

# 2001

## U.S. Sunflower Crop Quality Report





## Table of Contents

About the 2001 Report .....	2
2001 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 2001 Sunflower Crop Quality Report



**T**he 2001 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 2001 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 web site, [www.sunflowernsa.com](http://www.sunflowernsa.com). Printed copies of this report can be made available by the NSA (See NSA contact information page 11).



# U.S. Sunflower Acreage, Production 2001

**W**ith the exception of a late October snowstorm in the Dakotas, a warm, dry fall enabled most producers to harvest sunflower in good condition. Quality on the latter half of the crop appears to have increased in test weight, oil content and yield in most producing states. A wide test weight and oil content variance within regions is considerable and unusual from past years. Oil type test weights vary from a low 23% to a high of 35.5% while oil contents vary from a low of 30% to a high of 49%.

Reports indicated that oil sunflower test weights and oil contents improved as the harvest moved north and east. NuSun oleic levels averaged between 58-62%. Confection reports indicated that seed size was smaller than average, but color is excellent and the good harvest conditions for the majority of the harvest produced better-looking seed with no scuffing. There was very little Sclerotinia, but more insect damage was noticed, especially where an aggressive spraying program was not used.

The 2001 sunflower production totaled 3.48 billion pounds, 2% below the 2000 production, according to

USDA. The estimated yield per acre, at 1,349 pounds, increased 10 pounds from 2000. Planted area, at 2.65 million acres, was down 7% from 2000. Harvested acres, at 2.58 million, decreased 3% from 2000.

Production for oil type sunflower varieties, at 2.87 billion pounds, decreased 1% from 2000. Acreage harvested for oil type varieties decreased 1% from last year while yield was down 2 pounds.

For non-oil (confection) sunflower varieties, production in 2001 was 614 million pounds, a decrease of 3%. Acreage harvested for non-oil varieties decreased 7% from 2000. However, the average yield per acre, at 1,246 pounds, increased 51 pounds from 2000.

U.S. Sunflower Production (1,000 pounds)			
	1999	2000	2001
Oil	3,497,820	2,909,844	2,866,321
Non-Oil	844,042	634,584	614,375
<b>Total</b>	<b>4,341,862</b>	<b>3,544,428</b>	<b>3,480,696</b>

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

State	1995	1996	1997	1998	1999	2000	2001
Colorado	25.0	17.8	19.0	43.3	69.6	43.0	48.6
Kansas	87.0	93.1	66.8	62.7	97.1	75.8	117.4
Minnesota	144.0	39.3	29.1	35.2	31.2	19.6	11.3
Nebraska	17.0	8.9	9.7	15.4	19.0	20.0	20.2
North Dakota	490.0	360.2	445.2	639.4	493.7	401.8	348.0
South Dakota	353.0	256.2	301.5	358.2	348.8	278.8	267.5
Texas	7.0	3.2	8.9	4.5	9.7	5.3	13.4
Other	22.0	12.3	15.0	13.8	21.5	20.0	18.2
<b>Total U.S.</b>	<b>1,145.0</b>	<b>791.0</b>	<b>895.2</b>	<b>1,172.5</b>	<b>1,090.6</b>	<b>864.7</b>	<b>844.6</b>

Source: USDA



# NuSun™ Industry Inroads Continue; Nutrition Research Promising

**N**uSun™ oil continues to make inroads among industry oil users, both domestically and internationally.

July, 2001, marked the first anniversary of Procter and Gamble's announcement that they would use NuSun sunflower oil in production of Pringles at the company's Jackson, Tenn., plant. More Pringles are sold worldwide than any other potato snack brand. John Cary, wet materials technology leader at the Jackson plant, reported at the NSA's annual summer meeting that NuSun continues to offer desired performance in shelf life, total polar compounds, oleic content, impact on process reliability, and overall stability, while offering the clean flavor attributes and a lower saturated fat content compared to other oils.

NuSun is also finding a foreign following. NuSun exports began only in the last year, and three countries currently import a small amount of the mid-oleic oil: Taiwan, Mexico, and United Arab Emirates. NuSun is sold in the consumer market as bottled cooking oil in all three countries, and some in the Mexican baking industry are using NuSun to coat pans before baking. Bimbo, one of Mexico's largest baking companies, has replaced cottonseed oil with NuSun in its operations.

