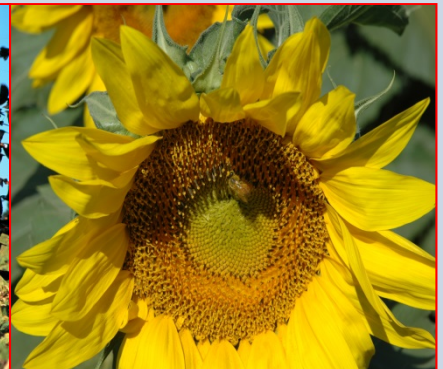


# Blackbird Management: A Sunflower Grower's Guide

George M. Linz  
USDA-Wildlife Services National Wildlife  
Research Center



# Integrated Pest Management

- **Cattail Roost Management**
- **Desiccants - Early Harvest**
- **Frightening Devices**
- **Chemical Repellents**
- **Short Sunflowers – Less Cover**
- **Perennial Sunflower Food Plots**
- **Unmanned Aerial System**
- **Undiscovered**



# Economics

National Sunflower Damage  
>\$10 million annually



# The Issue

Sunflower + Cattail Wetlands = Blackbirds



# 1975 – The Sunflower

"Good News"

FOR SUNFLOWER GROWERS  
WITH BIRD PROBLEMS



**Avitrol**

IS NOW

AVAILABLE FOR APPLICATION

The long awaited news many sunflower growers have hoped for has finally happened. Registration has been granted in North Dakota, South Dakota and Minnesota for the use of Avitrol FC Corn Chops-99 for control of certain blackbirds, cowbirds and starlings in sunflower fields of the oil producing variety. This marks the first chemical bird control for use in sunflowers and the only really effective product available.

Avitrol bait is either aerial or ground applied at a rate of 3 pounds per acre on one third of the field each application. In other words a 100 acre field would require 100 pounds of bait per application. Total number of applications will usually be a minimum of three and a maximum of five applied at six day intervals. The number of applications will depend on the amount of bird pressure in the area, duration of vulnerable period and the amount of rainfall during application.

In 1973, sunflower tests with Avitrol in North Dakota conducted by the U.S. Fish and Wildlife Service showed an 82% overall bird damage reduction compared to 1972 despite the fact that bird pressures in the area

## Guess Who's Coming to Dinner?

With Avitrol, you no longer have to stand idly by, watching flocks of blackbirds eating up your sunflower profits.

**PROBLEM:**

Sunflower growers in the Dakotas and Minnesota alone are losing over \$5,000,000 each season to blackbirds, according to the U.S. Fish and Wildlife Service.

**SOLUTION:**

Avitrol is a chemically treated bait that, when mixed with non-treated grain and eaten by just a few birds, creates a reaction — alarming the majority of the flock and causing them to vacate the area. Avitrol can save you many thousands of dollars a year. Avitrol is an effective and economical answer for ridding your fields of unwanted blackbirds.

**SOURCE:**

**Avitrol**

Oxland Chemical Company  
P.O. Box 668  
Fargo, ND 58107  
Phone: 701-282-7300

Midwest Companies  
5418 C. Avenue  
Sioux Falls, SD 57104  
Phone: 605-296-9587

Thompson-Hayward  
Chemical Company  
184 North Lincoln Avenue  
St. Paul, MN 55104  
Phone: 612-647-0160

TH Agri-Chemicals, Inc.  
P.O. Box 285  
Plymouth, WI 53466  
Phone: 715-235-8262



# 1976 - The Sunflower

## *Desiccants: One More Crop Tool*

The use of chemical desiccants is another tool that gives flexibility to the sunflower grower.

That flexibility is desirable because sunflowers are frequently described as a "full-season crop," which means that maturation and harvesting usually occur in September, October and sometimes even November. During these months, there are big changes in temperature and precipitation, both of which can have adverse effects on yield, and which also can delay harvesting.

There are three things the grower can do to reduce the problems he faces in these fall months: plant early, use early-maturing varieties, use a chemical desiccant when the seed is physiologically mature.

The chemical desiccant offers many potential advantages, according to Dr. Don C. Zimmerman, a research chemist with the Agricultural Research Service of the U. S. Department of Agriculture at North Dakota State University in Fargo.

Zimmerman points out that by treating the plants with a desiccant when the heads are mature, the grower can harvest the crop earlier than if he had to wait for a freeze, or for the plant to dry down naturally.

In the Northern Plains, the likelihood of a freeze in the fall decreases with early planting in the spring. In the South, freezes usually do not occur

prior to harvest.

Migrating blackbirds can cause serious damage to seed yields. But earlier harvest, during mid to late September, can avoid much of this loss. In addition, the earlier the harvest the less chance of encountering fall rains, which slow down the drying of the plant. If those rains are extremely heavy, they can prevent getting the combine in the field to harvest the sunflowers.

When mature heads remain standing in the field under cool, wet conditions, seed quality is reduced. When drying is rapid, or if erratic winds occur, wind shatter can cause the seeds to fall to the ground. When the leaves, stalk and head of the plant are thoroughly dry, it is much easier to combine than the plant which is high in moisture content.

Zimmerman further points out that in the South, the time required to harvest the crop can be very important, since early harvest of sunflowers allows planting the same land with small grains during the fall and winter. The financial benefits of growing two crops a year are obvious.

The use of a chemical desiccant can provide for more extensive natural drying of the seed before harvest, which can result in a saving in the fuel costs of drying the harvested seed.

Early harvest of oil sunflowers also provides a market advantage to the

grower and to the elevator operator, since it allows more time for delivery of the seed to Duluth for export through the Great Lakes. The delivery time at Duluth is important because the major European exports must be shipped out before the lakes freeze.

Finally, a chemical desiccant allows the grower more control over the efficient use of his labor and equipment at harvest time, Zimmerman says.

A chemical desiccant causes the whole plant to dry up. It is somewhat different than a chemical defoliant, which causes the leaves to fall off the plant. Although the leaves fall off, the stem may remain green for some time. In sunflower, the head accounts for a major part of the nutrients which go into seed production. It also has high moisture content so that even if the leaves are removed from the plant, it takes considerable time to dry down. Consequently, says Zimmerman, a good desiccating agent for sunflowers requires some direct effect on the back of the head.

