean Union153106133144158200Russia6933408345031951,000Ukraine1,8331,3392,1962,5522,6542,880United States7777919838252Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85414,01813,98715,780Meal Production12,79411,60714,29514,01813,98715,780Meal Imports3,7823,2594,7		1 1 2 4	994	944	1 598	1 287	1 195
Oil ImportsAlgeria139551141754590Turkey132334427194403535Egypt303195425503314450European Union8779731,076972885943Russia124131465214368India663859593622776940Others2,1741,1612,4962,3612,2412,834TOTAL4,4123,7085,1774,8794,8075,860Oil Exports11,881,082727893865European Union153106133144158200Russia6933408345031951,000Ukraine1,8331,3392,1962,5522,6542,880United States777791983825Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,2871,19514,01313,98715,780Meal Imports3,7823,2594,7134,1504,5715,2405,276Disappearance12,82111,65614,2934,1704		,			,		,
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Turkey132334427194403535Egypt303195425503314450European Union8779731,076972885943Russia124131465214368India663859593622776940Others2,1741,1612,4962,3612,2412,834TOTAL4,4123,7085,1774,8794,8075,860Oil Exports1,1881,082727893865European Union153106133144158200Russia6933408345031951,000Ukraine1,8331,3392,1962,5522,6542,880United States777791983825Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,2871,1631,673SUNFLOWER MEAL11,67514,29514,01813,98715,780Meal Imports3,7823,2594,7134,1504,5715,240Disappearance12,82111,53614,2934,1904,6895,276Me	•	139	55	114	175	45	90
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Oil ExportsArgentina1,0801,1881,082727893865European Union153106133144158200Russia6933408345031951,000Ukraine1,8331,3392,1962,5522,6542,880United States777791983825Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,2871,1951,613SUNFLOWER MEAL —11,60714,29514,01813,98715,780Meal Imports3,7823,2594,7134,1504,5715,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670	TOTAL						
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Ukraine1,8331,3392,1962,5522,6542,880United States777791983825Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,2871,1951,613SUNFLOWER MEAL —7714,29514,01813,98715,780Meal Production12,79411,60714,29514,01813,9875,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670	European Union	153	106	133	144	158	200
United States777791983825Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,2871,1951,613SUNFLOWER MEAL —711,60714,29514,01813,98715,780Meal Production12,79411,60714,29514,01813,9875,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670	Russia	693	340	834	503	195	1,000
Other556679926741897950TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,2871,1951,613SUNFLOWER MEAL — </td <td>Ukraine</td> <td>1,833</td> <td>1,339</td> <td>2,196</td> <td>2,552</td> <td>2,654</td> <td>2,880</td>	Ukraine	1,833	1,339	2,196	2,552	2,654	2,880
TOTAL4,3923,7295,2624,7654,8355,920Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,28711,1951,613SUNFLOWER MEAL —Meal Production12,79411,60714,29514,01813,98715,780Meal Imports3,7823,2594,7134,1504,5715,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670	United States			91	98	38	25
Disappearance11,45010,25012,21712,85412,48813,810Ending Stocks9949441,5981,2871,1951,613SUNFLOWER MEAL —	Other	556	679	926	741	897	950
Ending Stocks9949441,5981,2871,1951,613SUNFLOWER MEAL —Meal Production12,79411,60714,29514,01813,98715,780Meal Imports3,7823,2594,7134,1504,5715,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670	TOTAL	4,392	3,729	5,262	4,765	4,835	5,920
SUNFLOWER MEAL —Meal Production12,79411,60714,29514,01813,98715,780Meal Imports3,7823,2594,7134,1504,5715,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670	Disappearance	11 <i>,</i> 450	10,250	12,217	12,854	12,488	13,810
Meal Production12,79411,60714,29514,01813,98715,780Meal Imports3,7823,2594,7134,1504,5715,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670		994	944	1 <i>,</i> 598	1,287	1,195	1,613
Meal Imports3,7823,2594,7134,1504,5715,240Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670							
Disappearance12,82111,53614,2934,1904,6895,276Meal Exports3,7353,2894,77513,86613,96315,670							
Meal Exports  3,735  3,289  4,775  13,866  13,963  15,670							
•							
Ending Stocks275317257370275349							
	Ending Stocks	275	317	257	370	275	349

### **About the National Sunflower Association**

The National Sunflower Association (NSA) is a nonprofit organization dedicated to the promotion of U.S. sunflower and its products, and to the development of sunflower markets throughout the world.

Based in the capital city of the nation's largest sunflower producing state, NSA was incorporated in 1981. It is funded and governed by U.S. sunflower growers and industry representatives. Agreements with the U.S. Department of Agriculture's Foreign Agricultural Service provide funding for overseas market development programs, including this publication.

Among the many NSA programs and activities are the following:

• Developing and distributing technical literature on sunflower refining and nutrition.

• Providing technical assistance to foreign companies on oil refining and finished product manufacture; also, providing tech-

nical aid to U.S. confection sunflower customers.

• Producing and distributing a variety of literature pertaining to sunflower markets, the U.S. sunflower crop and sunflower products, including *The Sunflower* magazine, published six times annually

• Researching the marketplace and surveying consumer awareness of (and attitudes toward) sunflower products.

• Conducting industrial research abroad, including confection shelf-life and

other utilization studies.

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• Hosting foreign marketing and technical personnel, arranging meetings with U.S. sunflower industry representatives, setting up tours of U.S. processing and research facilities, and coordinating educational seminars for the benefit of foreign visitors.

The National Sunflower Association welcomes inquiries from any foreign agencies, companies or individuals interested in U.S. sunflower.

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#### U.S. Sunflower Information Online

The National Sunflower Association has a wealth of U.S. sunflower information online at www.sunflowernsa.com.

This web site provides international marketing information, product specifications, and a list of sunflower product suppliers.

Click on the "Buyers and Sellers" link for a list of sunflower product suppliers and buyers.

The "Sunflower oil" link provides more detailed information on sunflower oil.

Use the "Sunflower seed/kernel" link if you require information about confection sunflower seeds and kernel.



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