

# 2006 U.S. SUNFLOWER CROP QUALITY REPORT





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### ABOUT THE 2006 SUNFLOWER CROP QUALITY REPORT

The 2006 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 2006 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 latest U.S. Sunflower Crop Quality Report can be found on the NSA website, [www.sunflowernsa.com](http://www.sunflowernsa.com). Printed copies of this report can be made available by the NSA (See NSA contact information on page 11).



## 2006 U.S. SUNFLOWER ACREAGE, PRODUCTION

The 2006 growing season in many areas of the Plains was defined by drought, to a varying degree. Quality was generally excellent with virtually no disease, but hot, dry conditions affected yield. Drought was severe in the central Dakotas, significantly restricting sunflower yields, while sunflower in other areas such as the Red River Valley yielded well despite the dryness, taking advantage of ample subsoil moisture.

Overall, growers and processors were pleased with harvested crop quality. There were numerous reports of exceptional dryland yields in the Red River Valley and reports of test weight and oil as impressive. Yield and quality from the High Plains were generally variable, with oil

contents average at best. In the Northern Plains, there were reports of smaller seed size but surprisingly high oil, a reflection in part of a delayed killing frost that allowed sunflower in many areas to add oil.

The 2006 sunflower production totaled 2.14 billion pounds, down 47% from 2005 but up 5% from 2004. The U.S. average yield per acre decreased 329 lbs from last year's record high yield to 1,211 lbs. Planted area, at 1.95 million acres, is 28% below last year but 4% above 2004.

Acreage harvested decreased 32% from last year to 1.77 million acres. Production in North Dakota, the leading state, is estimated at 1.11 billion pounds, down 36% from 2005. Their 2006 yield per

acre, at 1,296 lbs, is down 290 pounds from last year's record high yield. Planted and harvested acres in N.D. decreased from 2005 by 21 and 22%, respectively. In Kansas, Nebraska, and South Dakota, yields are also down sharply from last year's record high yields. Minnesota is the only state with a yield increase from last year, at 1,756 lbs/ac, up 308 lbs from 2005. This is Minnesota's second highest yield on record, behind only the 1991 record yield of 1,781 lbs/ac.

U.S. production of oil type sunflower varieties, at 1.79 billion pounds, decreased 44% from 2005. Harvested acres are down 25% from the previous year and the yield decreased by 383 lbs. Production of non-oil sunflower varieties, at 356 million lbs, decreased 58% from last year. Area harvested, at 256,000 acres, is down 56% from 2005. The average yield decreased by 66 lbs from last year to 1,389 lbs/ac, but is still the third highest U.S. yield on record for non-oil varieties.

### U.S. SUNFLOWER PRODUCTION

(1,000 pounds)

	2004	2005	2006
Oil	1,763,378	3,177,635	1,787,966
Non-Oil	286,235	840,720	355,647
<b>Total</b>	<b>2,049,613</b>	<b>4,018,355</b>	<b>2,143,613</b>

### U.S. OIL-TYPE SUNFLOWER HARVESTED AREA, BY STATE

(Thousands of Hectares)

State	2000	2001	2002	2003	2004	2005	2006
Colorado	43.0	48.6	24.3	34.4	32.4	58.7	30.4
Kansas	75.8	117.4	62.7	62.7	56.7	99.2	52.6
Minnesota	19.6	11.3	15.0	21.9	11.3	29.1	21.4
Nebraska	20.0	20.2	13.8	19.4	14.2	23.5	12.5
North Dakota	401.8	337.0	447.2	412.8	267.1	358.2	299.5
South Dakota	278.8	267.5	151.8	174.0	159.4	194.7	165.9
Texas	5.3	13.4	3.6	6.5	6.5	19.4	5.3
Other	20.0	17.4	16.2	26.7	28.7	39.5	25.1
<b>Total</b>	<b>864.7</b>	<b>833.7</b>	<b>734.6</b>	<b>758.4</b>	<b>576.3</b>	<b>822.3</b>	<b>612.7</b>



## A DEFINING MOMENT FOR SUNFLOWER

*Frito-Lay, Inc., the world's largest snack food maker, switched its flagship potato chip brands, Lay's and Ruffles, entirely to NuSun® mid-oleic sunflower oil.*

It was the biggest moment yet since NuSun® mid-oleic sunflower oil first became commercially available in December, 1998. Frito-Lay, Inc., the world's largest snack food maker, announced on May 3, 2006, that it was switching its flagship potato chip brands, Lay's and Ruffles, entirely to NuSun®.