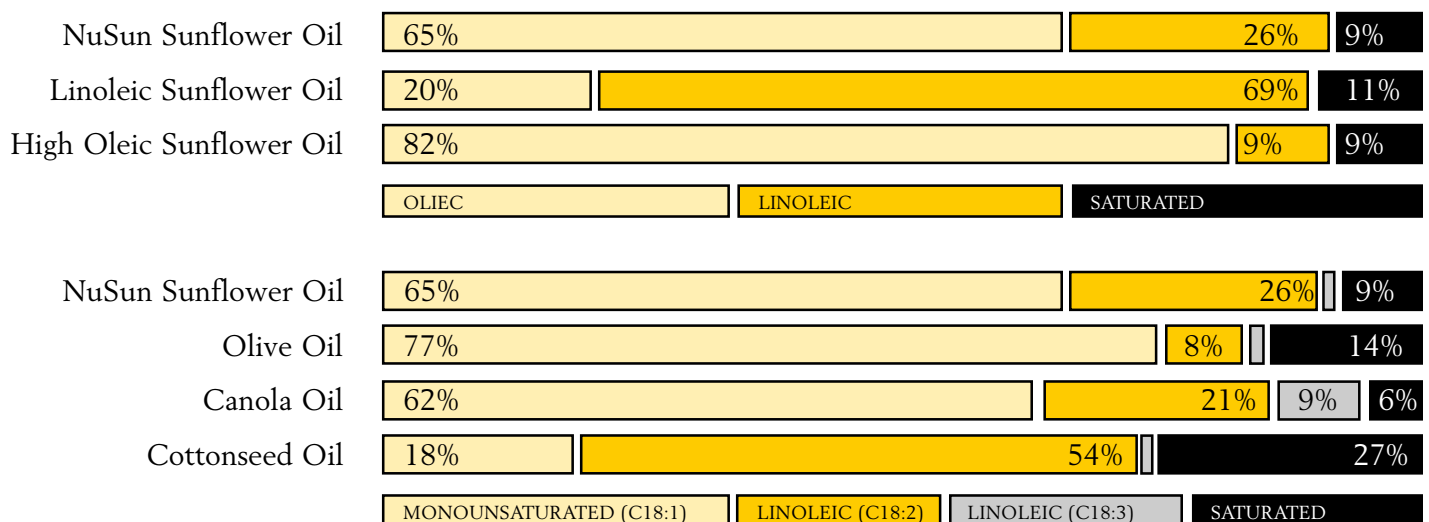
Importers like NuSun in part because it does not require hydrogenation for most food preparation

uses, and it has attractive potential with consumers as a "new and improved" sunflower oil product, low in saturated fat with a fatty acid profile similar to olive oil without the stronger taste, according to John Sandbakken, international marketing director of the National Sunflower Association. It's a premium oil that's viewed by consumers as a healthier oil with more value, he says, and the fact that NuSun is non-biotech, developed with standard hybrid breeding methods, is also appealing with some foreign buyers.

Nutrition research may further boost NuSun's attractiveness in the marketplace. According to Dr. Robert Nicolosi and T. Wilson of the University of Massachusetts-Lowell, who have conducted the first nutritional research with mid-oleic (NuSun) sunflower oil using animals, NuSun sunflower oil compared with olive oil-fed animals in lowering levels of LDL cholesterol without significantly reducing HDL cholesterol and oxidative stress.

Penn State University began a human study on NuSun in 2001. The study, under the direction of Dr. Penny Kris-Etherton, will evaluate the effect of a diet higher in NuSun sunflower oil on plasma lipids and lipoproteins of 32 human subjects. The diet will be compared with an olive oil-enriched diet and the "average" American diet. The study should be completed by September, 2002.

## Fatty Acid Composition





# 2001 Seed Quality/Confection Kernel Specifications

Seed quality and kernel specifications of the 2001 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 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.

Non-Oil Sunflower Seed Quality				
Year	Test Weight	Moisture	Foreign Matter	Over 20/64 Size
2001	27.5	10.4	7.8	55.7
2000	24.8	10.8	8.1	65.9
1999	24.4	10.3	8.1	66.1
1998	25.6	10.8	5.6	62.8

Oil-Type Sunflower Seed Quality				
Year	Test Weight*	Moisture	Foreign Matter	Oil%**
2001	30.7	9.6	5.1	42.3
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

\*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.

