~ 2009 ~
U.S. Sunflower Crop Quality Report

National Sunflower Association

Regarding the 2009 Sunflower Crop Quality Report . . .

The 2009 U.S. Sunflower Crop Quality Report, compiled by the National Sunflower Association in cooperation with the Foreign Agricul-tural Service, U.S. Department of Agriculture, provides an overview on the size and quality of the 2009 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).

Table of Contents

National Sunflower Association

2009 U.S. Sunflower Acreage & Production

United States sunflower production totaled 3.04 billion pounds in 2009, down more than 11% from 2008 but up by about 6% from the 2007 crop size.

At 1,554 pounds per acre, the 2009 U.S. average sunflower yield was up significantly from 2007's 1,429 pounds. However, a lower harvested acreage total in 2009 — 1.95 million versus 2.4 million in 2008 — contributed to the overall decrease in seed production.

Production in North Dakota, the nation's leading sunflower state, was estimated at 1.32 billion pounds in 2009, down from 1.51 billion in 2008. The only state to register higher production in 2009 compared to the prior year was Texas, where 2009's 129,800,000-pound output was up by 40 percent from the previous year. Average yields were strong in most other states, but their overall production was down due to a lower harvested acreage level.

Production of oil-type sunflower seed, at 2.58 billion pounds, was down nearly 14% from 2008's 2.99 billion pounds. Harvested acreage of the oil types was 1.65 million in 2009 — down from 2.07 million the prior year. Oil-type seed yields averaged 1,563 pounds, up 111 pounds from 2007.

In the nonoil area, overall production was estimated by USDA at 452.5 million pounds in 2009, up more than 5% from 2008's 429.3 million pounds. Average yield of nonoil sunflower in 2009 was 1,506 pounds per acre, up an impressive 17% from the previous year's 1,285 pounds.

The 2009 growing season begam wet and slow, with rains widespread across the entire sunflower production region during latter May and early June. Also, spring temperatures in the northern states were below average.

Temperatures warmed up in June and early July, with good soil moisture the norm. Overall heat units in the northern states continued to lag, however. Parts of the High Plains received abnormally high precipitation, delaying the planting of second-crop sunflower.

As of mid-August, crop maturity was becoming a concern in northern states, as lower-than-normal temperatures slowed plant development. Above-normal temperatures later in August and into the month of September improved prospects, however.

A wet October slowed harvest in many locales. Continued rains — and sometimes snow — hindered progress well into November, but most U.S. sunflower fields were harvested by month's end.

U.S. Sunflower Production

(1,000s of Pounds)

	2006	2007	2008	2009
Oil	1,787,966	2,483,585	2,993,510	2,584,010
Nonoil	355,647	385,285	429,330	452,450
Total	**2,143,613**	**2,868,870**	**3,422,840**	**3,036,460**

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

(1,000s of Hectares)

State	2002	2003	2004	2005	2006	2007	2008	2009
Colorado	24.3	34.4	32.4	58.7	30.4	40.5	57.9	27.9
Kansas	62.7	62.7	56.7	99.2	52.6	58.7	83.0	56.7
Minnesota	15.0	21.9	11.3	29.1	21.4	35.6	29.5	17.8
Nebraska	13.8	19.4	14.2	23.5	12.5	13.4	17.4	10.5
North Dakota	447.2	412.8	267.1	358.2	299.5	362.2	376.4	307.6
South Dakota	151.8	174.0	159.4	194.7	165.9	157.4	220.6	206.4
Texas	3.6	6.5	6.5	19.4	5.3	5.9	21.9	23.9
Other	16.2	26.7	28.7	39.5	25.1	22.1	27.9	18.6
Total	**734.6**	**758.4**	**576.3**	**822.3**	**612.7**	**695.8**	**834.6**	**669.0**

2009 Seed Quality/Confection Kernel Specifications

Seed quality and kernel specifications of the 2009 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 & 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 42.6%, down 1.0% from the 2008 average of 43.6%. Test weight was 29.8 pounds per bushel, 1.6 pounds below the 2008 test weight average of 31.4 pounds. Foreign material, at 4.3%, was identical to that of 2008. Moisture, at 9.8%, was 0.3% below that of the 2008 crop.

The percentage of confection seed over 20/64 in size was 80.7% in 2009. That's considerably higher than the preceding four years, during which it averaged 71.6%. Foreign material in 2009 samples averaged 9.0%. That's 0.8% higher than in 2008. At 22.7%, test weight was 0.6% lower than 2008's 23.3%, while average moisture at 10.4%, was very close to 2008's average of 10.5%.

