

Sunflower Seed Source Options

The following is a list of contacts at national seed companies for Missouri producers looking for sunflower seed. As a general rule, contact your local seed dealer first - they should be able to order sunflower seed for you. However, if you have specific variety questions, or don't know who to contact locally, see the national contacts listed here.

AGRIPRO SEEDS, INC.

Box 250
 Brookings, SD 57006
 Contact: Tom Lombard
 tom.lombard@agripro.com
 Tel: 605-692-6258
 Fax: 605-692-4817
 www.agripro.com

AGWAY, INC.

Box 169
 Grandin, ND 58038
 Contact: Chris Bohn
 chbohn@corpcomm.net
 Tel: 701-484-5313
 Fax: 701-484-5657
 www.sunflower.agway.com

BELTRAMI FARMERS ELEVATOR

PO Box 8
 Beltrami, MN 56517
 Contact: Thomas Nelson
 Tel: 218-926-5522
 Fax: 218-926-5520

CARGILL HYBRID SEEDS

Box 5645
 Minneapolis, MN 55440
 Contact: Kevin Hannigan
 kevin_hannigan@cargill.com
 Tel: 612-984-8053
 Fax: 612-984-8209

CASTERLINE SEEDS

Box 1377
 Dodge City, KS 67801
 Contact: Carl Casterline
 Tel: 316-225-4137
 Fax: 316-225-4162

CENEX LAND O'LAKES SEED

Box 1291
 Minot, ND 58702
 Contact: Elvin Kabanuk
 ekaba@cnxlol.com
 Tel: 800-676-6687
 Fax: 701-852-3036

CROPLAN GENETICS

Box 489
 Mentor, MN 56736
 Contact: John Swanson
 johnswan@means.net
 Tel: 800-676-6687
 Fax: 218-574-2623
 www.croplangenetics.com

EUREKA SEEDS, INC.

Box 1866
 Woodland, CA 95776
 Contact: Ken Scarlett
 eureka@aol.com
 Tel: 530-661-6995
 Fax: 530-662-9125

GENETIC RESOURCES, INC.

1606 Co. Rd. 600N
 Philo, IL 61864-0229
 Contact: Charles Lay
 gri@net66.com
 Tel: 217.684.2783
 Fax: 217.684.2787

INTEGRA SEED LTD.

PO Box 40
 Bozeman, MT 59771-0040
 Contact: Jim Habernicht
 jim@integraseed.com
 Tel: 406-582-8375
 Fax: 406-582-8476
 www.integraseed.com

INTERSTATE SEED COMPANY

1215 Prairie Parkway
 West Fargo, ND 58078
 Contact: Bruce Hovland
 Tel: 800-437-4120
 Fax: 701-282-8218
 www.interstateseed.com

KAYSTAR SEED

PO Box 947
 Huron, SD 57350
 Contact: Ken King
 kaystarseed@basec.net
 Tel: 605-352-8791
 Fax: 605-352-8361

LEGEND SEEDS

PO Box 241
 DeSmet, SD 57006
 Contact: Glen Davis
 Tel: 605.854.3346
 Fax: 605.854.3135

MONSANTO CO.

5608 - 83rd St
 Lubbock, TX 79424
 Contact: Geoff Thomas
 geoffrey.l.thomas@monsanto.com
 Tel: 806.798.7993
 Fax: 806.798.0870
 www.monsanto.com

MYCOGEN SEEDS

1340 Corporate Center Curve
 St. Paul, MN 55121-1428
 Contact: Paul Holmen
 PAHolmen@dow.com
 Tel: 612-405-5919
 Fax: 612-405-5939



Photo: National Sunflower Association

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NC+ HYBRIDS

3820 North 56th Street
Lincoln, NE 68521
Contact: Gene Kronberg
gkronberg@nc-plus.com
Tel: 402.467.9703
Fax: 402.467.4217
www.nc-plus.com

NOVARTIS SEEDS INC.

PO Box 959
Minneapolis, MN 55440
Contact: Mark Schmidt
mark.schmidt@seeds.novartis.com
Tel: 612-593-7189
Fax: 612-593-7203
www.nk.com

PIONEER HI-BRED INT'L, INC.

7100 NW - 62nd Ave.
Box 1150
Johnston, IA 50131-1150
Contact: Mark Lyle
lylem@phibred.com
Tel: 515-270-5977
Fax: 515-334-6569
www.pioneer.com

PROSEED, INC.