Now, sunflower is the only oil on the ingredient label, and a sunflower icon is used on the front of the new Lay's and Ruffles bags of chips distributed nationally. Frito-Lay has more than fifteen \$100 million brands, and the Lay's brand is the biggest, with more than \$2 billion in sales.

Officials of Frito-Lay said that the move to NuSun® will increase the mono- and polyunsaturated fats, commonly known as "good fats," in their potato chip products, in addition to reducing the saturated fats.

"We are removing nearly 60 million pounds of saturated fat annually from the American diet, while keeping the same great taste," said Rocco Papalia, senior vice president, research and development, Frito-Lay North America. "And more importantly, by switching to NuSun® sunflower oil, we are increasing heart healthy mono- and polyunsaturated fats in the diet."

The announcement by this major snack food manufacturer significantly raises the

visibility of sunflower oil in the domestic and world market, and the prominent display of the sunflower icon on the Frito-Lay packaging will be a reminder to consumers that sunflower is an oil of choice.

### KEY REASONS BEHIND THE SWITCH TO NUSUN®

Along with imparting a pleasant taste and stability for product shelf life, there are valid health reasons for food companies and oil users to turn to NuSun®. Sunflower oil consists largely of mono- and polyunsaturated fats with very small amounts of saturated fats. Sunflower oil does not need to be hydrogenated for frying stability or

to preserve shelf life, and is naturally free of trans fats, 'bad' fat that must now be identified on food labels in both the U.S. and Canada.

Dietary recommendations from government agencies and health organizations have put more emphasis on reducing saturated and trans fats and replacing them with unsaturated fats in recent years, and food companies and oil users switching to NuSun® oil reflects these dietary recommendations.

Scientific research shows that mono- and polyunsaturated fats have heart health benefits that include lowering total and LDL ('bad') cholesterol, whereas saturated and trans fats raise cholesterol levels. NuSun® sunflower oil

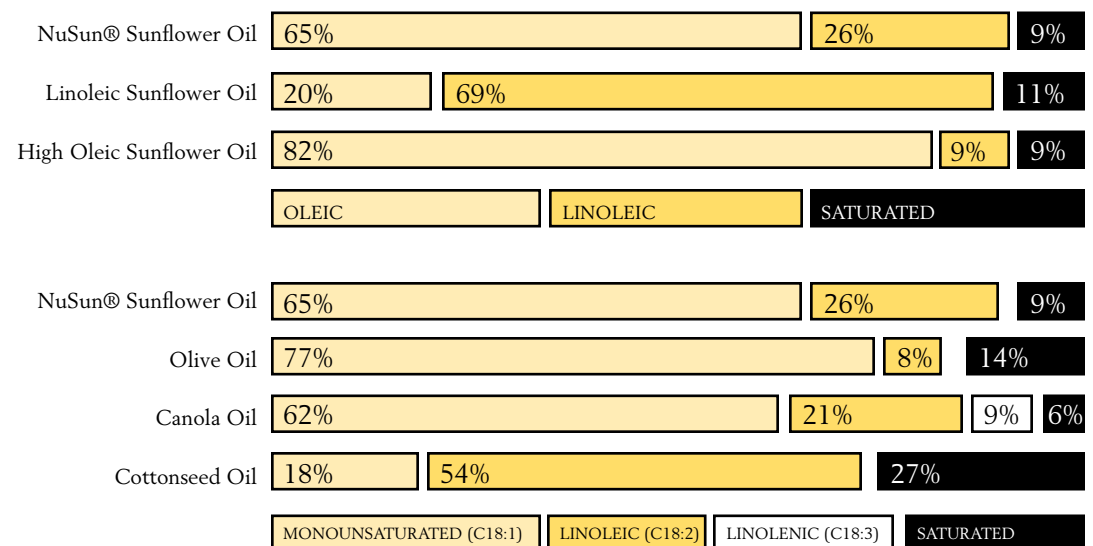
is higher in monounsaturated fat than regular sunflower, which makes it an excellent oil for many food applications.