A chemical desiccant can act in two ways. It may stop photosynthesis, a process which requires some results in water moving from the soil up into the plant, or it may physically destroy cellular structure on contact. It is this latter effect which results from a natural freeze. If the temperature is low

(Continued on Page 8)

# 1979 – The Sunflower

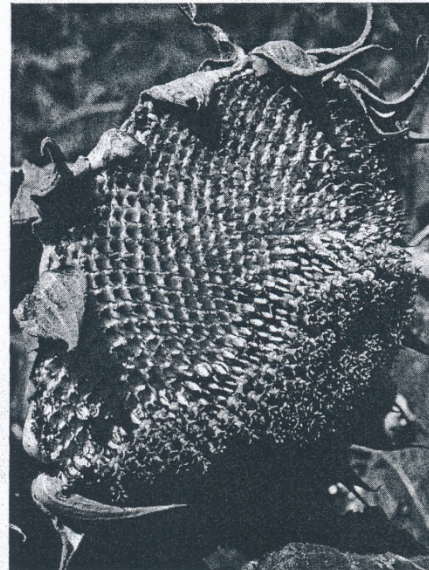
## RESEARCHERS SEEK LONG-TERM ANSWERS TO BLACKBIRD PROBLEM

**S**unflower growers near sloughs or along major flyways hardly have to be told about the damage sometimes caused by blackbirds. Many, unfortunately, know all about it first-hand. In North Dakota last year, for example, blackbirds destroyed over one per cent of the state's sunflower crop, worth an estimated \$2.75 million.

While there may be a production practice or two — such as early planting of an early maturing hybrid — which might reduce some of the risk of blackbird loss, there is still no consistent, permanent method of eliminating the problem on a widespread basis. Chemical repellants or scare devices such as boomers, guns or electronic alarm calls, may temporarily rid one field of the problem; but it's just passed on to someone else.

With that in mind, researchers at North Dakota State University have embarked on studies designed to seek more long-range and widespread solutions to the blackbird problem. Several departments at the university are cooperating in the studies, which are funded through a contract with the U.S. Department of the Interior.

Top priority, and about half the project's funding, will go to hybrid development research, according to Dr. Robert



Parfitt. While any marketable hybrids would at minimum be several years down the road, it is hoped that identification and incorporation of bird-resistant characteristics into sunflower germplasm for future development can eventually result in commercial seed resistance. For now, however, the breeders are basically "trying a variety of approaches, seeing what goes and what doesn't," explains Parfitt.

# 1980 – The Sunflower

## DAKOTA DROUGHT SPEEDS BLACKBIRD DECLINE

By Jerome Besser and David Otis<sup>1</sup>

### BIRDS HAVE FEWER HABITATS — BUT STILL INFLICT DAMAGE

Few sunflower growers will believe it, but the numbers of red-winged blackbirds are decreasing in the Dakotas.

The redwing is the species of blackbird that causes most of the damage to ripening sunflower. Surveys in a 30,000-square-mile portion of the best breeding habitat in the Dakotas show that only one redwing bred in 1980 for every two that bred there in 1965. There were an estimated 2.2 million breeding male redwings in this area in

1965, but this year the estimate was only 1.1 million. Largely as a result of the recent drought, this year's number was 20 per cent lower than in 1979.

In eight of the last 15 years, biologists of the U. S. Fish and Wildlife Service have conducted a one-week survey of breeding male redwings in early June in a 300-mile north-south strip (from the Canadian border to central South Dakota) by 100-mile east-west strip (centered on the James and



Souris rivers). This area, containing about half of the nesting redwings in the Dakotas, also contains many of the sunflower fields most heavily damaged by blackbirds. Biologists estimate the number of males, females and young redwings present to damage sunflower in late summer to be about eight times the number of displaying males counted in June.

The reason for the 15-year decline in redwing populations is attributed to the loss of nesting habitat. More formerly wet areas are farmed each year, and many wet areas that may be too wet to plant in the spring are now tilled with large machinery in the fall. This results in removal of the tall nesting vegetation preferred by redwings. The dry autumn of 1979, coupled with small amounts of snowfall and spring rainfall, left much former blackbird nesting habitat without water. In addition, the drought caused pastures and haylands to be extremely short, and livestock heavily grazed the wetter portions of pastures.

The 20 per cent decrease in numbers of breeding redwings this year may not result in a similar decrease in blackbird damage to ripening sunflower this fall. Non-breeding adults are likely to congregate earlier this summer, and if adequate rains fall during the remainder of the summer, the smaller sunflower crop will be late in maturing. Such a combination of events could result in blackbirds causing severe damage in some, but probably fewer, areas.

<sup>1</sup>U. S. Fish & Wildlife Service, Denver, Colo.

Photo: Rollie Henkes, The Furrow, Deere & Co.



# 1980 – The Sunflower

## BIRD RESEARCH PROJECT CONTINUES

Scientists at North Dakota State University are in the second year of a multi-faceted research project designed to find some long-term answers to the state's blackbird problem. The project focuses on bird behavior and the discovery of plant characteristics which may make sunflower plants more resistant to preying blackbirds. Dr. Robert Carlson of the department of entomology is overall coordinator of the project.

### **BREEDING FOR BLACKBIRD RESISTANCE**

The largest segment of the project, in terms of both money and manpower in-

involved, deals with control of blackbird depredation through the manipulation of sunflower germplasm. Dr. Dan Parfitt, agronomy research associate, is examining morphological characteristics such as stem height, head-to-stem distance, head angle, diameter and shape, seed size, bract length, seed pattern, seed color and a combination of some of these characteristics. Also being investigated are the chemical differences in the various sunflower lines.

According to Carlson, Parfitt has confirmed that head angle, head shape and bract length are associated with blackbird damage. Also, tall plants, not surprisingly, were most susceptible, while shorter plants

within a field were only slightly damaged by birds. Parfitt also noted that plants with heads between four to eight inches in diameter were more likely candidates for damage than their larger or smaller counterparts.

Carlson observes that those characteristics which the researchers believe may be manipulated and incorporated into breeding programs to make sunflower more resistant to bird damage are: downturned heads, flat or concave heads, exceptionally large or small heads and long bracts. According to Carlson, there are also strong indications that birds react adversely to certain chemicals in the food they eat. Par-

# 1982 - The Sunflower

## BLACKBIRD POPULATION CONTROL ESSENTIAL

By Larry Kleingartner

One of the most frustrating pests for sunflower growers in the Dakotas and Minnesota is the blackbird. Researchers attempting to find solutions to the blackbird depredation problem are often equally frustrated, as few highly effective cures have been offered to growers. As with most complex problems, time, money and patience have been necessary ingredients in the battle of the birds.

U.S. Fish and Wildlife Service surveys indicate that the dollar loss to sunflower growers in the Dakotas and Minnesota from blackbirds ranges from \$5 to \$12 million annually. This is, however, not the largest example of crop loss due to blackbirds. Fish and Wildlife Service annual loss estimates for other U.S. crops include: \$15-\$25 million in ripening corn; \$20-\$50 million in seeded corn; \$10 million in ripening cherries; \$6 million in sorghum; \$2-\$5 million in rice; \$4 million in grapes; \$1-\$2 million in blueberries and \$1 million in lettuce.

In addition to the estimates of crop loss, many thousands of dollars are spent annually trying to move birds out of a problem area by an assortment of techniques.

material was sprayed on these migrating males, and samples are now being collected in the Dakotas, Minnesota and other North Central states to determine if these tagged birds actually end up in this region and generate their offspring. Early indications were that 10 percent of the samples collected had been tagged in that area of Missouri.

