

A vibrant field of sunflowers with bright yellow petals and dark brown centers, set against a clear blue sky. The sunflowers are in various stages of bloom, and their green leaves are visible at the base. The overall scene is bright and cheerful.

2000

U.S. Sunflower Crop Quality Report

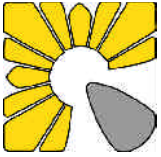


Table of Contents

About the 2000 Report	2
2000 Acreage, Production	3
NuSun Oil	4
Seed Quality	5
Oil Traits/Fatty Acid Profile	6
Sun Oil and Meal Exports	7
U.S. Supply/Disappearance	8
World Supply/Disappearance	9
U.S. Sunflower Non-Transgenic	10
About the NSA, Contacts	11

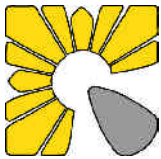


About the 2000 Report



The 2000 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 2000 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 year's U.S. Sunflower Crop Quality Report is the first to be exclusively electronic. However, printed copies of this report can be made. Contact the NSA for more details (See contact information page 11).



U.S. Sunflower Acreage, Production 2000

In the northern sunflower-producing region (Minnesota, North Dakota, South Dakota), sunflower planting conditions were much more favorable in 2000 compared to the wet conditions in most of the northern region in 1999. However, dry conditions in the High Plains (western Kansas, eastern Colorado, southwest Nebraska) were a problem much of the growing season, dropping yield under last year's near record levels.

Favorable weather enabled good progress of the 2000 U.S. sunflower harvest, although an early onset of winter slowed the latter part of harvest in November. About 50,000 acres of sunflower (virtually all in North Dakota) remained unharvested at Christmas, which was less than 5% of the crop.

Generally, however, sunflower yields in the Dakotas and Minnesota were good to excellent, with few reported yields under the 1,400 pound level. Oil contents commonly averaged 43% for both NuSun and traditional linoleic types. Test weights from 28 to 34 pounds appear to be the range for oil-types with the average close to 31 pounds. Confection yields and quality in the Northern Plains were also good to excellent with good seed size.

Overall, the 2000 sunflower production totaled 3.59 billion pounds, 17% below the 1999 production and

32% below 1998. The estimated yield per acre (oil and confection), at 1,363 pounds, increased 101 pounds from 1999, but is 147 pounds below the record set in 1998. Planted area, at 2.79 million acres, was down 21% from 1999 and down 22% from 1998. Harvested acres, at 2.63 million acres, decreased 24% from last year. U.S. production of oil sunflower varieties, at 2.96 billion pounds, decreased 15% from 1999. The 20% reduction in acreage harvested was somewhat offset by a yield increase of 107 pounds. U.S. production for non-oil or confection sunflower varieties, at 621 million pounds, decreased 26%. Acreage harvested for non-oil varieties decreased by 30% from 1999. However, the average yield per acre, at 1,194 pounds, increased 63 pounds from 1999.

U.S. Sunflower Production
(1,000 pounds)

	1998	1999	2000
Oil	4,486,360	3,497,820	2,963,652
Non-Oil	786,802	844,042	620,687
Total	5,273,162	4,341,862	3,584,339

U.S. Oil-Type Sunflower Harvested Area, By State
(Thousands of Hectares)

State	1994	1995	1996	1997	1998	1999	2000
Colorado	28.0	25.0	17.8	19.0	43.3	69.6	43.0
Kansas	77.0	87.0	93.1	66.8	62.7	97.1	75.8
Minnesota	152.0	144.0	39.3	29.1	35.2	31.2	19.6
Nebraska	18.0	17.0	8.9	9.7	15.4	19.0	20.0
North Dakota	530.0	490.0	360.2	445.2	639.4	493.7	401.8
South Dakota	363.0	353.0	256.2	301.5	358.2	348.8	278.8
Texas	8.0	7.0	3.2	8.9	4.5	9.7	5.3
Other	16.0	22.0	12.3	15.0	13.8	21.5	20.0
Total U.S.	1,191.0	1,145.0	791.0	895.2	1,172.5	1,090.6	864.7