705 E. Brewster St.
Harvey, ND 56732
Contact: Keith Peltier
proseed@ndak.net
Tel: 701-324-4177
Fax: 701-324-4683

RED RIVER COMMODITIES, INC.

501 42nd St. NW
Fargo, ND 58108
Contact: Randy Wigen
randyw@redriv.com
Tel: 701-282-2600
Fax: 701-282-5325

SEED AMERICA

Box 226
Breckenridge, MN 56520
Contact: Gary Fick
seeds2000@seeds2K.com
Tel: 218-643-8041
Fax: 218-643-2331

SEEDS 2000

PO Box 200
Breckenridge, MN 56520
Contact: Leland Falck
seeds2000@seeds2K.com
Tel: 800-874-9253
Fax: 218-643-1208
www.seeds-2000.com

TRIUMPH SEED COMPANY, INC.

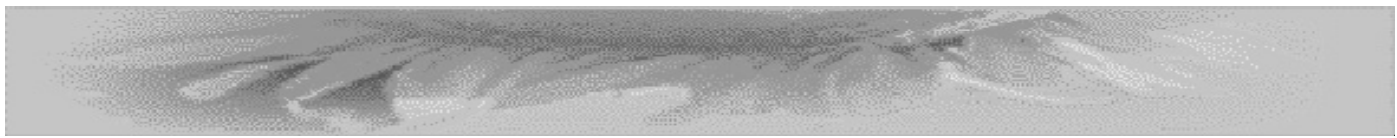
Box 1050
Ralls, TX 79357
Contact: Noble Koepf
noble@triumphseed.com
Tel: 800-530-4789
Fax: 806-253-2820
Agronomist: Ben Benton

***Important Seed Considerations:***

- Sunflower seed is sold by the bag. However, seed companies package seed in various size bags.
- Always ask about seed size and number of seeds per bag.
- For producers that use plate planters, different planter plates are required depending on seed size.

Risk Management Options Available to Sunflower Producers

- **Nonrecourse Marketing Assistance Loans**
 - **Loan Deficiency Payments (LDPs)**
- **Non-Insured Crop Disaster Assistance Program (NAP)**
 - **Crop Insurance by Written Agreement**



<u>Nonrecourse Marketing Assistance Loans</u>	<u>Loan Deficiency Payments (LDPs)</u>	<u>Non-Insured Crop Disaster Assistance Program (NAP)</u>	<u>Crop Insurance by Written Agreement</u>
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Sources of Additional Information

The following is a resource list for sunflower producers interested in obtaining additional information. Included are Missouri producers with sunflower experience, public research and nonprofit associations, publications, and websites which address sunflower production and marketing issues.



Public Research and Nonprofit Associations

Jefferson Institute	Rob Myers	573-449-3518
University of Missouri	Carl Morris	573-882-2307
National Sunflower Association		701-328-5101

Missouri Producers with Sunflower Experience

Renne Davis	Audrain County	573-594-3222
Terry Hilgedick	Boone County	573-657-4322
Rick Hilgedick	Boone County	573-657-2635
Linus Rothermich	Calloway County	573-386-2436
Ken Tevis	Pettis County	660-826-8523
Jerry Weber	Pettis County	660-879-4544

Sunflower Extension Guides

Sunflower Production. 1995. North Dakota State University, Bulletin #25.

Cost: \$8.00 Phone: 701-231-7882

Online: www.nodak.edu/extpubs/plantsci/rowcrops/eb25w_1.htm

High Plains Sunflower Production Handbook. 1999. Kansas State and other universities. MF2384.

Cost: \$2.30 plus S&H Phone: 785-532-5830

Websites with Sunflower Information

National Sunflower Association	www.sunflowernsa.com
Kansas State University Extension	www.oznet.ksu.edu
North Dakota State University Extension	www.ext.nodak.edu

Sunflower Planter Plates

Lincoln Ag-Products Co. W. Richard Finke 402-464-6367

Note: Other manufacturers may also have plates available.