Further validating the health aspects of NuSun® is a Penn State study, published in the Journal of the American Dietetic Association, which demonstrated that consuming a diet that included NuSun® sunflower oil had a greater total and LDL cholesterol-lowering effect than either an 'average' American diet or a diet that included an equivalent amount of olive oil.

Nutrition experts involved with the study say the benefit was most likely due to the more favorable balance of monounsaturated and polyunsaturated fats in the sunflower oil, which also is lower in saturated fat compared with olive oil.



### FATTY ACID COMPOSITION





# 2006 SEED QUALITY/CONFECTION KERNEL SPECIFICATIONS

Seed quality and kernel specifications of the 2006 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 and Aberdeen (S.D.) Grain Inspection.

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 Inspec-

tion, Packers & 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 43.4%, up significantly from the 2005 average of 42.7% and the highest in five years. Test weight was 31.9 pounds per bushel, significantly higher than the 2005 test weight of 31.3, and also the highest in five years. Foreign ma-

terial at 4.9% was slightly higher than 2005, but still considerably less than in the past few years. Moisture at 9.2% was lower than the 2005 moisture of 9.7%.

The percentage of confection seed in 2006 over 20/64 in size was

70.7%, similar to last year and significantly higher than in past years. Foreign material in 2006 samples was 6.4%, less than last year and the best in recent years. Test weight at 26.3% was higher than in 2005, with moisture (10.5%) less than in 2005.

## OIL-TYPE SUNFLOWER SEED QUALITY

Year	Test Weight	Moisture	Foreign Material	Oil%
2006	31.9	9.2	4.9	43.4
2005	31.3	9.7	4.4	42.7
2004	28.4	10	8.3	41.1
2003	30.7	8.5	6.0	42.6
2002	29.8	10.8	5.3	42.1

## NON-OIL SUNFLOWER SEED QUALITY

Year	Test Weight	Moisture	Foreign Material	Over 20/64 Size
2006	26.3	10.5	6.4	70.7
2005	25.1	10.9	7.9	70.9
2004	23.2	11.8	14.5	67.3
2003	25.4	10.1	7.7	67.1
2002	26.6	10.1	8.1	55.9

## 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  
- 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 necessary. Residues may not exceed FDA approved tolerances
- Quality and type of kernel is determined with the following factors to meet specific customer needs:**
- Size** - Defined as kernel count per oz
  - Foreign Material** - Includes shells and unshelled seed, defined as percentage or count per unit of weight
  - Moisture** - Defined as a percentage at or below 8%
  - Damage** - Distinctly discolored kernel or insect damage. Each defined as a percentage
  - Broken or Chip** - Any portion less than 1/2 kernel defined as a percentage
  - Sticktites** - Kernel with a piece of shell adhering, defined as count per unit of weight.



## 2006 OIL QUALITY ANALYSIS/OIL TRAITS, RULES

The tables below compare the oil quality and fatty acid content of representative samples of linoleic and mid-oleic sunflower seed oil, gathered from the 2006 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 60.66% oleic average of NuSun® samples was higher than the 59.44% average in 2005, and the highest since 2001, which had a 61.15% average.

The 2006 linoleic acid content of 63.25% is higher than the 62.64% average of 2005 crop samples. The 25.38%

oleic level average of the 2006 sunflower oil samples is lower than the 25.92% average of the 2005 oil samples. As is the case each year, climatic factors and the timing of production contributed to the level of both linoleic and oleic acid in the samples collected each harvest.

See general trading rules for linoleic oil, as well as product specification tables for confection kernel and sunflower meal at various protein levels, at [www.sunflowernsa.com](http://www.sunflowernsa.com). Click on the link "Buyers and Sellers," then "product specifications." For further information or questions regarding trading rules, go to the American Fats & Oils Assn Inc web site, [afoonline.org](http://afoonline.org).