Oil-type sunflower seed analysis indicated an average oil percentage of 42.3%, lower than the 2000 average of 43% and similar to the 42.2% average in 1999. Test weight was 30.7 pounds per bushel, slightly higher than the 30.2 lbs/bu average of 2000. Foreign material at 5.1% was lower than the 2000 average of 5.9%. Moisture at 9.6% was similar to 2000 at 9.5%.

The percentage of confection seed over 20/64 in size was 55.7%, the lowest in the four years that confection seed samples have been analyzed. Foreign material in samples, however, was lowest since 1998, and test weight was the highest since sample analysis began in 1998 (see chart).

## 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)



# 2001 Fatty Acid Analysis/Oil Traits, Rules

The tables below compare the fatty acid content of representative samples of sunflower seed oil, gathered from the 2001 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 61.15% oleic average of NuSun samples was higher than the 59.08% average in 2000, and well above the 54.79% average of 1999 oil samples.

The 2001 linoleic acid content of 64.65% is below that of the 65.76% average of the 2000 crop samples. The 24.19% oleic level average of the 2001 sunflower oil samples is higher than the 22.01% average of the 2000 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 2001 samples.

High oleic sunflower is estimated to currently

account for under 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
2001	5.68	4.21	24.19	64.65	0.180
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

### Sunflower Oil Quality NuSun Percent

Year	Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3
2001	4.36	4.03	61.15	28.55	0.11
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

**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 sunflower oil.

NuSun™ is a mid-range oleic, 55%-75% (monounsaturated) 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.

U.S. Sunflower Oil Exports				
October 00-September 01 (metric tons)				
Country	1997/98	1998/99	1999/00	2000/01
Algeria	87,508	26,960	32,593	62,701
Bahrain	509	2,524	1,069	24
Canada	13,610	18,733	24,038	22,990
Columbia	3,913	7,410	393	1,058
Egypt	47,838	14,333	21,829	5,924
El Salvador	2,811	5,213	2,561	295
Guatemala	9,673	15,301	2,105	4,428
India	4,999	20,997	0	0
Japan	2,453	4,598	6,620	5,769
Jordan	1,709	6,270	4	3,797
Kuwait	2,298	2,572	24	616
Mexico	157,237	151,536	169,577	43,086
Netherlands	6,699	1,763	2,700	57,547
Singapore	1,000	4,501	2	1,054
Taiwan	4,698	17,154	15,176	9,920
Turkey	2,000	9,198	0	12,575
Utd. Arab Em.	0	500	0	6,513
Other	20,610	53,232	7,334	13,125
<b>Total MT</b>	<b>369,565</b>	<b>362,795</b>	<b>286,025</b>	<b>251,422</b>

U.S. Sunflower Meal Exports				
October 00 - September 01 (metric tons)				
Country	1997/98	1998/99	1999/00	2000/01
Canada	84	811	1,956	1,423
Netherlands	21	0	7,282	0
Portugal	6,459	0	0	0
Mexico	2,375	11,076	3,922	2,731
Ireland	1,287	23,856	7,577	3,862
Un. Kingdom	2,600	5,382	0	0
Other	100	96	75	92
<b>Total MT</b>	<b>12,926</b>	<b>41,221</b>	<b>20,812</b>	<b>8,108</b>