These spring staging areas could well be that vulnerable link in the blackbird's life cycle. According to William Pfeifer, animal damage control supervisor for the Fish and Wildlife Service in Bismarck, N.D., some of the blackbirds, in their spring migration from various roosting areas in the South, funnel into the staging area in Missouri prior to fanning out into the northern parts of the United States and southern Canada. The males migrate first, followed by the females several weeks later.

Hood says that if this Missouri staging area contributes to the blackbird population which affects sunflower — which it appears to do — we may then have more precise information which could lead to additional control tools.

There are obviously a lot of sunflower growers who would like to see population control measures implemented to decrease blackbird numbers. According to the Fish and Wildlife Service, there are a number of chemical sterilants and some toxicants which show promise, but they require more testing before eventual registration with the Environmental Protection Agency.

It appears a sterilant would have more efficacy than a toxicant designed to kill millions of birds. "Sterilizing a breeding male is comparable to killing 24 offspring, as blackbirds are polygamus,

*"Sterilizing males has the most impact on reducing total numbers."*

# 1983 – The Sunflower



## **BIRD-RESISTANT 'FLOWERS NOW BEING FIELD TESTED**

By Don Lilleboe

**ABOVE:** These sunflower heads containing purple-hulled (right) and white-hulled (left) seeds, held by technician Laurie Linz, remained largely intact in a research plot at North Dakota State University last fall, while other lines around them suffered heavy seed loss due to blackbird feeding.

being particularly important. "They're all longish seeds," he notes, "and they fill out lengthwise rather

# 1988 – The Sunflower

*New Toxicant Planned for Testing*

## Progress Being Made on Blackbird Front

By Larry Kleingartner

“Five hundred million blackbirds are too many,” claim sunflower growers in the Upper Midwest who have been fighting this pest for years. Although there at present is no toxicant in place to reduce damaging birds in sunflower fields, there is a commitment from USDA to evaluate, and if it is effective and safe, to gain approval of a toxicant called CPT.

Blackbirds have probably been discussed and “cussed” at more sunflower meetings around the growing region than any other crop pest. Just the thought of 50,000 hungry blackbirds descending on one’s field can send tremors down the spine of even the most avid birdwatcher.

Reidinger warns that EPA clearance of CPT is not a sure thing. An optimistic forecast would indicate that several years of testing will be required before federal registration becomes a reality. It will also require millions of dollars. Reidinger believes that CPT is the ‘best shot’ his research unit now has, but he also believes it is important to explore other compounds.

For Larry Handegard, ADC director for North Dakota, a toxicant would make his job a lot easier. Handegard is in charge of the aerial hazing program in which fixed-wing aircraft, complete with a gunner, are dispatched to

# 1989 – The Sunflower

## **EPA Nixes Testing of CPT in the North**

In a letter to USDA/APHIS, the Environmental Protection Agency (EPA) indicated it would not allow the testing of CPT, an experimental blackbird toxicant, on a wetland without an Experimental Use Permit (EUP). EPA will allow the testing of CPT on two terrestrial sites in the South this winter. However, the EPA answer came so late that USDA may not have enough time to conduct both tests. USDA wants to field test CPT to determine its effectiveness prior to spending several million dollars on the research required for an EUP.

# 1989 – The Sunflower

## Blackbird Controls Still on Front Burner

### No One Answer to Depredation

By Larry Kleingartner

There is good news and bad news on the blackbird issue. The good news is that the Environmental Protection Agency (EPA) has allowed the testing of the experimental blackbird toxicant called CPT in a Southern roosting site this winter. (Preliminary test results indicate CPT is very effective.) The bad news is that the EPA has indicated it will not allow CPT testing in a Northern wetland this coming summer of 1989 without more research data in place. However, there are ongoing discussions with EPA regarding the summer testing, and officials are hopeful that a compromise can be found which would allow at least some limited testing in the North.

USDA's Animal Damage Control (ADC) division has been in charge of minimizing blackbird damage since 1986. Upon assuming control of the program from the U.S. Fish and Wildlife Service, the ADC unit decided a blackbird toxicant was the number one research priority in controlling blackbird damage to crops and minimizing human health and safety concerns.

# 1991 - The Sunflower

## Cattail Management Helping Both Waterfowl & Sunflower

Fish & Wildlife Programs; USDA Herbicide Research

By Don Lilleboe

Other than the now-famous Patriot missile, is there any weapon which blackbird-plagued sunflower producers have not tried to hurl at their feathered foes? Shotgun shells, treated cracked corn, propane "boomers," dive-bombing airplanes, scarecrows and an assortment of other arms all have been employed at various times by various growers — and with various degrees of success. None has proven to be "the" answer.

But the battle goes on. Researchers and growers alike are continuing their efforts to protect sunflower fields from these hungry avian species which are, after all, simply doing what comes naturally. Among the hoped-for answers is a long-term project at North Dakota State University in which breeders have been working to develop sunflower hybrids with tolerance or resistance to blackbirds. While commercially applicable results are still years away, it's an

endeavor which shows real promise of helping to at least reduce the pressure of "the blackbird problem."

Meanwhile, it's a matter of deploying whatever weapons one has available. For certain Dakota researchers and producers, that now includes taking aim at that fuzzy standby of wildlife painters and outdoor craft artisans, the cattail.

Mother Nature obviously has a real affection for cattails: She certainly allows them to flourish in wetlands across the prairie pothole region. That's perfectly natural — and it's good for waterfowl and other wildlife species which exist in or near these wetlands.

But sometimes it can turn into too much of a good thing. An overgrowth of cattails can "choke" a wetland, severely diminishing the quality of the waterfowl habitat. And as any sunflower grower with fields near a cattail-heavy marsh or slough can attest, those cattails also can

provide an excellent roosting site for blackbirds. The wetland literally turns into an airbase, with blackbirds flying out in the morning to feed on sunflower and returning to the slough at dusk to roost.

Cattail management is now part of the "battle of the birds" in the Dakotas, with the coalition consisting of USDA's Animal Damage Control Unit, the National Sunflower Association, various sunflower growers and other landowners, several departments at North Dakota State University and South Dakota State University — and, some might be surprised to hear, the U.S. Fish & Wildlife Service (FWS).

At the core of this effort is the recognition that cattail-filled wetlands often provide the primary roosting habitat for large blackbird populations depre-dating sunflower fields. If that roosting habitat is significantly reduced, the theory goes, the blackbirds will move out of that area in search of another roosting site. From all indications, the theory is accurate.