### SUNFLOWER OIL QUALITY LINOLEIC

Percent

Year	Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3
2006	5.78	4.59	25.38	63.25	0.20
2005	5.87	4.19	25.92	62.64	0.21
2004	5.95	4.28	24.85	63.56	0.38
2003	5.97	4.13	22.96	65.54	0.26
2002	5.75	4.36	24.63	63.95	0.25

### SUNFLOWER OIL QUALITY NuSUN®

Percent

Year	Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3
2006	4.24	3.66	60.66	28.98	0.27
2005	4.36	3.51	59.44	31.04	0.44
2004	4.39	3.53	58.01	32.59	0.42
2003	4.46	3.40	60.26	29.50	0.18
2002	4.32	3.49	59.52	30.97	0.17

### MID-OLEIC SUNFLOWER OIL (NuSUN®): CRUDE

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

ITEM	VALUE
Flash Point (AOCS Cc 9b-56)	250°F Minimum
Halphen Test	Negative
Saponification Value	188-194
Unsaponifiable	1.3% Maximum
Free Fatty Acid (as Oleic)	Basis 2.0% Maximum 3.0%
Moisture and Volatile (AOCS Ca 2d-25)	0.5% Maximum
Insoluble Impurities (AOCS Ca 3-46)	0.3% Maximum
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)	2.5 Red Maximum
Linolenic acid	1.0% Maximum
Oleic (as % of TFA)	55% Minimum 75% Maximum

**Rule 14B** -- Crude mid-oleic sunflower oil (NuSun®) shall be pure and produced only from sunflowerseed of fair average quality by hydraulic, expeller, or solvent extraction process. The 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®): 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 and Impurities (AOCS Ca 2d-25)	0.10% Maximum
Peroxide Value	2.0 Maximum
Color (Lovibond Scale)	2.5 Red Maximum
Iodine Value	88-115.0
Oleic	55% Minimum 75% Maximum
Flavor	Pleasing
Appearances (Waxes Not Separated)	Will be cloudy at room temperature
<b>Other Possible Specs:</b>	
Saponification Value	186-194
Unsaponifiable	1.5% Maximum
Specific Gravity by 20 Degrees Centigrade	0.917-0.924

**Rule 15B** -- Fully refined, bleached and deodorized mid-oleic sunflower oil (NuSun®) 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)



## 2006 SUN OIL & MEAL EXPORTS

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

countries. U.S. sunflower oil exporters can deliver three types of sunflower oil: NuSun®, Linoleic and High Oleic.

NuSun® is a mid-range oleic, 55%-75% (monoun-

saturated) sunflower 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 the taste of products.

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

**High Oleic** sunflower oil has 80% or more oleic (monounsaturated) acid.

This unique oil has many specialty applications.

**Sun Meal Exports** -- Most of the 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. Both U.S. sunflower oil and meal exports rebounded significantly in 2005/06 compared to 2004/05, a reflection of market supply and demand.

### U.S. SUNFLOWER MEAL EXPORTS

October 05 - September 06

Country	2002/03	2003/04	2004/05	2005/06
Canada	1,740	231	304	1,669
Mexico	1,372	1,455	2,491	4,363
Ireland	0	4,276	0	0
U.K.	0	5,468	0	0
Other	31	549	323	21
Total MT	3,143	11,979	3,118	6,053

### U.S. SUNFLOWER OIL EXPORTS

October 05-September 06

Country	2002/03	2003/04	2004/05	2005/06
Belgium	23	742	2,722	6,001
Canada	16,939	19,509	41,167	47,905
El Salvador	0	270	18	11
Guatemala	1,050	201	590	272
Japan	10,228	3,572	3,240	2,372
Lebanon	556	490	464	13
Mexico	5,258	63,786	5,334	26,154
Netherlands	16	30	0	5,658
Singapore	11	783	1,673	4,162
South Korea	299	356	158	81
Taiwan	4,230	195	198	267
Other	13,055	19,742	2,213	2,590
Total MT	51,665	109,676	57,777	95,486





# U.S. SUPPLY & DISAPPEARANCE

(In 1,000 Metric Tons, Unless Specified)