# U.S. Supply/Disappearance

ITEM	96/97	97/98	98/99	99/00	00/01	01/02	Trad.	NuSun	Totals
	Oct-Sep	Revised Forecast							
<i>—In 1,000 Metric Tons, Unless Otherwise Specified—</i>									
<b>CONFECTION SUNFLOWER</b>									
Area Harvested (1,000 HA)	221	235	241	302	215	200	-	-	-
Area Harvested (1,000 AC)	545	580	595	746	531	493	-	-	-
Yield (MT\HA)	1.47	1.34	1.48	1.27	1.34	1.40	-	-	-
Yield (LB\AC)	1,313	1,192	1,322	1,131	1,195	1,246	-	-	-
Stocks, Oct 1	36	45	9	16	27	22	-	-	-
Production	325	314	357	383	288	279	-	-	-
Seed Import	<u>5</u>	<u>9</u>	<u>10</u>	<u>18</u>	<u>20</u>	<u>20</u>	-	-	-
TOTAL SUPPLY	366	368	376	417	335	321	-	-	-
Disappearance	321	359	360	390	313	300	-	-	-
Ending Stocks	45	9	16	27	22	21	-	-	-
<b>OILSEED SUNFLOWER</b>									
Area Harvested (1,000 HA)	783	895	1,172	1,091	856	845	524	321	845
Area Harvested (1,000 AC)	1,934	2,212	2,897	2,695	2,116	2,087	1,294	793	2,087
Yield (MT\HA)	1.65	1.51	1.74	1.46	1.54	1.54	1.54	1.54	-
Yield (LB\AC)	1,469	1,350	1,549	1,298	1,375	1,373	1,373	1,373	-
Stocks, Oct 1	158	74	13	110	94	40	28	12	40
Production	1,289	1,355	2,036	1,587	1,320	1,300	806	494	1,300
Seed Import	<u>20</u>	<u>20</u>	<u>26</u>	<u>31</u>	<u>48</u>	<u>45</u>	<u>45</u>	<u>0</u>	<u>45</u>
TOTAL SUPPLY	1,467	1,449	2,075	1,728	1,462	1,385	879	506	1,385
Oilseed Crushed	885	1,000	1,241	1,103	922	830	515	315	830
Planting Seed, Birdfood, Domestic Use	498	279	586	490	472	511	322	189	511
Exports	<u>10</u>	<u>157</u>	<u>138</u>	<u>41</u>	<u>28</u>	<u>29</u>	<u>29</u>	<u>0</u>	<u>29</u>
Disappearance	1,393	1,436	1,965	1,624	1,422	1,370	866	504	1,370
Ending Stocks	74	13	110	94	40	15	13	2	15
<b>SUNFLOWER OIL</b>									
Stocks, Oct 1	70	42	27	55	71	62	59	3	62
Oil Production	<u>372</u>	<u>420</u>	<u>521</u>	<u>452</u>	<u>387</u>	<u>345</u>	<u>214</u>	<u>131</u>	<u>345</u>
TOTAL SUPPLY	442	462	548	507	458	407	273	134	407
Domestic Oil Use	78	65	130	150	145	130	35	95	130
Oil Exports	<u>322</u>	<u>370</u>	<u>363</u>	<u>286</u>	<u>251</u>	<u>245</u>	<u>210</u>	<u>35</u>	<u>245</u>
Total Use	400	435	493	436	396	375	245	130	375
Ending Stocks	42	27	55	71	62	32	28	4	32
<b>SUNFLOWER MEAL</b>									
Stocks, Oct. 1	4	5	2	7	4	8	5	3	8
Production	<u>407</u>	<u>500</u>	<u>621</u>	<u>552</u>	<u>443</u>	<u>398</u>	<u>247</u>	<u>151</u>	<u>398</u>
TOTAL SUPPLY	411	505	623	558	447	406	252	154	406
Domestic Use	388	490	575	533	431	388	241	147	388
Exports	<u>18</u>	<u>13</u>	<u>41</u>	<u>21</u>	<u>8</u>	<u>10</u>	<u>6</u>	<u>4</u>	<u>10</u>
Total Use	406	503	616	554	439	398	247	151	398
Ending Stocks	5	2	7	4	8	8	5	3	8