The "war of the cattails" presently is being conducted on two fronts within North Dakota: (1) The Fish & Wildlife Service has developed several programs under which it assists landowners in removing cattails by cultural or mechanical means. (2) Scientists with the Denver Wildlife Research Center of the USDA Animal and Plant Health Inspection Service (APHIS) are conducting

# 1992 - The Sunflower

## NDSU Develops Bird-Resistant Lines

Combination of Concave Head . . . Horizontal Head . . .  
And Long Head-to-Stem Distance Is Most Effective

For the past nine years, Jim Hanzel has been trying to force blackbirds *not* to do what comes naturally — namely, eating sunflower seeds. While Mother Nature doesn't yield easily, the North Dakota State University plant breeder has made headway during the past several years — headway to the point where NDSU now is releasing two inbred lines which possess significant resistance to blackbird depredation.

Blackbirds have long been an expensive thorn in the side of sunflower producers in the Dakota "pothole" regions. Depending upon the year, it is estimated that between two to five percent of the North Dakota sunflower crop is lost to blackbirds. In certain parts of the Dakotas, bird pressure has literally stopped producers from planting sunflower in certain fields — and even caused some to abandon the crop altogether.

There are no conclusive solutions to the problem. Many weapons — fireworks, shotguns, scarecrows, propane "boomers," treated cracked corn, hazing by airplane — have been employed over the years with various and often limited degrees of success. Today, research continues into the use of cattail management and chemical controls (see article on page 22) for combatting blackbirds. Fact is, the best answer at present seems to lie in an integrated control approach — and even that translates into "managing" rather than "eliminating" blackbirds.

Hybrids that resist blackbird depredation may soon be part of that solution equation. The NDSU breeding project, first established in 1979 and headed by Hanzel since 1984, has explored a wide pool of germplasm and crossed literally thousands of lines in the attempt to



Photo: Jim Hanzel

This plant exemplifies the traits which were found by NDSU breeder Jim Hanzel to be the most effective in preventing yield loss from blackbirds.



# 1992 - The Sunflower



## South Dakotan Fires Back at The Blackbirds

Volleys of Class B Explosives  
(Left) Help Vance Neuberger  
(Right) Protect His 'Flower  
Crop in a Tough Bird Area

By Don Lilleboe



**C**lark County, S.D., farmer Vance Neuberger doubles as an educator with a mission. His classroom doesn't have any blackboards, but it does have blackbirds.

Neuberger's classroom consists of his east central South Dakota sunflower fields, and his students are the tens of thousands of blackbirds who come to forage in those fields. His mission? Educating the birds as to why they'd be better off someplace else. His teaching tools? Propane boomers, light-activated taped distress calls, a 223 Ruger semi-automatic rifle — and, as of last fall, hundreds of specially manufactured explosives.

acreage over the past several years.

Vance Neuberger is one Clark County farmer who has stuck with the crop despite the blackbird woes — simply because he's still making money with it. Given 1,800- to 2,000-pound yields and some astute forward contracting, it was his most profitable crop in 1991.

But it hasn't gotten easier. Blackbird pressure on Clark County's remaining sunflower acreage seems to intensify each year, and Neuberger simultaneously has had to step up his warfare to keep pace and protect his crop.

His combat strategy took a new twist

firing his rifle into the airborne flocks.

Does it work? Neuberger says his offensive definitely helps alleviate bird damage — though he's also quick to state it's not a total solution. "In conjunction with the other controls I use (rifle, propane boomer, etc.), I think it's a very good tool," he says. The key, Neuberger believes, is to begin harassment of local bird populations early (mid-August). "By the time the weather cooled off and migration was in full swing, the locals would mix in with the migrating flocks," he remarks. "I had been scaring the local flock enough to have them somewhat conditioned, and the migrating

# 1996 – The Sunflower



## **Blackbird Project Focuses On Population Reduction**

Cutting the Number of Depredating Birds, Not Simply  
Dispersing Them, Is the Premise Behind an Avicide Baiting  
Program Currently Being Researched by USDA

# 1998 – The Sunflower

## Avicide Being Used in N.D. For Control of Blackbirds

USDA's Wildlife Services has begun a project to bait blackbirds in 20 North Dakota counties using the avicide "DRC 1339." The necessary environmental assessment documentation was completed on August 27, thus allowing the agency to begin the baiting work under a special Section 24 state label.

Nine counties in South Dakota also have been selected for baiting. However, a Section 18 label is required for South Dakota before work can begin, and EPA had not issued a ruling as of the date this issue of *The Sunflower* went to press.

Baiting can be carried out only by trained Wildlife Service personnel. The process consists of knocking down a site (one-fourth to one-half acre) within a sunflower field. The bait — placed on rice kernels — is spread on the ground via an ATV-mounted applicator. A blackbird that consumes one seed will die in about 28 hours.

What has brought us to where this avicide can now be used to control depredating blackbirds in sunflower?

The answer is that numerous people

forced the issue. That includes individuals at USDA, the two Dakota state departments of agriculture, the entire North and South Dakota congressional delegation — and the National Sunflower Association.

"This product (DRC 1339) has been researched to death," says Clark, S.D., grower Vance Neuberger, chairman of the NSA Blackbird Committee. "It has been proven safe to nontarget species, but there are a lot of people in the wildlife communities who have been opposed to the use of the product."

The tremendous financial pressure currently faced by farmers provided additional impetus for DRC 1339. For numerous farmers, 1998 is a "do or die" kind of year, and many of them are depending upon their sunflower crop to stay afloat.

"It really is this factor that moved the issue to the forefront," notes NSA President Ken Swenson, a producer from Flaxton, N.D. The avicide's safe track record, long trail of research — and the completed environmental assessment — obviously were of critical importance as well, he adds.

What direction does the baiting effort take from here?

Neuberger says NSA has always supported the concept of blackbird population management. "As anyone who has fought this pest knows, simply chasing the birds is a lost cause," he states.

NSA will be working closely with USDA Wildlife Services to develop an operational plan for spring and fall baiting. Spring baiting has been in the research phase in east central South Dakota for the past six years. The blackbirds move northward in large flocks and then spread out across the Dakotas, Minnesota and the prairie provinces of Canada, setting up nests for the reproduction season. Neuberger says the spring population is easier to bait since food sources are more limited.

We need to generate some good population dynamics to determine how many birds must be baited in order to have an economic impact on fall damage," according to Neuberger. "Then, USDA needs to expand the fall baiting — beginning in early August — to assist those producers being seriously hurt by the birds prior to harvest. We have to be controlling the populations in both seasons."

Sunflower isn't the only crop being hurt by blackbird depredation. Rice, corn, blueberries and several fruit crops also are impacted by this aggressive bird.

Many Gulf State communities are negatively affected as well, as the birds

# 2000 – Spring Baiting

Page 12C □ Sunday, May 14, 2000 □ The Bismarck Tribune

DAKOTA

## Delay on blackbird decision keeps

■ U.S. Fish and Wildlife wants more research done before birds are killed

BLAKE NICHOLSON  
*Associated Press Writer*

While two government agencies debate a blackbird poisoning program, farmers in the Dakotas are seeding their sunflower crops and looking at propane-powered cannons, scarecrows or other ways to keep the birds at bay.