Source: USDA



Industry Gives High Marks for NuSun™ Performance

NuSun got a huge vote of confidence in the summer of 2000, when Procter & Gamble announced that it was switching its Pringles line of potato chips at its Jackson, TN plant to the up-and-coming sunflower oil. The Jackson plant supplies Pringles to the U.S., Latin America, Canada and a good portion of Asian markets. It was a ringing endorsement, as more Pringles are sold worldwide than any other potato snack brand.

David Chang, Procter & Gamble, Cincinnati, OH, has since reaffirmed that NuSun, as a mid-oleic vegetable oil, is more stable than many frying oils, and shows less product darkening of the chips during the frying process. It has a clean taste that is important for consumers but also for bringing out Pringles' flavorings. He notes that as a natural hybrid, NuSun is a good oil choice. Chang says the company is using NuSun for a major part of its production and would like to expand its use.

Industrial users would like to see more acres of NuSun to assure consistent supplies, however. Growers thus far are responding: About 50 million pounds of NuSun was produced in 1998, the first year of commercial production, and supplies are expected to increase following the 2000 crop year. Industry experts say that while NuSun accounts for about one-

third of sunflower acreage in 2000, it could be half to two-thirds of the crop in 2001.

The NSA has been working closely with the U.S. sunflower industry on the development of NuSun, defined as a mid-range oleic (C18:1) oil. Its levels of oleic acid may vary from 55 to 75%, with the industry looking for an average of about 65 percent. Linoleic acid (C18:2) levels range from 15 to 35%; total saturates will be less than 10%.

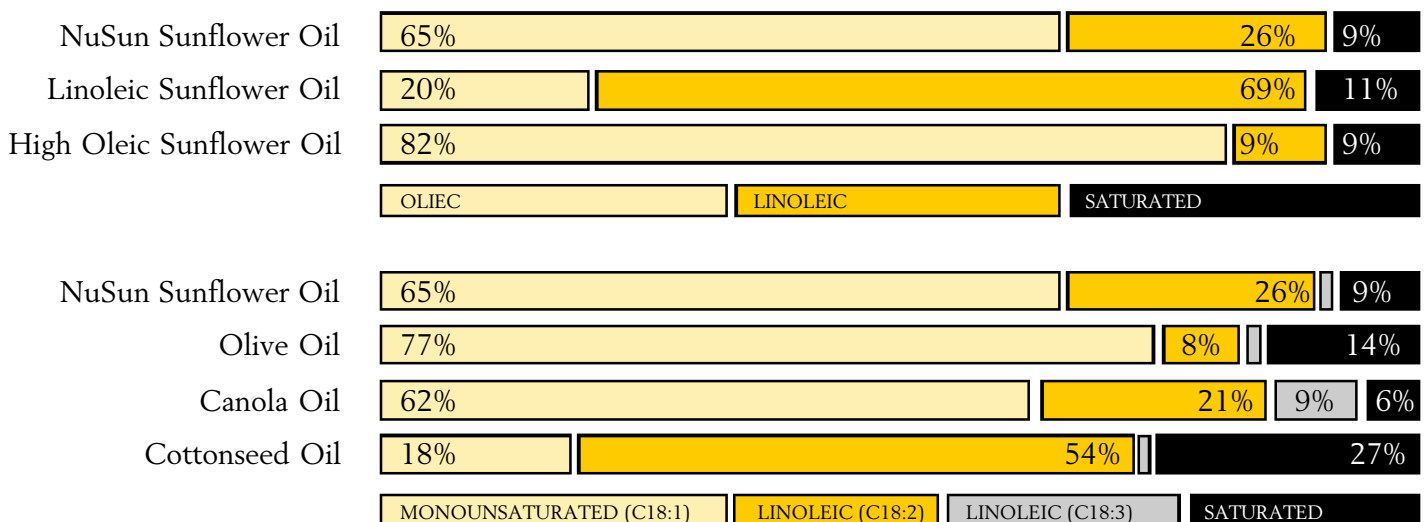
Hybrid NuSun seed was developed using traditional breeding practices, and dozens of varieties have been tested in public trials the past five years.