Oil-Type Sunflower Seed Quality

Year	Test Weight (Lbs/Bu)	Moisture (%)	Foreign Material (%)	Oil (%)
2009	29.8	9.8	4.3	42.6
2008	31.4	10.1	4.3	43.6
2007	30.9	9.1	5.5	43.1
2006	31.9	9.2	4.9	43.4
2005	31.3	9.7	4.4	42.7

Nonoil Sunflower Seed Quality

Year	Test Weight (Lbs/Bu)	Moisture (%)	Foreign Material (%)	Seeds Over 20/64 Size (%)
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
2006	26.3	10.5	6.4	70.7
2005	25.1	10.9	7.9	70.9

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.

2009 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 2009 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 62.34% oleic average of the 2009 NuSun® (mid-oleic) samples was higher than 2008's 61.88% average (which in turn was slightly above 2007's 61.73%).

The 2009 high-oleic seed samples averaged an oleic acid content of 85.71%. That's nearly a percentage point above the 84.75% average of the 2008 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 high-oleic samples collected at harvest.

See general trading rules for mid-oleic and high-oleic 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.,

Sunflower Oil Quality / High Oleic

Percent

Year	Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3
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
2006	3.60	3.03	82.39	8.83	0.16
2005	3.23	3.20	84.65	6.67	0.37

Sunflower Oil Quality / NuSun®

Percent

Year	Palmitic 16:0	Stearic 18:0	Oleic 18:1	Linoleic 18:2	Linolenic 18:3
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
2006	4.24	3.66	60.66	28.98	0.27
2005	4.36	3.51	59.44	31.04	0.44

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 & 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 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®): 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
Iodine 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 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)

2009 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.

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% (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 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** sunflower 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 Oil Exports

(October-September)

Country	2005/06	2006/07	2007/08	2008/09
Belgium	6,001	9,524	2,304	6
Canada	47,905	50,541	60,099	77,071
Chile	188	1,145	1,176	79
Guatemala	272	0	4	7
Japan	2,372	4,812	4,584	8,118
Lebanon	13	0	0	0
Mexico	26,154	3,547	3,587	2,458
Netherlands	5,658	15	0	0
Singapore	4,162	5,906	4,205	1,990
South Korea	81	172	30	4
Taiwan	267	201	157	195
Other	2,413	1,180	539	912
Total MT	**95,486**	**77,043**	**76,685**	**90,840**

U.S. Sunflower Meal Exports

(October-September)

Country	2005/06	2006/07	2007/08	2008/09
Canada	1,669	4,032	2,348	2,400
Mexico	4,363	6,526	10,011	4,662
Ireland	0	0	4,108	0
U.K.	0	2,707	0	0
Other	21	81	171	73
Total MT	**6,053**	**13,346**	**16,638**	**7,135**

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

Item	2004/05 Oct.-Sept.	2005/06	2006/07	2007/08	2008/09 Revised	2009/10 Forecast
NONOIL SUNFLOWER						
Area Harvested (1,000 HA)	116	234	104	118	135	122
Area Harvested (1,000 AC)	287	578	256	293	334	301
Yield (MT/HA)	1.12	1.63	1.56	1.47	1.44	1.69
Yield (LB/AC)	997	1,455	1,389	1,315	1,285	1,506
Stocks, Oct. 1	11	12	120	43	17	21
Production	130	382	161	175	195	205
Seed Import	34	29	86	68	54	45
TOTAL SUPPLY	**175**	**422**	**368**	**285**	**266**	**271**
Disappearance	163	302	325	268	245	255
Ending Stocks	12	120	43	17	21	16
OIL SUNFLOWER						
Area Harvested (1,000 HA)	576	822	613	696	834	669
Area Harvested (1,000 AC)	1,424	2,032	1,514	1,719	2,062	1,653
Yield (MT/HA)	1.39	1.75	1.32	1.62	1.63	1.75
Yield (LB/AC)	1,238	1,564	1,181	1,445	1,452	1,563
Stocks, Oct. 1	107	55	349	20	28	278
Production	800	1,442	811	1,127	1,358	1,172
Seed Import	10	13	27	19	16	10
TOTAL SUPPLY	**917**	**1,510**	**1,188**	**1,166**	**1,403**	**1,460**
Oilseed Crushed	276	597	648	682	627	725
Planting Seed, Birdfood, Domestic Use	586	563	519	456	428	525
Exports	0	0	0	0	0	0
Disappearance	862	1,160	1,167	1,138	1,125	1,250
Ending Stocks	55	350	21	28	278	210
SUNFLOWER OIL						
Stocks, Oct. 1	12	10	26	27	12	50
Oil Imports	34	26	71	47	30	30
Oil Production	116	248	259	273	289	301
TOTAL SUPPLY	**162**	**284**	**356**	**347**	**331**	**381**
Domestic Oil Use	94	163	252	258	190	250
Oil Exports	58	95	77	77	91	105
Total Use	152	258	329	335	281	355
Ending Stocks	10	26	27	12	50	26
SUNFLOWER MEAL						
Stocks, Oct. 1	3	4	3	4	3	4
Production	132	287	311	327	355	370
TOTAL SUPPLY	**136**	**290**	**314**	**331**	**359**	**374**
Domestic Use	129	281	297	311	348	357
Exports	3	6	13	17	7	14
Total Use	132	287	310	328	355	371
Ending Stocks	4	3	4	3	4	3