"You've got two agencies contradicting each other. Meanwhile, who suffers? The producer," said Vance Neuberger, who farms in northeast South Dakota. "It's disgusting because government agencies are here to help us, not work against us."

The U.S. Fish and Wildlife Service refused in March to grant the Agriculture Department a permit to poison about 2 million blackbirds in North Dakota and South Dakota. The Fish and Wildlife Service told USDA more research is needed.

The two agencies are hoping to work together on that research.

The poison, known as DRC-1339, is put in rice bait and kills the birds by damaging their kidneys and hearts.

Workers at a Colorado laboratory will



United States Department of Agriculture  
Animal and Plant Health Inspection Service

NWRC  
National Wildlife Research Center

# 2001 – The Sunflower

## Glyphosate Labeled for Late-Season 'Flowers

While Label Is for Late-Season Weed Control, There's an Obvious Parallel Benefit as a Desiccant

### Sunflower At About 70% Seed Moisture — Too Early to Apply Desiccant



Farmers have a major new tool in their preharvest toolbox, with EPA approval this spring of glyphosate for late-season weed control in sunflower.

The EPA this spring approved a supplemental label for Monsanto's Roundup WeatherMax® and supplemental labels are pending for Original Max® and RT-3®. Monsanto is in the process of registering the products in various states.

Preharvest use instructions on the label of Roundup WeatherMax states that, "This product provides weed control when applied as a harvest aid to a physiologically mature crop prior to harvest of sunflower. For sunflower, apply when the backsides of sunflower heads are yellow and bracts are turning brown and seed moisture content is less than 35%."

The label indicates to allow a minimum

# 2002 - The Sunflower

## Biocontrol Bird Repellent Available

**B**irdShield will be available to sunflower producers for a second year as a biodegradable, food-grade blackbird repellent. Its active ingredient is methyl anthranilate, a compound found in Concord and other grapes. The product, one of the first biocontrol products in the marketplace, was approved for use on corn and sunflower by the Environmental Protection Agency last year.

Leonard Askham, BirdShield's developer and a former animal control researcher at Washington State University, says between 80,000 and 120,000 acres of sunflower, both oils and confection, were treated between September and November last year. The vast majority of growers were satisfied with the product, which is aerially applied to the face of sunflower plant heads.

To be an effective deterrent to blackbird feeding, the product must land on the face of the sunflower head. As a sunflower plant starts to mature, the sunflower head starts to descend and even drop down into the canopy, which can make it more difficult to apply BirdShield. The National Sunflower Association is sponsoring research to find out why most applications were successful in getting product on these descending heads, and why some applications were unsuccessful.

Vern Hofman, extension ag engineer, North Dakota State University, will be conducting the BirdShield application research. Hofman will first determine if different water can prevent spray application from forming the proper particle size, and if so,

what additives need to be added in order to make the correct particle size. Hofman will also focus on the aerial application technique. Nozzle size, type, angle and pressure will be tested for best coverage. Speed, altitude, time of day, temperature, humidity and any other factors that may affect the efficiency of the application process will also be studied.

Max Dietrich, the NSA's production coordinator, believes this research will help increase knowledge about the best methods to apply the product. However, he points out that no product is ever 100% effective, and that farmers still need to use all bird deterrent tools available to them, such as the cattail spray program, cattail control management, Starlicide Complete, and scare tactics.

Birdshield can usually be tankmixed with insecticide, but Askham cautions that it should be premixed to test compatibility. Application timing is also crucial, he says. The product should be applied as soon as birds begin showing up in a field, and repeated as necessary to maintain repellency. "That's about every seven to 10 days, but some growers said it lasted 10 to 12 days, and some confection growers said they only had to apply it once and it was good for three weeks. So again, producers should monitor their fields, and keep in mind that although this product has been proven effective, it's not a silver bullet, and it's not going to work in all cases."

Additional information about the product can be found at [www.birdshield.com](http://www.birdshield.com) —  
**Tracy Saylor**

## Multiple Sources Of E. Coli Risk

Birds are certainly not the only potential source of E. coli O157 in feedlots and dairy farms. Dale Handcock, professor of veterinary sciences at Washington State University, says that feed, water troughs, and fecal contamination from other animals including horses, dogs, cats, and flies can be disease vectors.

Still, studies have been conducted which do implicate birds as a source of disease transmission. One study conducted in the Czech Republic indicated that black-headed gulls might play a role in the dispersal of pathogenic salmonella. Another study that looked at salmonella cases in Norway suggested an epidemiologic link between avian and human cases. "Having direct contact with wild birds or their droppings" was reported as one factor linked to an increased risk of infection.

A Germany study also linked salmonella to soil samples contaminated with bird feces, mostly gulls and crows. The cases seemed greatest during autumn and winter, when a larger number of bird flocks congregated at contaminated sites. The study in Norway also observed a distinct seasonality, with 76% of recorded salmonella cases occurring during January-April.

Courtesy of Handcock, summaries of these studies and others, with references to published sources, can be found online at [www.sunflowernsa.com](http://www.sunflowernsa.com). Click on "The Sunflower Magazine" link, then "the archives." The summary "Bird Disease Research Studies" can be found under the birds category.

# 2003 - The Sunflower

## Is 'Grape Juice' For the Birds?

Heading into Its Third Year of  
Commercial Use, BirdShield™  
Blackbird Repellent Draws  
Mixed Opinions and Results

**I**s BirdShield™ a cost-effective and successful means of repelling blackbirds in sunflower? It depends on who you ask.

After two seasons of commercial availability and entering a third, some growers will tell you they've had good luck with the "grape juice" product, while others have not. The product's active ingredient, methyl anthranilate, is a component in Concord and other grapes.

A biodegradable food-grade repellent, BirdShield has been used in all 50 states for fruit, turf, and a variety of crops, including corn and sunflower. Most recently, the product has been registered by EPA for cereal grains, including, sorghum, millet, and oats.

In sunflower, the product is aerially applied to the face of sunflower heads as the crop begins to ripen or birds begin to feed on it. Seeds treated with the product are distasteful to blackbirds, prompting them to leave the treated field in search of other food sources. The product's effective life span is about a week, adhering to the treated plant surface until broken down by the sun. Hot, sunny weather may shorten effectiveness, while cool, overcast conditions may prolong it.

The product manufacturer's web site ([www.birdshield.com](http://www.birdshield.com)) states that in sunflower fields treated with two, one-pint applications of the repellent at seven-day intervals, damage was reduced to about 3% while untreated fields sustained damage from 78% to 90%. These figures represent samples of individually harvested heads from which the damage was both measured and the total amount of seed produced weighed. Harvest weights ranged from 133 to 700 lbs./ac. (mean = 344) in the untreated plots while weights ranged from 1,430 to 1,909 lbs./ac. in the treated plots.