Item	2001/02 Oct-Sep	2002/03	2003/04	2004/05	2005/06 Revised	2006/07 Forecast
<b>NON-OIL SUNFLOWER</b>						
Area Harvested (1,000 HA)	200	146	131	116	234	104
Area Harvested (1,000 AC)	495	361	323	287	578	256
Yield (MT\HA)	1.39	1.20	1.41	1.12	1.63	1.56
Yield (LB/AC)	1,243	1,067	1,256	997	1,455	1,389
Stocks, Oct 1	22	15	13	11	12	120
Production	279	175	184	130	382	161
Seed Import	56	73	75	34	29	45
<b>TOTAL SUPPLY</b>	<b>357</b>	<b>263</b>	<b>272</b>	<b>175</b>	<b>422</b>	<b>327</b>
Disappearance	342	250	261	163	302	310
Ending Stocks	15	13	11	12	120	17
<b>OIL SUNFLOWER</b>						
Area Harvested (1,000 HA)	834	731	758	576	822	613
Area Harvested (1,000 AC)	2,060	1,806	1,874	1,424	2,032	1,514
Yield (MT\HA)	1.53	1.28	1.35	1.39	1.75	1.32
Yield (LB\AC)	1,361	1,144	1,206	1,238	1,564	1,181
Stocks, Oct 1	40	41	113	107	55	350
Production	1,272	937	1,025	800	1,442	811
Seed Import	16	24	25	10	13	25
<b>TOTAL SUPPLY</b>	<b>1,328</b>	<b>1,002</b>	<b>1,164</b>	<b>917</b>	<b>1,510</b>	<b>1,186</b>
Oilseed Crushed	723	346	609	276	597	665
Planting Seed, Birdfood, Domestic Use	536	543	448	586	563	445
Exports	28	0	0	0	0	0
Disappearance	1,287	889	1,057	862	1,160	1,110
Ending Stocks	41	113	107	55	350	76
<b>SUNFLOWER OIL</b>						
Stocks, Oct 1	62	10	12	12	10	25
Oil Imports	16	28	12	34	26	30
Oil Production	304	145	256	116	248	266
<b>TOTAL SUPPLY</b>	<b>382</b>	<b>183</b>	<b>280</b>	<b>162</b>	<b>283</b>	<b>321</b>
Domestic Oil Use	166	119	157	94	163	245
Oil Exports	206	52	111	58	95	65
Total Use	372	171	268	152	258	310
Ending Stocks	10	12	12	10	25	11
<b>SUNFLOWER MEAL</b>						
Stocks, Oct. 1	7	3	3	3	4	3
Production	347	166	292	132	287	319
<b>TOTAL SUPPLY</b>	<b>354</b>	<b>169</b>	<b>295</b>	<b>136</b>	<b>290</b>	<b>323</b>
Domestic Use	325	163	280	129	281	310
Exports	26	3	12	3	6	9
Total Use	351	166	292	132	287	319
Ending Stocks	3	3	3	4	3	4