Publications

The Sunflower

This magazine is published six times per year by the National Sunflower Association. The magazine is free to all current and prospective sunflower producers. To receive The Sunflower, call 888-718-7033, send an e-mail (including your mailing address) to pwentz@sunflowernsa.com, or subscribe on-line at www.sunflowernsa.com/magazine/subscribe.asp

Risk Management Options for Sunflower Producers

The non-insured crop disaster assistance program (NAP) is one risk-management program available to sunflower producers. NAP is available to producers through their local Farm Service Agency office. The following is a list of frequently asked questions about NAP.

What is the Non-Insured Crop Disaster Assistance Program (NAP)?

NAP is a yield protection program against loss due to natural disaster. It is administered by the USDA's Farm Service Agency (FSA). NAP is *available for uninsurable crops*. This program could be of significant benefit to producers of sunflower, which is currently uninsurable in Missouri.

How can a producer become eligible for NAP?

Causes of loss for which NAP covers include, but are not limited to: drought, flood, hail, wind, tornado, heat, insect infestation that occurs as a result of an adverse natural occurrence or damaging weather and freezes.

How do I apply and what is the cost of NAP coverage?

Producers can apply for coverage by filing Form CCC-471 with their local FSA office. A service fee, due when the producer submits the NAP application, is equal to a) \$100 per crop per county, or b) \$300 per producer per county, not to exceed a total of \$900 per producer. Both the application (Form CCC-471) and service fees must be filed by the application closing date that is established by the state FSA office.

How do I apply for assistance if a natural disaster occurs?

If your crop or planting is negatively impacted by a natural disaster (see previous question that outlines causes of loss), you must fill out Form CCC-576 within 15 calendar days of the natural disaster occurrence, date damage to the crop becomes apparent, the normal harvest date or final planting date (for prevented planting).

How does FSA determine whether NAP payments will be available for a given year?

When a producer reports a possible loss to the county FSA office, the FSA determines whether a natural phenomenon (as defined by NAP) occurred. If the county office determines that a natural phenomenon occurred, the county then determines whether the loss was directly related to the natural phenomenon.

What are the requirements for producer compensation?

The county FSA office verifies the producer's production. To be eligible for compensation, the producer's yields must be less than 50% of approved yields. Approved yields are based on either the producer's actual production history (APH), if established, or county expected yields, if no APH has been established.

Producers may establish loss by appraisal or delivery records. If the crop is completely destroyed, an appraisal must be conducted. If the crop is delivered, settlement sheets may be used for verification of yield.

How are yields determined?

Yields are based on yield statistics for that area. Sources of historical yields may include information compiled by NASS or ERS. If this information is unavailable, expected yields might be determined by university yield statistics in that area. In Missouri, university yield trials have been performed for sunflowers.



What amount of compensation is available?

Producers may receive 55% of a market price established by the USDA. Payment is only available for the yield loss above and beyond 50% of the producer's APH or the area average yield.

What if I am prevented from planting my crop?

Prevented planting coverage is also available through NAP. Producers may receive a prevented planting payment if prevented from planting more than 35% of the acreage intended. Prevented planting must be due to drought, flood or other natural disaster.

How can I get more information on NAP?

For more information, contact your county FSA office or access the USDA website at www.fsa.usda/pas/disaster/nap.htm.



Sunflowers Eligible for Marketing Loans and Loan Deficiency Payments

Sunflowers are eligible for nonrecourse marketing assistance and loan deficiency payments that are administered through USDA for the 1996 through 2002 crop year. Loans provide eligible producers with interim financing on their eligible production. Instead of selling the crop at harvest, a nonrecourse loan allows a producer to store the production, pledging the crop itself as collateral. Later, a producer may sell the crop, and repay the loan with the proceeds of the sale. Alternatively, producers may be eligible for a loan deficiency payment (LDP) in lieu of securing a marketing loan.

Are oilseed sunflowers eligible for marketing loans and loan deficiency payments (LDPs)?

Yes, oilseed sunflowers are eligible for marketing loans and loan deficiency payments.

When are loans and LDPs available?

For sunflowers, loans and LDPs are available from the time of harvest until May 31 following the year in which the crop is typically harvested. Oilseed loans mature on the last day of the ninth month following the month in which the loan is made.

Why should I consider a marketing loan?

Loans provide eligible producers with interim financing on their eligible production. Instead of selling the crop at harvest, a nonrecourse loan allows a producer to store the production, pledging the crop itself as collateral. Later, a producer may sell the crop and repay the loan with the proceeds of the sale.