Company CEO Fred Dunham says people are still learning how to use the product. "One thing that's important is that if you anticipate using it, plan ahead and have the product on hand and the aerial applicator lined up. Get it on right before the birds start eating. [For] the guy who waits until he sees birds in the field, then tries to track down a supplier and line up an applicator, there might not be anything left to protect."

Dunham also stresses that BirdShield is a different mode of action than other bird repellents. "It's not like a propane cannon, where you get instant results. BirdShield operates over a period of time. You spray it on and you will then see fewer and fewer birds in the treated area over a string of days."

Some sunflower hybrids have concave heads that droop. This trait, on one hand, makes it harder for birds to feed. On the other hand, it makes it difficult to treat, so growers may not want to use BirdShield with those types of hybrids, advises Max Dietrich, the NSA's production coordinator.

Dunham says it has become apparent that water with high concentrations of iron can negatively affect the performance of BirdShield. "There are some areas in central N.D. with such high iron in the wells, that I think they're just going to have to use surface water for application," he says. A local aerial applicator familiar with conditions most favorable for spraying can also make a big difference in the success of a treatment, he adds.

### NDSU Aerial Analysis

Vern Hofman, North Dakota State University extension ag engineer, looked at methods that may improve the efficacy of BirdShield in experiments late last summer.

Spray coverage trials were conducted on the morning of Sept. 6.

# 2005 – The Sunflower

## Using Sunflower to Decoy Birds Away From Sunflower

Wildlife Researchers Are Working with Producers To Evaluate Using Lure Plots to Attract Blackbirds Away from Commercial Sunflower Fields

Could a sunflower decoy help keep birds away from the real McCoy?

Researchers are looking at the concept of planting lure plots near commercial sunflower fields, with encouraging results. Lowering blackbird damage in sunflower fields continues to be a significant hurdle for researchers and farmers. Farmers suffer field losses ranging from nothing to near total devastation. But often blackbirds tend to eat a portion of a field near a wetland or tree grove — about 20 to 30 acres. That lowers the overall yield of the field, but may not be enough to trigger an insurance claim — just part of the frustration of

plant 20-acre sunflower plots near a wetland that has a history of harboring significant blackbird numbers. Farmers were contracted to plant the sunflower plot as if it were a commercial field. Seventeen plots were planned; but due to the wet and cool season, only 13 plots were able to withstand the rigors of the season. Farmers were compensated \$150 an acre.

Harvesting the decoy sunflower was not allowed, nor was the use of insecticides during or after the bloom period. Linz points out that head insects will help attract blackbirds and other bird species to decoy fields. Plus, insecticides can have a direct

and whose field," he remarks.

One of the potential strengths of the lure plot concept is that it provides a feeding alternative for "local" birds. These are blackbirds that are congregating in mid-August into groups of several thousand, and are in the process of developing their flying feathers. "These birds are in really poor condition at that time of year and are very difficult to move out of fields, largely because they can't fly very well," says Linz. It is these birds that really frustrate farmers, because they are not as easily harassed out of sunflower fields. The birds will minimize their flying time for feeding, so if a lure plot is nearby, they are very likely to use it.

By the time their feathers are fully developed in mid-September, the birds are also easier to harass, and are likely to begin their trek south. Thus, the lure plot might be able to play an important role in reducing that early damage which is almost uncontrollable, says Linz. Plus, about 70% of the damage usually occurs within the first 14 days after petal drop.

USDA and NDSU researchers observed the lure plots last season for desirable species as well as undesirable blackbird





# 2006 - The Sunflower

## Bird Feeding Industry Outlook

A Significant Factor  
for the Bird Feeding  
Industry — A Key  
Market for Sunflower  
Seed — Is Weather,  
Particularly in the  
Northeast

By Susan Hays



*Left: Bird feeding is estimated to be a \$2 billion-plus annual industry in the U.S. alone, with consumer spending on the sunflower portion of birdseed around \$200 million. About 600,000 acres of the annual U.S. sunflower crop is sold into the bird feed market, according to the National Sunflower Association. Bird feed processors commonly base their price to producers off the oilseed market and an average oil premium, with price that may fluctuate based on supply/demand factors and oil content by production area. For producers of confection sunflower seed, the bird feed market can provide an alternative for product that doesn't meet human food standards. A list of NSA member bird seed buyers can be found on the 'Seed Suppliers/Buyers' page within the Buyers section on the NSA web site, [www.sunflowernsa.com](http://www.sunflowernsa.com).*

# 2007 – The Sunflower

## Utilizing ‘Block Planting’ to Minimize Blackbird Impact

N.E. North Dakota Growers Hope Approach Will Increase Sunflower’s Viability in Area

A group of Nelson County, N.D. (east of Devils Lake), sunflower growers are coordinating their plantings this year to minimize the effects of blackbirds.

Nelson County extension agent Nels Peterson has been working with area growers to consider “block planting” and utilizing various tools available to reduce blackbird damage. Nelson County used to be a leading sunflower production county, but

Nelson and his neighbors will be using several programs offered by USDA’s Wildlife Services, such as controlling cattails in deeper wetlands with a registered herbicide and establishing conservation lure plots. Both are USDA cost-share programs.

The cattails provide blackbird habitat throughout the season, and the elimination of these weeds can significantly reduce

tail areas and the combination of new USDA programs that he can once again be successful in producing the crop.

“Sunflower has a natural fit in our area, and with the exciting new crop pricing opportunities we have to make this work,” he remarks.

*The Sunflower* will provide an update on the Nelson County blackbird control efforts next winter.

USDA research has determined that more than 75% of the damage from blackbirds comes in the 2-1/2 weeks after petal drop. The early blackbirds that are grouping are difficult to move because they do not have mature feathers for longer distance flying. Thus, eliminate roosting habitat if possible. Most often, that is cattails, which usually can be mowed, tilled and sprayed. A track-driven tractor works well in flattening cattails in marshy, hard-to-reach areas.

# 2007 – The Sunflower

## **Preharvest Treatment Useful Tool in Battling Birds**

*December 2007*

Brothers Kevin and Kent Matejcek found a new ally this year in their annual “battle with the birds” — a preharvest application of glyphosate.

The Matejceks, who farm near Lakota, N.D., are the only sunflower producers in their immediate vicinity — a vicinity that includes substantial CRP acreage and plenty of cattail-populated wetlands. They aggressively fight blackbirds on their own land; but can’t do much about bird habitat on their neighbors’ CRP. “There are a lot of nearby roost areas we can’t manage,” Kevin affirms. As a result, the Matejcek sunflower fields show up on bird radar as a very alluring food bank.