Table Data: NSA Assumptions





# WORLD SUNFLOWER SUPPLY/DISAPPEARANCE

Item	2001/02	2002/03	2003/04	2004/05	2005/06 Revised	2006/07 Forecast
Area Harvested (1,000 HA)	18485	19941	22820	21254	22900	23320
Yield (MT/HEC)	1.18	1.2	1.18	1.23	1.32	1.29
<b>SUNFLOWER SEED</b>						
<b>Production</b>						
Argentina	3720	3340	2980	3730	3800	3900
Eastern Europe	1861	2019	2670	2250	1975	2110
European Union	3030	3718	4070	4069	3714	3974
China, Peoples Republic of	1750	1946	1820	1700	1830	1820
Russia/Ukraine	4936	7194	9348	8001	11440	11650
United States	1551	1112	1209	930	1824	972
India	870	1060	1160	1300	1490	1380
Turkey	530	830	560	640	800	820
Other	3551	2738	3069	3555	3279	3374
<b>TOTAL</b>	<b>21799</b>	<b>23957</b>	<b>26886</b>	<b>26175</b>	<b>30152</b>	<b>30000</b>
<b>Seed Import</b>						
Mexico	10	104	38	11	17	17
European Union	856	1007	1473	754	1002	790
Other	446	733	1252	753	921	1042
<b>TOTAL</b>	<b>1312</b>	<b>1844</b>	<b>2763</b>	<b>1518</b>	<b>1940</b>	<b>1849</b>
<b>Oilseed Crushed</b>	<b>21116</b>	<b>18514</b>	<b>21149</b>	<b>23442</b>	<b>23115</b>	<b>25510</b>
<b>Seed Exports</b>						
Argentina	342	232	44	99	45	50
United States	176	122	136	117	155	130
Russia/Ukraine	100	524	1271	73	590	340
Other	691	1062	1279	1229	1150	1329
<b>TOTAL</b>	<b>1309</b>	<b>1940</b>	<b>2730</b>	<b>1518</b>	<b>1940</b>	<b>1849</b>
<b>SUNFLOWER OIL</b>						
<b>Oil Opening Stocks</b>	<b>902</b>	<b>768</b>	<b>834</b>	<b>778</b>	<b>797</b>	<b>912</b>
<b>Oil Production</b>	<b>7435</b>	<b>8708</b>	<b>9591</b>	<b>9331</b>	<b>10938</b>	<b>11165</b>
<b>Oil Imports</b>						
Algeria	192	214	208	125	134	135
Turkey	133	72	81	157	456	430
Egypt	130	87	187	193	256	250
Mexico	40	52	110	54	91	90
Russia	173	193	175	136	101	90
Taiwan	25	27	26	21	24	24
Others	1570	1874	2054	2153	3311	3422
<b>TOTAL</b>	<b>2263</b>	<b>2519</b>	<b>2841</b>	<b>2839</b>	<b>4373</b>	<b>4441</b>
<b>Disappearance</b>	<b>7646</b>	<b>8620</b>	<b>9667</b>	<b>9322</b>	<b>10732</b>	<b>11330</b>
<b>Oil Exports</b>						
Argentina	1083	1094	944	1230	1306	1270
European Union	120	138	179	131	109	106
Eastern Europe	58	59	157	225	155	164
United States	206	52	110	58	95	65
Others	721	1231	1441	1185	2800	2757
<b>TOTAL</b>	<b>2188</b>	<b>2574</b>	<b>2831</b>	<b>2829</b>	<b>4465</b>	<b>4362</b>
<b>Ending Stocks</b>	<b>768</b>	<b>800</b>	<b>709</b>	<b>797</b>	<b>912</b>	<b>825</b>
<b>SUNFLOWER MEAL</b>						
Meal Production	8584	9769	10959	10643	12082	12308
Meal Import	2294	2569	3059	3027	3597	3620
Disappearance	8638	9770	10969	10551	11950	12360
Meal Exports	2282	2592	3035	3022	3630	3591
Ending Stocks	92	80	79	176	275	251

Source: Oil World & USDA



## NU SUN®, CLEARFIELD™, DEVELOPED WITH STANDARD HYBRID BREEDING METHODS

Currently, no transgenic sunflower is commercially available in the United States. Some commodity buyers request proof of non-transgenic crop origin, however, and thus for sunflower seed or oil exports, the NSA provides members with a letter stating that U.S. sunflower is currently free of transgenic traits. USDA's Grain Inspection, Packers and Stockyards Administration (GIPSA) is providing similar documentation upon request.

NuSun®, the new category of cooking oil made from sunflower that is mid-oleic, predominantly monounsaturated, with low saturated fat, is non-transgenic. It was developed with standard hybrid breeding methods.

It should be noted that Clearfield™ sunflower technology now available to sunflower producers is nontransgenic. Clearfield sunflower is conventionally bred sunflower resistant to imazamox herbicide for control of a wide array of grassy and broadleaf weeds. The Clearfield technology was developed by BASF, and the resistant breeding work was done by USDA and the private hybrid seed industry.





## ABOUT THE NATIONAL SUNFLOWER ASSOCIATION

The National Sunflower Association (NSA) is a non-profit 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 technical 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 overseas, including confection shelf-

life and other utilization studies.

- 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.

NSA 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, [www.sunflowernsa.com](http://www.sunflowernsa.com). Click on the "Buyers Information" link for international marketing information, product specifications, and a list of sunflower product suppliers.

The NuSun® link has more information about this mid-oleic oil, and suppliers.

See the Confection/Non-oil link for a list of industry suppliers.





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