What is the national loan rate for sunflowers?

Loan rates are established annually at the national level. The rate for sunflowers may not be less than \$0.087 or more than \$0.093 per pound.

Will I receive the national loan rate?

Local loan rates depend upon on the county where you store the commodity. Base county loan rates for your state can be obtained via the internet at www.fsa.usda.gov/dafp/psd/loanrate.htm

Marketing loans are nonrecourse in nature. What does this mean?

A producer has the option of delivering to the Commodity Credit Corporation (CCC) the quantity of a

commodity pledged as collateral for a loan as full payment for that loan at loan maturity. Market loan repayment provisions specify, under certain circumstances, that such loans may be repaid by a producer at less than principal plus accrued interest and other charges.

Are there any penalties for early repayment of the marketing loan?

There are no penalties for repayment prior to the loan's maturity date. However, the quantity of a commodity pledged as collateral for a loan may not be delivered to CCC in lieu of repayment prior to loan maturity.

What is a loan deficiency payment (LDP)?

In lieu of securing a marketing loan, eligible producers may be eligible to receive a LDP. The LDP is determined by subtracting the posted county price for sunflowers from the loan rate at the same location. Deficiency payments are made directly to the producer, similar to other crops such as soybeans.

How can I find out how to sign up for a sunflower LDP?

Contact your local Farm Service Agency (FSA) office to declare your sunflower acreage and enroll for loan deficiency payments. If local FSA staff are unfamiliar with the sunflower LDP program, you may have to ask them to contact the state FSA office to receive guidance on sunflower LDPs.

SUNFLOWERS

Sunflowers, the only native North American oilseed or grain, have gained increased importance in recent years. Although sunflower was first developed for its use as an oil, today, a significant market exists for the use of sunflower as birdfood. In Missouri, several in-state buyers exist, with delivery points in the southeast, southwest, and northeast corners of the state.

The advantages of an in-state market, combined with the relative ease with which sunflowers can be grown in Missouri, make sunflowers an excellent choice for producers looking to diversify their operation.

Sunflowers were first grown by the North American Indians. Finding sunflower use common among American Indians, French and Spanish explorers introduced the crop in their respective lands. Over time, sunflowers spread along trade routes to Italy, Egypt, Afghanistan, India, China, and eventually to Russia, where sunflower developed as an important commercial oilseed crop.

Despite a long and varied economic history, sunflower has remained an economically significant crop in the United States since the mid-1960s. The U.S. currently ranks third in world production of sunflower, behind the former USSR, Argentina, and the European Union. China, India, Turkey, and South Africa also produce significant quantities of sunflower.

Top sunflower producing areas in the United States are North and South Dakota, Minnesota, Kansas and Texas. In 1999, over 3.5 million acres of sunflowers were harvested in the U.S.

To assist producers with evaluation of sunflower as an alternative crop option, the Jefferson Institute has prepared information on the following topics:

General Sunflower Topics

- Nationwide Seed Sources**
- Variety Trial Summary**
- Pest, Disease, and Weed Control**
- Harvesting**
- Regional Buyers/Markets**
- Estimated Production Costs & Returns**
- Non-Insured Crop Disaster Assistance Program**
- Information Sources/Producer Contacts**

Special Sunflower Topics

- Sunflower Crop Guide**
- Sunflower Diseases**
- Marketing Loans & LDPs**
- Sunflower Insect Pest Identification and Control**
- Sunflower Harvesting - Expanded**
- Herbicide Outlook for Oilseed Sunflowers**
- Obtaining Crop Insurance by Written Agreement**



Photo: National Sunflower Association



Reducing Sunflower Harvest Loss

Existing equipment used to harvest grain crops in Missouri can be used to harvest sunflowers. However, several combine setting adjustments will need to be made to reduce harvest loss.

It is also important to first, be prepared to harvest the crop when it is ready and second, finish harvesting in a timely manner. This reduces pre-harvest loss caused by natural factors, such as birds, wind, insects or disease.

Tips for a Successful Harvest

- Keep seed-moisture content below 10% unless drying is an option.
- Harvest slowly.
- Slow cylinder/rotor speed to 250 to 400 rpm.
- Set the concave spacing almost wide open.
- Set the fan so only enough air flow is created to keep trash floating across the sieve.
- Set the upper sieve at 1/2 to 5/8 inch wide.
- Set the lower sieve at 3/8 inch wide.