NuSun was developed as a response to U.S. domestic market requirements. U.S. food processors desire a vegetable oil that is low in saturated fatty acids, and can be used in industrial or food service frying applications without hydrogenation.

Because of the fatty acid structure of NuSun, hydrogenation is not required for most frying uses. NuSun is lower in saturated fatty acids than most oils. This trait, combined with no trans-fatty acids, gives food manufacturers an excellent alternate choice.

Buyers now have additional choices among (1) linoleic sunflower oil high in polyunsaturates, (2) high-oleic sunflower oil and (3) NuSun oil.

Fatty Acid Composition





Seed Quality/Kernel Specifications

Approximately 2,500 samples of oil-type sunflower seed, as well as 6,000 samples of nonoil (confection) sunflower seed, were collected from the Minnesota, North Dakota, South Dakota and High Plains growing areas during the 2000 fall harvest. About 70% of the oil-type seed samples and 75% of the non-oil samples came from the tri-state Northern Plains production region.

The samples, collected with the aid of the North Dakota Grain Inspection Service, Kansas Grain Inspection Service and Aberdeen (S.D.) Grain Inspection, were drawn from sunflower loads delivered to processors, or from submitted samples taken at local grain buying facilities.

The seed samples were analyzed according to USDA Grain Inspection, 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.

Quality characteristics of the 2000 U.S. sunflower seed crop — both oil-type and non-oil — reflected the type of growing season experienced. The average oil content of the 2000 oil-type seed samples was 43.0% — .8 points higher than the average of the 1999 crop samples. The range of oil contents among survey samples went from 29 on the low end to a high of 54.

Oil-Type Sunflower Seed Quality				
Year	Test Weight*	Moisture	Foreign Matter	Oil%**
2000	30.2	9.5	5.9	43.0
1999	28.6	9.4	8.0	42.2
1998	30.8	9.8	3.9	43.9
1997	30.9	9.5	4.0	44.0
1996	30.3	9.6	4.7	43.0
1995	29.8	9.9	4.7	43.1
1994	30.6	9.4	4.4	44.8

*Test weights are in pounds/bushel.
 **Oil content determined on clean-seed basis using Nuclear Magnetic Resonance (NMR) analysis. The oil content is standardized to a 10% moisture basis.

Average test weight of the 2000 oil-type samples was 30.2 pounds per bushel — 1.6 points higher than the average of the previous year's samples. At 5.9%, foreign material levels in the 2000 samples were about 26% below that of the prior year's samples. Average seed moisture was about the same as that of '99.

The 2000 season was the third in which the U.S. crop quality survey included nonoil (confection) sunflower. The 2000 averages were as follows (with 1999 comparative figures in parentheses): Test weight, 24.8 pounds per bushel (24.4 pounds), Percent seeds over 20/64 in size, 65.9% (66.1%); foreign material, 8.1 (8.1%); moisture content, 10.8% (10.3%).

U.S. Confection Sunflower Kernel Product Specifications	
Origin	- Confection 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 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
Moisture	- Not more than 10%; not less than 4%
Size	- Not more than 650/oz.
Foreign Material, Shell/Unshelled Seed	- Not more than 0.1%
Damage	- Not more than 0.5% heat damage and not more than 2 % misc. damage
Broken Kernels	- Not more than 10% (broken kernel is any portion less than 1/2 kernel)



Fatty Acid/Oil Traits, Rules

The tables below compare the fatty acid content of 954 representative samples of sunflower seed oil, gathered from the 2000 U.S. crop, to previous years' data on oil quality. The samples broken down by type of oil are: 284 of linoleic sunflower oil and 670 of NuSun sunflower oil. 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 2000 samples.