In recent years, the Matejceks have utilized the cost-share program wherein USDA-APHIS covers up to 70% of the cost of chemical control of cattails in standing water. This year, they also participated in the conservation “lure” plot program under which USDA provides cost-share funding for the planting of plots in high-damage areas. The Matejceks planted a total of 60 sunflower acres (three sets of 20) in lure plots last spring, mainly along the edges of fields located next to cattail marshes.

The lure plots “really helped us,” Kevin reports. “Birds like to work on those edges from where they’re roosting.” Feeding heavily in the lure plots, the blackbirds did minimal damage to the Matejceks’ adjacent confection sunflower acreage.

# 2008 – The Sunflower

## Desiccation: The 'Sharpen' Option

Mixed Results in 2010;  
Label Changes for 2011



# 2012 – The Sunflower



## Blackbird Management: Several Options Do Exist

Bird Damage Remains Frustrating for Numerous Growers,  
But They Need Not Face This Production Challenge Alone

### Bird Damage Remains Frustrating for Numerous Growers, But They Need Not Face This Production Challenge Alone

**B**lackbirds continue to be a black mark on the sunflower industry. They are the reason why some farmers in certain regions of the Dakotas choose not to grow sunflower. There's no question that sunflower can make a profit; but nothing is more frustrating than watching your crop being eaten by pesky birds right before your eyes.

Sunflower is not the only crop affected by blackbird damage. There is a strong push nationally, not just within the sunflower realm, to find a solution to blackbird damage for a host of crops. Blackbirds annually do an estimated \$200 million damage to crops including grains, oilseeds, fruits and vegetables. That's the bad news.

The good news is that there's help available for growers who experience blackbird problems. There's assistance in the way of bird harassment techniques as well as chemical repellents that have proven to be very effective in many situations. There is also research on the horizon for additional chemical repellents (*previous article*) and mechanical repellents.

### Reducing Bird Habitat

But even before a grower calls in reinforcements, the first line of defense is focusing on bird habitat. Controlling cattails, either on dry ground or in wetlands, is a good way to get birds at the source. Cattails are the number one roosting site of choice for blackbirds, and getting rid of those areas near sunflower fields can greatly diminish blackbird activity.

Dr. George Linz of the USDA-APHIS-WS National Wildlife Research Center has found that eliminating cattails can pay dividends for five years or more. Excessive wet conditions for many years in much of

*Controlling cattails, either on dry ground or in wetlands, is a good way to get birds at the source.*

less blackbird nesting habitat. In North Dakota alone, almost 650,000 acres were taken out of CRP and put into production after the 2012 contracts expired in October. Approximately 350,000 acres came out of the CRP program in Minnesota and South Dakota combined in this same time period. Fewer idle acres, means less habitat for blackbirds to nest.

### USDA Crews Available

The second line of defense for growers is the USDA-WS crews on hand to assist with blackbird issues. Part-time, seasonal employees will deliver and station loaner propane cannons when fields in the Dakotas are being hit by blackbirds.

The cannons are equipped with automatic timers that turn off the noise mechanism at night to conserve propane. The sequence of explosions can be easily changed to minimize the risk of blackbirds becoming accustomed to the noise.

The key is to get the cannons out early before the birds take up residence and get used to associating a field with a major food source. USDA part-time employee for blackbird assistance Sherwood Haakenson services the northeast portion of North Dakota along the Canadian border. This area has a large number of sunflower acres

# 2012 – The Sunflower

## Two Promising Bird Repellents Tested



Photos: Sonia Mullally

Birds are tricky critters to keep out of a preferred buffet of ripening crops, affirms wildlife biologist Dr. George Linz. And he ought to know. Linz has spent more than 30 years studying their behavior, primarily working on blackbird ecology and developing methods of reducing dam-

age. His research team has developed, for example, the use of glyphosate for controlling cattails used by roosting blackbirds. During his long career with USDA-APHIS-Wildlife Services, Linz has seen many bird repellent products come and go, personally conducting or being otherwise

Avian Control. Linz, in turn, contacted the National Sunflower Association to discuss research potential with the company's bird repellent for use on sunflower.

Stone's company specializes in soap and deodorizers. One might question how a soap company would have any idea how

Linz is planning to report the findings from the Avian Control study at the annual National Sunflower Association Research Forum in Fargo in January. He will be interviewing each grower involved in the experiment as well as the field staff, getting their opinions and observations along with his numbers on damage assessment.

### Ongoing Work With Anthraquinone

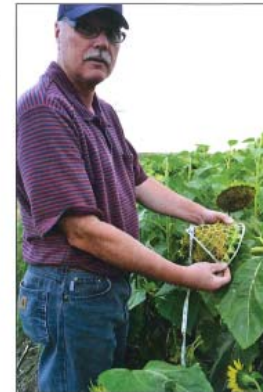
Another repellent project — one that has involved multiple USDA and NDSU researchers — is studying a chemical known as Anthraquinone (AQ). Available since the 1950s, AQ is gaining momentum as a blackbird repellent.

"It's the only product we've tested in the laboratory and enclosures that consistently repels birds," Linz says. He knows that is a bold statement, but he's speaking from results.

Linz communicates regularly with company reps to see what it's going to take to get the product on the market. The company that holds the patent for Avipel (with AQ as the active ingredient) is small, and the marketing process is costly and lengthy.

Even though the chemical has been around for a long time, it is not approved for use on sunflower. But because of its strong and consistent efficacy in trials, Linz says he wants to follow the research to its end, wherever and whenever that might lead.

A multi-year USDA study has been evaluating Avipel and its efficacy as a bird repellent on seed crops such as sunflower, corn and rice since 2009. That year, the product received a Section 18 label from EPA. It is an approved corn seed treatment in eight states, including four major sun-



USDA wildlife biologist George Linz demonstrates how researchers calculate bird damage on sunflower heads as part of a multi-year project looking at bird repellent efficacy. Their work in 2012 focused on plots in the Turtle Lake area of central North Dakota.

flower-producing states (Minnesota, North Dakota, South Dakota and Texas). It is primarily used for defense against pheasants that eat the emerging corn. It's also a rice seed treatment.

In 2009, after preliminary lab work was conducted, NSA funded research on ripening confection sunflower. This work included field research with bird enclosures. More field work with bird enclosures was conducted in 2010 — but this time on oilseed sunflower. Each year took into ac-

count different rates and modes of application. These crop-destruct studies are limited to 10 acres or less.

Findings were as follows: In 2009 — 18% damage @ 2 gal Avipel/ac and 64% damage among untreated enclosures. In 2010 — 34% damage @ 0.5 gal Avipel/ac; 33% damage @ 1 gal Avipel/ac; and 44% damage among untreated enclosures.