Combine Adjustment Indicators

The goal is to get a completely threshed head onto the straw walker in one piece. This is done by keeping cylinder speed slow and concave spacing wide and harvesting at a reasonable speed when seed moisture is in the low teens.

The following table can be used to troubleshoot common problems encountered during sunflower harvesting.

Common Sunflower Harvest Problems

<i>Problem</i>	<i>Possible Cause</i>
Partial threshed heads on the ground.....	Concave spacing too wide
Excessive tailing.....	Air flow too low, overthreshing at cylinder/rotor, or chaffer openings too narrow
Trash in bin.....	Overthreshing, cylinder/rotor speed too high, concave too tight, fan too low, or sieve too wide
Broken or crushed head.....	High cylinder/rotor speeds or narrow concave spacing
Crushed seed with hull intact.....	Concave spacing too tight
Dehulled or broken seeds.....	High cylinder/rotor speeds or excessive returns
Unthreshed heads on the ground.....	Poor gathering at the header

“Assuming a yield of 1,500 pounds per acre, the [typical] loss in this study amounts to 141 pounds per acre. At 8 cents per pound, that translates to more than \$11 per acre... It is easy to see the value of efficient harvesting.”

- Randall K. Taylor, Kansas State University Extension Engineer

Storage Considerations

- Avoid letting sunflower sit in a truck or grain cart overnight. This could cause excess heat, causing nutmeats to be steam wrinkled or even scorched.
- There is a tendency by operators accustomed to drying other grains to overdry sunflower. Removing 10 points of moisture from corn requires evaporating approximately 6 pounds of water, whereas with sunflower only 3 pounds of water has to be removed.
- Sunflower should be stored at 10% or less moisture if marketing within 6 months after harvest.

Additional Harvesting Information

For additional sunflower harvesting information, see the “Harvesting” and “Storing and Drying” sections of the *High Plains Sunflower Production Handbook*, published by Kansas State University. This publication can be found online at www.oznet.ksu.edu/library/crps12/sections/mf2384_a.pdf



Sunflower Pest, Disease, and Weed Control

As with almost any crop, there is a risk of loss from diseases, insects, birds and weeds. Because of these potential risks, producers should follow integrated pest management practices.

Insects that have caused problems in Missouri include sunflower moth, sunflower maggot, sunflower beetle and grasshoppers. Diseases that have caused occasional problems in Missouri include Verticillium wilt and Sclerotinia stalk/head rot.

To control weed problems, several herbicide options are available for producers for post-emergent broadleaf grass control and pre-emergent broadleaf control.

Pests

Sunflower hosts a wide variety of insects. Not all insects are damaging, and not all are capable of causing economic loss. As with any crop, it is important to regularly scout the sunflower crop to determine whether an insecticide treatment is economically justified. Scouting is especially important in early stages of sunflower growth. Several insecticides are labeled for use in Missouri.

Birds are also a potential pest problem. Small fields may suffer a higher percentage loss than large fields.

Disease

There are several diseases known to cause damage in the High Plains region, but few cause significant economic loss. Disease has not been a significant problem in Missouri, primarily because of the small acreage of sunflower production in the state.

A measure of control for both Verticillium wilt and Sclerotinia stalk/head rot can be achieved by a three to four year rotation. Should disease occur, producers should avoid planting sunflowers in infested fields.



Photo: National Sunflower Association

Weed Control

Several herbicides are available for weed control. The following products are currently labeled for use in Missouri:

Herbicides Labeled for Use on Sunflowers in Missouri (4/2001)

<i>Preplant Incorporated or Pre-emerge</i>		<i>Post-emerge (grass control)</i>	<i>Burndowns</i>
Prowl 3.3EC*	Sonalan 10G	Poast	Cyclone (paraquat)
Treflan TR-10	Sonalan HFP	Select***	Gramoxone Extra (paraquat)
Treflan HFP	Spartan**	<u>Desiccant</u>	Roundup
		Defol 750	

*Prowl 3.3EC received a label extension in April 2001 for sunflowers grown using no-till or minimum till cropping systems in Missouri. In previous years it was approved only as a preplant incorporate herbicide.

** Spartan has received a Section 18 (temporary approval) for use on sunflowers grown with conservation tillage practices in Missouri for 2001.