The sunflower oil quality analysis was conducted with standard gas chromatography, basis American Oil Chemists' Society Method #Cel-62.

For linoleic sunflower oil, the linoleic acid content of 65.76% is well below that of the 70.8% average of the 1999 crop samples. The 22.01% oleic level average of the 2000 sunflower oil samples is well above the 17.17% average of the 1999 oil samples.

NuSun oil samples were included in the 2000 quality analysis. The 59.08% oleic level average of the 2000 sunflower oil samples is well above the 54.79% average of the 1999 oil samples.

High oleic sunflower is estimated to currently

account for about 5-10% of U.S. oil-type sunflower acreage. The different varieties of "high oleic" hybrid seed historically have produced oleic levels ranging between 70% to 90%, depending upon the hybrid used and the environmental conditions during a particular growing season.

Refined, Bleached, Deodorized, Dewaxed Sunflower Oil

Item	Specification
Iodine Value	130-144
Saponification Value	188-194
Refractive Index at 25°	1.4740-1.4745
Smoke Point	252-254° C
Phosphates	1 PPM Max
Unsaponifiable	1.5% Max
Color Lovibond	2.0 Red, 20.0 Yellow
Peroxide	2.0 Meq/Kg
Fat Stability by AOM	Peroxide 35 After 8 Hrs.
Chlorophyll	0.03 PPM Max
Moisture and Volatiles	0.10% Max
Free Fatty Acids	0.05 % Max
Soap (Sodium Oleate)	0.003 % Max
Chill Test: 0° C (32° F)	48 Hours
4.4° C (40° F)	120 Hours
Flavor and Odor	Not Rancid, Bitter or Sour

American Fats & Oils Association Rule 14

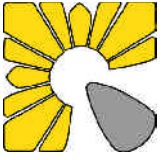
Specification	Amount
Flash Point (AOCS Cc9b-55)	250° F Minimum
Halphen Test	Negative
Saponification Value	188-194
Unsaponifiable	1.3% Maximum
Free Fatty Acids (as Oleic)	Basis 2%, Maximum 3%; 1-for-1 allowance over 2, fraction for-fraction; nonreciprocal
Moisture and Volatiles (AOCS Ca 2d-25)	0.5% Maximum
Insoluble Impurities (AOCS Ca 3-46)	0.3 Maximum
Color in 5-1/4 inch cell or tube, as determined under AOCS Method c 13b-45), bleached (AOCS Cc 8g-52), after refining (AOCS Cc 8g-52), after refining (AOCS Ca 9a-52)	2.5 Red Maximum
Linolenic Acid	1.0% Maximum

Sunflower Oil Quality Linoleic Percent

Year	Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3
2000	6.04	4.53	22.01	65.76	0.250
1999	6.19	4.33	17.17	70.80	0.210
1998	6.15	4.27	22.83	65.29	0.197
1997	5.99	4.27	19.39	68.70	0.240
1996	6.30	4.13	19.60	68.28	0.240
1995	6.47	4.01	19.74	67.87	0.119
1994	6.10	4.44	18.27	69.47	N.A.

Sunflower Oil Quality NuSun Percent

Year	Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3
2000	4.33	4.14	59.08	30.58	0.39
1999	4.58	3.53	54.79	35.48	0.14



Sun Oil & Meal Exports

Mexico Top Sun Oil Buyer 1999/00 — Mexico continued far-and-away as the top buyer of U.S. sunflower oil during the 1999/00 marketing year (October-September), with buyers there importing 169,577 metric tons, an increase of about 18,000 MT from the previous year. Mexico represents 78% of the total.

The next largest buyer of U.S. sun oil in 1999/00 was Algeria, followed by Canada, Egypt, and Taiwan rounding out the top five. Total U.S. sun oil exports in 1999/00 were 286,025 MT, a significant drop from 362,795 MT of sun oil exported in 1998/99, due in part to plentiful vegetable oil stocks worldwide.