Table Data: NSA Assumptions

World Sunflower Supply & Disappearance

Item	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
					Revised	*Forecast*
Area Harvested (1,000 HA)	**21,254**	**22,944**	**24,094**	**23,397**	**24,570**	**23,576**
Yield (MT/HA)	**1.23**	**1.32**	**1.25**	**1.25**	**1.35**	**1.31**
SUNFLOWER SEED						
Production						
Argentina	3,730	3,840	3,120	4,600	3,130	2,400
Other Europe	2,250	682	385	295	454	360
European Union	4,069	5,717	6,407	4,944	6,848	6,660
China, Peoples Republic of	1,700	1,830	1,850	1,800	1,850	1,850
Russia/Ukraine	8,001	11,390	11,900	10,380	14,320	12,650
United States	930	1,720	997	1,309	1,553	1,377
India	1,300	1,490	1,450	1,460	1,150	1,030
Turkey	640	780	820	670	850	790
Other	3,555	2,852	3,163	3,801	4,396	3,771
TOTAL	26,175	30,301	30,092	**29,259**	34,551	30,888
Seed Import						
Turkey	518	391	495	529	512	390
European Union	481	686	653	353	622	400
Other	300	437	792	430	1,056	771
TOTAL	1,299	1,514	1,940	1,312	2,190	1,561
Oilseed Crushed	**23,303**	**26,570**	**27,517**	**25,284**	**31,069**	**28,290**
Seed Exports						
Argentina	99	45	63	41	64	34
United States	117	155	181	202	180	180
Russia/Ukraine	73	595	505	107	963	331
Other	902	755	1,166	975	1,123	942
TOTAL	1,191	1,550	1,915	1,325	2,330	1,487
SUNFLOWER OIL						
Oil Opening Stocks	**793**	**832**	**1,075**	**981**	**896**	**1,376**
Oil Production	**9,417**	**10,993**	**11,231**	**10,170**	**12,849**	**11,572**
Oil Imports						
Algeria	126	75	139	55	114	80
Turkey	157	456	132	334	427	405
Egypt	208	254	303	195	418	310
Mexico	54	91	82	29	24	22
Russia	136	101	124	131	47	90
Taiwan	21	24	25	7	13	15
Others	2,145	3,289	3,618	2,952	4,171	3,374
TOTAL	2,847	4,290	4,423	3,703	5,214	4,296
Disappearance	**9,432**	**10,701**	**11,413**	**10,234**	**12,339**	**11,961**
Oil Exports						
Argentina	1,230	1,306	1,080	1,188	1,082	725
European Union	231	177	153	106	133	136
Russia/Ukraine	882	2,212	2,526	1,679	3,021	2,550
United States	58	95	77	77	91	105
Other	392	564	538	674	916	768
TOTAL	2,793	4,354	4,374	3,724	5,243	4,284
Ending Stocks	**832**	**1,061**	**943**	**896**	**1,376**	**998**
SUNFLOWER MEAL						
Meal Production	10,745	12,221	12,668	11,587	14,259	13,065
Meal Imports	2,900	3,591	3,687	3,262	4,690	3,770
Disappearance	10,699	12,025	12,621	11,559	14,257	13,174
Meal Exports	2,869	3,720	3,708	3,267	4,735	3,745
Ending Stocks	**156**	**223**	**281**	**308**	**265**	**180**

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 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 abroad, 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.

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

Contact:

National Sunflower Association
John Sandbakken, Marketing Director
Email: johns@sunflowernsa.com

2401 46th Ave. S.E. Suite 206
Mandan, ND 58554
Phone: (701) 328-5100
Fax: (701) 663-8652
Web Site: www.sunflowernsa.com

Acknowledgements:

The NSA gratefully acknowledges the contributions of the Foreign Agricultural Service, U.S. Department of Agriculture, (www.fas.usda.gov) in the preparation of this electronic publication.