No work was conducted in 2011. This season, Linz and crew conducted field trials in small plots in an open environment. In cooperation with a grower near Turtle Lake, N.D. (central part of the state), Avipel was applied with a ground sprayer on roughly seven acres of oilseed sunflower in three different locations. A preliminary spray was done on August 17 (2 qts/acre) and another on August 31 (0.5 gal/ac) at the R-6 stage of development. Both applications were done by a high boy ground rig. Linz and staff then clipped heads in order to conduct residue levels on the bracts and seeds. They also took bird damage measurements throughout the process. Lab work will continue with the 2012 samples.

The goal is to acquire a special experimental use permit from the EPA in 2014 and to work toward field study on a large commercial scale on multiple acres. "It's a long process," admits Linz. "But we talk to so many growers who simply tell us they just need a little help with the birds. That's what we're trying to accomplish."

The point is that management options do exist, and more are emerging all the time. The key is to find a repellent the grower can count on with consistent results. Linz adds, "We're looking at all the options out there to help the farmer. The grower works too hard to get his profit taken from him this close to harvest." —

Sonia Mullally

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Wildlife Services

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# Integrated Pest Management

- **Cattail Roost Management**
- **Desiccants - Early Harvest**
- **Frightening Devices**
- **Chemical Repellents**
- **Short Sunflowers – Less Cover**
- **Perennial Sunflower Food Plots – marginal crop areas**
- **Unmanned Aerial System**
- **Undiscovered**



# Whatever It Takes!



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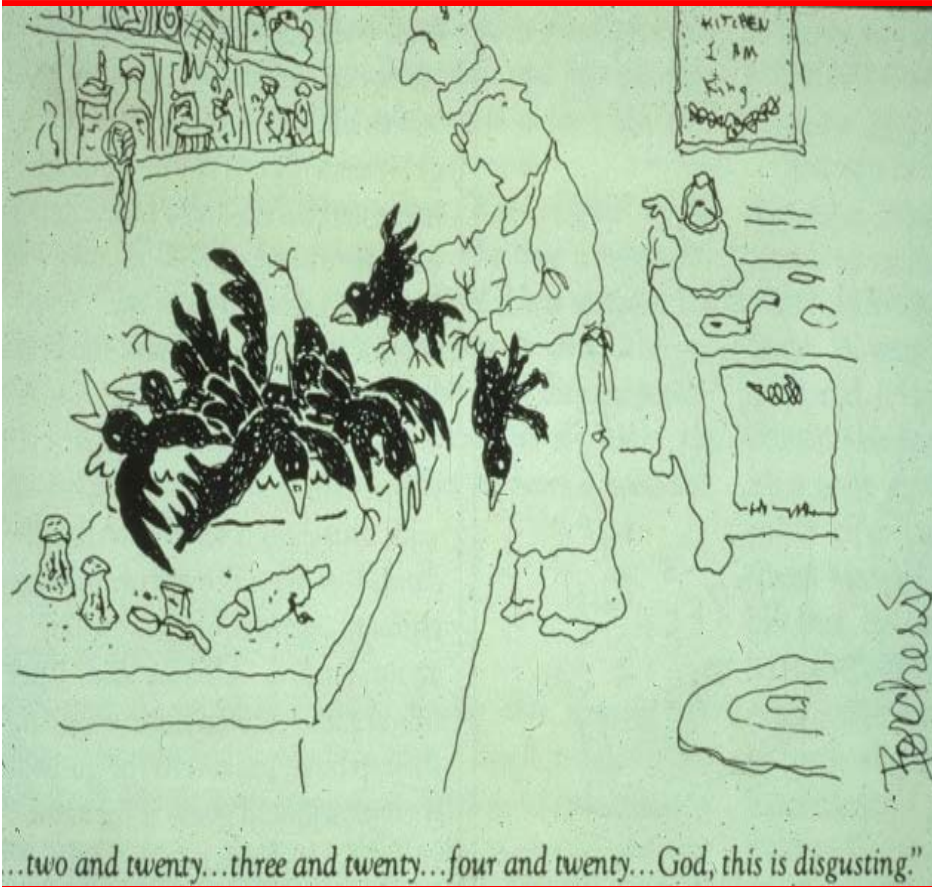
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United States Department of Agriculture  
Animal and Plant Health Inspection Service

NWRC  
National Wildlife Research Center

# Rumors Are Sometimes True



# Rumors Are Sometimes True

## ➤ Yes, The Bird Guy Is Retiring From Federal Service

### Poisonings

## FIELD NOTES



Each spring vast flocks of red-winged blackbirds descend on the plains of South Dakota, gathering among the cattails and reeds in roosts that can be 500,000 strong. Their morning flights create rippling black clouds as the flocks set off in search of food. Unfortunately, farmers complain that in the fall the redwings devour a significant amount of the region's sunflower crop. In Minnesota and the Dakotas, they say, the birds cost them between \$4 million and \$11 million a year.

George Linz, a biologist with the federal National Wildlife Research Center, maintains that by reducing redwing breeding populations in South Dakota in the spring, the agency may limit the damage the birds inflict on the sunflower crop when they migrate north in the fall.

# AUDUBON

Audubon: Incite

Page 1 of 12

Audubon  
11/2001

(incite)

### Red Baiting

**The USDA wants to poison 2 million blackbirds a year to save sunflower crops in the Upper Midwest. Trouble is, the department's own data suggest the plan won't work.**

*by Ted Williams*

It is difficult for swamp Yankees to write objectively about how best to kill red-winged blackbirds for the alleged benefit of agribusiness, particularly when the plan reeks of politics. In our circles, the arrival of the males in late February, or sometimes early March, is important news and no less cause for celebration than the first tentative chimes of spring peepers a few weeks later. In the Northeast, as in most of the nation, redwings serve as palace guards to ancient snappers and their courts of lesser turtles, frogs, muskrats, ducks, herons, pickerel, and trout. Few are the days when, sprung from work or winter, I am not gladdened by at least one redwing, fluttering up from her nest, riding a bobbing cattail, or flashing his scarlet epaulets and shouting "Okareeee!" into the sweet wind.

### What You Can Do



By the time you read this, the draft environmental-impact statement on spring black- bird control should be out. Read it, think about it, and make yourself heard during the comment periods. You can get the document by phoning 701-250-4405 or by writing to USDA Wildlife Services, 2110 Miriam Circle, Suite A, Bismarck, ND 58501.

# Rumors Are Sometimes True

➤ Last Day Friday January 09, 2015



# Rumors Are Sometimes True

- Caveat - Contracting to provide continuity to new Project Leader

**If at first you don't succeed**



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# Thank You Collaborators

- USDA-WS National Wildlife Research Center
- USGS
- North Dakota State University
- South Dakota State University
- USDA-ARS
- University of Minnesota
- International Universities
- Genosys, LLC
- Normandeu, LLC

# Thank You Cooperators

- National Sunflower Association
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- North Dakota Department of Agriculture
- Monsanto Company
- Bird Shield Repellent Corporation
- BirdGard, LLC
- Avian Enterprises, LLC
- Mycogen Seeds
- Seeds 2000/Nuseed