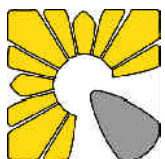
Meal Consumption Declines — At 20,812 metric tons, U.S. Sunflower meal exports in 1999/00 were hard-pressed to match the impressive 41,221 metric

tons of sun meal exported in 1998/99. Last year's meal export amount was still larger than in 1997/98 and 1996/97, however. Though it bought significantly less sun meal than in 1998/99, Ireland was still the top buyer of sun meal in 1999/00, at 7,577 metric tons. The Netherlands was a close second, followed by Mexico and Canada.

U.S. Sunflower Oil Exports October 99-September 00 (metric tons)				
Country	1996/97	1997/98	1998/99	1999/00
Algeria	52,932	87,508	26,960	32,593
Bahrain	0	509	2,524	1,069
Canada	11,469	13,610	18,733	24,038
Columbia	2,700	3,913	7,410	393
Egypt	71,250	47,838	14,333	21,829
El Salvador	3,500	2,811	5,213	2,561
Guatemala	7,651		9,673	15,301
India	19,246	4,999	20,997	0
Japan	2,370	2,453	4,598	6,620
Jordan	0	1,709	6,270	4
Kuwait	5,251	2,298	2,572	24
Mexico	120,434	157,237	151,536	169,577
Netherlands	7,989	6,699	1,763	2,700
Singapore	5,198	1,000	4,501	2
Taiwan	6,090	4,698	17,154	15,176
Turkey	0	2,000	9,198	0
Utd. Arab Em.	0	0	500	0
Other	5,482	20,610	53,232	7,334
Total MT	321,562	369,565	362,795	286,025

U.S. Sunflower Meal Exports October 99 - September 00 (metric tons)				
Country	1996/97	1997/98	1998/99	1999/00
Canada	299	84	811	1,956
Netherlands	0	21	0	7,282
Portugal	0	6,459	0	0
Mexico	2,942	2,375	11,076	3,922
Ireland	4,293	1,287	23,856	7,577
Un. Kingdom	7,189	2,600	5,382	0
Other	129	100	96	75
Total MT	14,852	12,926	41,221	20,812