# World Supply/Disappearance

ITEM	1996/97	1997/98	1998/99	1999/00	2000/01 Revised	2001/02 Forecast
Area Harvested	19,901	19,776	22,536	22,858	19,697	18,448
Yield (MT/HEC)	1.24	1.21	1.22	1.18	1.17	1.14
<b>SUNFLOWER SEED</b> <i>—(In 1,000 Metric Tons, Unless Specified)—</i>						
<b>PRODUCTION</b>						
Argentina	5,450	5,680	7,130	5,800	2,940	3,100
Eastern Europe	2,921	2,179	2,594	2,754	1,674	1,960
European Union	3,873	4,078	3,438	3,105	3,271	3,000
China, Peoples Republic of	1,420	1,176	1,465	1,765	1,950	2,000
former USSR	5,369	5,412	5,737	6,890	7,266	4,920
United States	1,614	1,668	2,393	1,970	1,608	1,579
India	1,315	1,160	1,170	870	810	830
Turkey	670	672	850	820	630	530
Other	<u>1,993</u>	<u>1,866</u>	<u>2,827</u>	<u>2,983</u>	<u>3,011</u>	<u>2,801</u>
TOTAL	24,625	23,891	27,604	26,957	23,160	20,720
<b>SEED IMPORTS</b>						
Mexico	121	116	49	15	23	14
European Union	2,388	2,340	2,034	2,231	2,000	960
Other	<u>703</u>	<u>856</u>	<u>918</u>	<u>871</u>	<u>688</u>	<u>506</u>
TOTAL	3,212	3,312	3,001	3,117	2,711	1,480
<b>OILSEED CRUSHED</b>						
	22,988	22,601	21,466	23,366	21,397	19,090
<b>SEED EXPORTS</b>						
Argentina	585	65	504	265	90	360
United States	96	10	157	168	153	190
former USSR	1,745	2,395	1,717	1,239	1,712	220
Other	<u>787</u>	<u>817</u>	<u>617</u>	<u>1,372</u>	<u>755</u>	<u>720</u>
TOTAL	3,213	3,287	2,995	3,044	2,710	1,490
<b>SUNFLOWER OIL</b>						
OIL OPENING STOCKS	854	1,132	969	974	1,190	900
OIL PRODUCTION	9,251	9,146	8,588	9,550	8,760	7,510
<b>OIL IMPORTS</b>						
Algeria	238	219	209	233	239	160
Turkey	223	209	202	99	140	148
Egypt	238	316	279	187	122	80
Mexico	279	180	193	173	73	65
former USSR	171	276	372	228	235	160
Taiwan	18	28	27	32	29	30
Others	<u>1,481</u>	<u>1,975</u>	<u>1,792</u>	<u>1,988</u>	<u>1,622</u>	<u>1,237</u>
TOTAL	2,606	3,203	3,074	2,940	2,460	1,880
<b>DISAPPEARANCE</b>						
	9,046	9,318	8,702	9,322	9,050	7,780
<b>OIL EXPORTS</b>						
Argentina	1,446	1,745	1,664	1,484	1,092	785
European Union	172	437	276	178	165	60
Eastern Europe	295	373	357	172	75	68
United States	322	370	363	286	251	245
Others	<u>346</u>	<u>276</u>	<u>350</u>	<u>817</u>	<u>872</u>	<u>732</u>
TOTAL	2,581	3,201	3,010	2,937	2,455	1,890
<b>ENDING STOCKS</b>						
	1,126	961	919	1,161	923	665
<b>SUNFLOWER MEAL</b>						
MEAL PRODUCTION	10,977	10,860	10,244	10,976	10,085	8,813
MEAL IMPORT	2,532	2,588	2,662	2,995	2,623	2,218
DISAPPEARANCE	10,940	10,853	10,230	10,937	10,189	8,880
MEAL EXPORTS	2,558	2,551	2,649	3,010	2,531	2,227
ENDING STOCKS	163	207	234	247	235	159

Source: Oil World & USDA



## NuSun™ Developed With Standard Hybrid Methods

Currently, no biotech sunflower is commercially available in the United States. Some commodity buyers request proof of non-biotech crop origin, however, and thus for sunflower seed or oil exports, the NSA is 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

**T**he 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.

## CONTACTS:

### **National Sunflower Association**

John Sandbakken, Marketing Director

Email: [johns@sunflowernsa.com](mailto:johns@sunflowernsa.com)

4023 State Street

Bismarck, ND 58503-0620

Ph: (701) 328-5100

Fax: (701) 328-5101

Web site: [www.sunflowernsa.com](http://www.sunflowernsa.com)

### **NSA Representative in Mexico**

Jose Luis Escamilla

Email: [escgrain@avantel.net](mailto:escgrain@avantel.net)

Jose Ma Rico 212-Desp. 702

Col Del Valle

Mexico, D.F. 03100, Mexico

Ph. (5255) 524-8273; or 524-8192

Fax: (5255) 534-8997

## ACKNOWLEDGEMENTS:

The NSA gratefully acknowledges the contributions of the Foreign Agricultural Service, U.S. Department of Agriculture, (Web Site: <http://www.fas.usda.gov>) in the preparation of this electronic publication.

2001 U.S. Sunflower Crop Quality Report edited by John Sandbakken and Tracy Sayler, with design by Kris Versdahl and photos by Don Lilliboe, unless otherwise noted.



**NATIONAL  
SUNFLOWER  
ASSOCIATION**

4023 State Street • Bismarck, ND 58503-0620

Ph: (701) 328-5100 • Fax: (701) 328-5101

Web site: [www.sunflowernsa.com](http://www.sunflowernsa.com)