2009 U.S. Sunflower Crop Quality Report data were coordinated by John Sandbakken, National Sunflower Association.

U.S. Sunflower Information Online

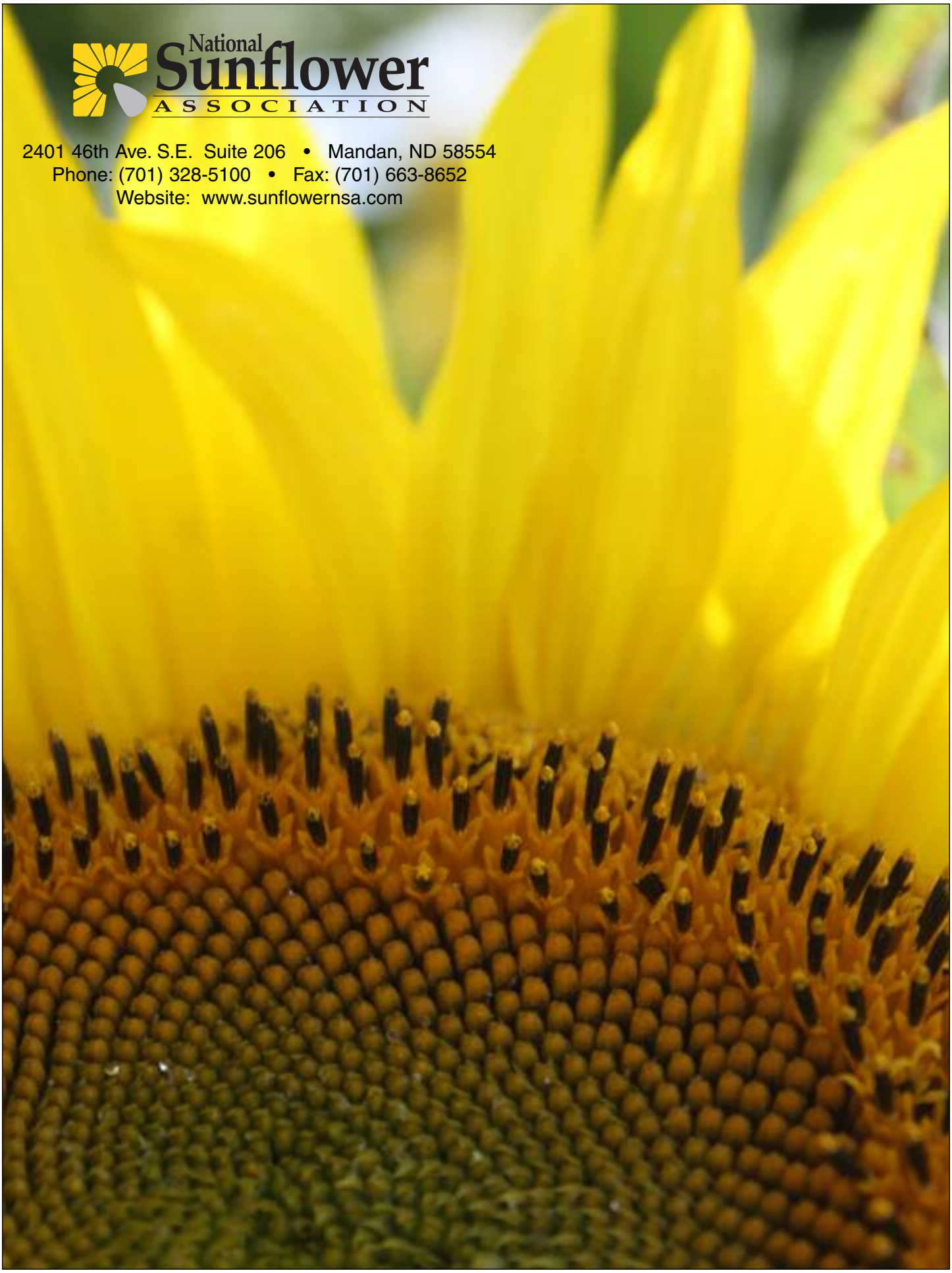
The National Sunflower Association has a wealth of U.S. sunflower information online at www.sunflowernsa.com.

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.



National Sunflower Association

2401 46th Ave. S.E. Suite 206 • Mandan, ND 58554
Phone: (701) 328-5100 • Fax: (701) 663-8652
Website: www.sunflowernsa.com