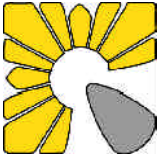
U.S. Supply/Disappearance

ITEM	95/96	96/97	97/98	98/99	99/00	00/01	Trad.	NuSun	Totals
	Oct-Sep				Revised Forecast				
<i>—In 1,000 Metric Tons, Unless Otherwise Specified—</i>									
CONFECTION SUNFLOWER									
Area Harvested (1,000 HA)	218	221	235	241	302	210	-	-	-
Area Harvested (1,000 AC)	539	545	580	595	746	520	-	-	-
Yield (MT/HA)	1.26	1.47	1.34	1.48	1.27	1.34	-	-	-
Yield (LB/AC)	1,125	1,313	1,192	1,322	1,131	1,194	-	-	-
Stocks, Oct 1	23	36	45	9	16	40	-	-	-
Production	275	325	314	357	383	282	-	-	-
Seed Import	<u>5</u>	<u>5</u>	<u>9</u>	<u>10</u>	<u>10</u>	<u>20</u>	-	-	-
TOTAL SUPPLY	303	366	368	376	409	342	-	-	-
Disappearance	267	321	359	360	385	315	-	-	-
Ending Stocks	36	45	9	16	24	27	-	-	-
OILSEED SUNFLOWER									
Area Harvested (1,000 HA)	1,145	783	895	1,172	1,091	854	606	247	854
Area Harvested (1,000 AC)	2,829	1,934	2,212	2,897	2,695	2,109	1,498	611	2,109
Yield (MT/HA)	1.35	1.65	1.51	1.74	1.46	1.58	1.58	1.58	-
Yield (LB/AC)	1,201	1,469	1,350	1,549	1,298	1,405	1,405	1,405	-
Stocks, Oct 1	85	158	74	13	110	94	89	5	94
Production	1,542	1,289	1,355	2,036	1,587	1,344	955	389	1,344
Seed Import	<u>15</u>	<u>20</u>	<u>20</u>	<u>26</u>	<u>20</u>	<u>15</u>	<u>15</u>	<u>0</u>	<u>15</u>
TOTAL SUPPLY	1,642	1,467	1,449	2,075	1,717	1,453	1,059	394	1,453
Oilseed Crushed	923	885	1,000	1,241	1,103	910	555	355	910
Planting Seed, Birdfood, Domestic Use	465	498	279	586	479	475	455	20	475
Exports	<u>96</u>	<u>10</u>	<u>157</u>	<u>138</u>	<u>41</u>	<u>15</u>	<u>15</u>	<u>0</u>	<u>15</u>
Disappearance	1,484	1,393	1,436	1,965	1,623	1,400	1,025	375	1,400
Ending Stocks	158	74	13	110	94	53	34	19	53
SUNFLOWER OIL									
Stocks, Oct 1	62	70	42	27	55	71	68	3	71
Oil Production	<u>388</u>	<u>372</u>	<u>420</u>	<u>521</u>	<u>452</u>	<u>382</u>	<u>233</u>	<u>149</u>	<u>382</u>
TOTAL SUPPLY	450	442	462	548	507	453	301	152	453
Domestic Oil Use	95	78	65	130	150	165	35	130	165
Oil Exports	<u>285</u>	<u>322</u>	<u>370</u>	<u>363</u>	<u>286</u>	<u>230</u>	<u>215</u>	<u>15</u>	<u>230</u>
Total Use	380	400	435	493	436	395	250	145	395
Ending Stocks	70	42	27	55	71	58	51	7	58
SUNFLOWER MEAL									
Stocks, Oct. 1	36	4	5	2	6	6	6	0	6
Production	<u>425</u>	<u>407</u>	<u>500</u>	<u>621</u>	<u>552</u>	<u>437</u>	<u>266</u>	<u>171</u>	<u>437</u>
TOTAL SUPPLY	461	411	505	622	558	443	272	171	443
Domestic Use	432	388	490	575	531	426	261	165	426
Exports	<u>25</u>	<u>18</u>	<u>13</u>	<u>41</u>	<u>21</u>	<u>15</u>	<u>10</u>	<u>5</u>	<u>15</u>
Total Use	457	406	503	616	552	441	271	170	441
Ending Stocks	4	5	2	6	6	2	1	1	2