*** Received national registration for sunflowers in March 2001.

Additional Information

For additional information on pests and diseases, see the *High Plains Sunflower Production Handbook*, published by Kansas State University. This publication can be found online at www.oznet.ksu.edu/library/crps12/sections/mf2384_a.pdf

Sunflower Special Topics

Insect Pest Identification and Control

Insect Pest Identification and Control Photos

Diseases

Disease Photos

Harvesting

Storage and Drying

The following information has been copied for purposes of producer education from the *High Plains Sunflower Production Handbook*, published by Kansas State University.



Upcoming Sunflower Herbicide Options

A common problem mentioned by sunflower producers is the lack of EPA registered chemicals that can be applied post-emergence for broadleaf control. In addition, producers also lack options for broadleaf control in no-till applications.

Since sunflowers are commonly planted in relatively low densities and do not compete well with weeds for the first couple of weeks after emergence, additional options for weed control would be beneficial.

Herbicide options available to producers may increase in the near future with the addition of a federal registration for a post-emerge grass control, a pre-emerge broadleaf option for no-till applications, and IMI herbicides.

A New Postemerge Grass Herbicide for Sunflowers: Select

Poast,[®] a postemerge grass herbicide, has been a common herbicide for sunflower producers for a number of years. Producers may soon have another option that provides preferred control of Johnsongrass and quackgrass and greater control of some annual grass weeds than Poast.[®] Select[®] (clethodim), manufactured by Valent, is expected to receive federal registration in May, 2001 and may be more economical than Poast[®] depending on the specific grass to be controlled and the rate required.

Recent research conducted at NDSU and reported at the 2000 Sunflower Research Meeting tested sunflower tolerance to Select.[®] Select[®] was applied at 6, 8, and 12 fl oz/A plus petroleum oil adjuvant. No sunflower injury was observed for any treatment at any rate.

A Broadleaf Herbicide for No-till: Spartan

Spartan,[®] a preplant incorporate or preemerge option, has provided very good broadleaf control in sunflowers. However, it has proven to be fair at best on grass weed species and, in states with a Section 18 exemption, producers may want to consider a tank mix with products such as Prowl.[®] Spartan[®] is labeled in specific states with a Section 18 exemption for sunflowers in conservation tillage (which includes no-till and reduced tillage practices). It should be noted that like Prowl,[®] Spartan[®] requires rain for activation.

Producers will need to follow label directions closely in order to avoid potential crop injury. Producers have reported some crop injury, specifically chlorosis ("rippling" effect on leaves), however no impacts on yield have been reported. Crop injury associated with the use of Spartan[®] appears to be related to soil texture, organic matter, pH, and/or the timing of application.

In 1999, FMC Corporation gained Section 18 registration from the EPA for Spartan[®] in eight states: Minnesota, North Dakota, South Dakota, Colorado, Kansas, Nebraska, Wyoming and Montana. This exemption was granted again in 2000. For 2001, in addition to the states listed above, Oklahoma and Missouri have also applied for Section 18 registration. For all the states determination on the granting of the exemption should be prior to the planting season.

IMI-Resistant Sunflowers: Potential Postemerge Options

In the summer of 1996, Kansas State University weed scientists were called out to a soybean field near Topeka where the producer was achieving poor control of wild sunflower with the post emergence broadleaf herbicide Pursuit.[®] Wild sunflower population in that field had developed resistance to Pursuit[®] due to a continuous soybean rotation and annual applications of the same chemical. These events enabled the possibility of breeding IMI resistant sunflowers.

A number of sunflower hybrids possessing resistance to imidazolinones (IMI) have already been developed and should enter the commercial market within the next few years. These hybrids will be labeled as Clearfield[®] varieties. Clearfield[®] refers to the herbicide-tolerant crop production system of American Cyanamid Company, manufacturer of such herbicides such as Pursuit[®] and Raptor.[®]

Cyanamid has been working with seed companies such as Pioneer, Garst and Mycogen to bring IMI-tolerant crops to the US market. Initially, it is anticipated that American Cyanamid will register Raptor[®] on imidazolinone resistant sunflower varieties. Subsequent to this registration, American Cyanamid may offer a premix of imazamox (Raptor[®]) and imazapyr for increased spectrum weed control. Federal Section 3 registration may occur as early as 2002-2003.