World Supply/Disappearance

ITEM	1995/96	1996/97	1997/98	1998/99	1999/00 Revised	2000/01 Forecast
Area Harvested	21,030	19,901	19,776	22,536	22,922	20,364
Yield (MT/HEC)	1.24	1.24	1.21	1.22	1.17	1.18
SUNFLOWER SEED <i>(In 1,000 Metric Tons, Unless Specified)</i>						
PRODUCTION						
Argentina	5,560	5,450	5,680	7,130	5,700	3,700
Eastern Europe	2,840	2,921	2,179	2,594	3,029	1,926
European Union	3,310	3,873	4,078	3,438	3,138	3,330
China, Peoples Republic of	1,270	1,420	1,176	1,465	1,570	1,650
former USSR	7,300	5,369	5,412	5,737	7,356	7,755
United States	1,817	1,614	1,668	2,393	1,970	1,626
India	1,320	1,315	1,160	1,170	980	1,030
Turkey	800	670	672	850	800	580
Other	<u>1,120</u>	<u>1,993</u>	<u>1,866</u>	<u>2,827</u>	<u>2,211</u>	<u>2,528</u>
TOTAL	25,337	24,625	23,891	27,604	26,754	24,125
SEED IMPORTS						
Mexico	121	116	49	22	16	20
European Union	2,388	2,340	2,034	2,693	2,176	2,030
Other	<u>703</u>	<u>856</u>	<u>918</u>	<u>1,125</u>	<u>748</u>	<u>971</u>
TOTAL	3,212	3,312	3,001	3,840	2,940	3,021
OILSEED CRUSHED						
	22,988	22,601	21,466	23,206	23,542	22,414
SEED EXPORTS						
Argentina	585	65	504	940	252	68
United States	96	10	157	138	41	15
former USSR	1,745	2,395	1,717	1,836	1,385	2,100
Other	<u>787</u>	<u>817</u>	<u>617</u>	<u>946</u>	<u>1,220</u>	<u>858</u>
TOTAL	3,213	3,287	2,995	3,860	2,898	3,041
SUNFLOWER OIL						
OIL OPENING STOCKS	854	1,132	969	898	994	1,160
OIL PRODUCTION	9,251	9,146	8,588	9,318	9,605	9,145
OIL IMPORTS						
Algeria	238	219	209	261	242	245
Turkey	223	209	202	138	97	95
Egypt	238	316	279	241	182	165
Mexico	279	180	193	173	178	155
former USSR	171	276	372	229	82	55
Taiwan	18	28	24	27	29	24
Others	<u>481</u>	<u>1,975</u>	<u>1,795</u>	<u>1,971</u>	<u>1,955</u>	<u>1,851</u>
TOTAL	2,606	3,203	3,074	3,040	2,765	2,590
DISAPPEARANCE						
	9,046	9,318	8,702	9,220	9,418	9,467
OIL EXPORTS						
Argentina	1,446	1,745	1,664	1,868	1,485	1,420
European Union	172	437	276	230	182	156
Eastern Europe	295	373	357	284	240	154
United States	285	322	370	363	286	230
Others	<u>383</u>	<u>324</u>	<u>343</u>	<u>298</u>	<u>594</u>	<u>608</u>
TOTAL	2,581	3,201	3,010	3,043	2,787	2,568
ENDING STOCKS	1,126	961	919	994	1,160	860
SUNFLOWER MEAL						
MEAL PRODUCTION	10,977	10,860	10,244	11,051	11,027	10,578
MEAL IMPORT	2,532	2,588	2,662	2,833	2,572	2,497
DISAPPEARANCE	10,940	10,853	10,230	10,966	10,952	10,749
MEAL EXPORTS	2,558	2,551	2,649	2,884	2,549	2,479
ENDING STOCKS	163	207	234	269	366	213



Currently, No Biotech Sunflower Commercially Available in U.S.

Currently, no biotech sunflower is commercially available in the United States. Some commodity buyers are asking for proof of non-biotech crop origin, however, and thus for sunflower seed or oil exports, the NSA has begun providing members with a letter stating that U.S. sunflower is currently free of biotech 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-biotech. It was developed with standard hybrid breeding methods.

Biotech sunflower is being studied, however. For example, several leading private companies are collaborating on the development of a *Sclerotinia*-resistant gene. *Sclerotinia* is a disease that impacts many crops including sunflower. Field tests demonstrate that it indeed shows *Sclerotinia* tolerance. However, maximum levels of *Sclerotinia* resistance

will most likely be achieved by combining biotech resistance enhancement with natural tolerance achieved through plant breeding, experts say.

There are many studies, testing, and regulatory hurdles to overcome before any biotech crop can be commercialized. Among many factors that must be analyzed and reported, the research developer must indicate the source of the gene, submit data proving that it is non-toxic and doesn't cause allergies, and whether it will affect yield or other plant characteristics and attributes.

In the case of sunflower, it needs to be proven whether oil or meal composition would be affected. Environmental safety also needs to be proven, and since sunflower is open-pollinated and can cross pollinate with wild sunflower and related species, that puts an extra regulatory burden on sunflower.

If and when a biotech sunflower hybrid becomes commercially available, the NSA will work with the sunflower industry to ensure differentiation, and that buyers domestically and overseas continue to receive the type and quality of sunflower that they want.





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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