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## INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 91-4] [April 5, 1991]

Alex Martin

*University of Nebraska - Lincoln*, [amartin2@unl.edu](mailto:amartin2@unl.edu)

Bob N. Stougarrd

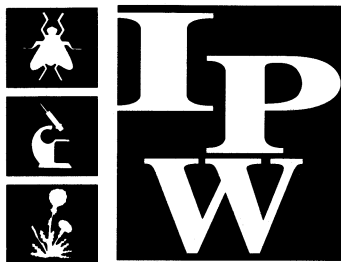
*Extension Weed Specialist, University of Nebraska-Lincoln*

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# Insect Science Plant Disease Weed Science

# NEWS

UNIVERSITY OF NEBRASKA COOPERATIVE EXTENSION • INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES

No. 91-4

April 5, 1991

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## INSECT SCIENCE

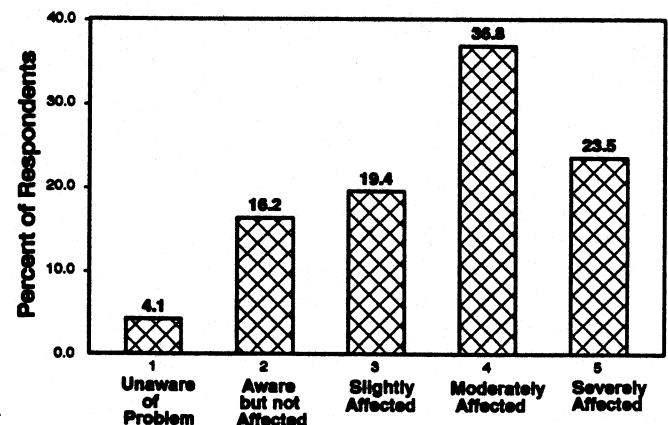
*\$10 Million Lost in 1990 to Pest*

# Assess Chinch Bugs; Plant Strategically

The chinch bug, a pest of sorghum, corn and wheat, has caused substantial economic losses to Nebraska sorghum producers for the last several years. From results of questionnaires sent to sorghum producers, we have estimated that growers in southeast Nebraska lost \$11.3 million to chinch bugs in 1989 and \$10 million in 1990.

More than 79% of respondents to the 1990 survey were affected by chinch bugs in some way (see bar graph). Counties most severely affected in 1990 were Gage, Lancaster, Jefferson, Saline, Thayer, Seward, Otoe, Johnson, Nemaha, and Pawnee (see map), although growers in Richardson, Cass, Fillmore, York, Saunders, and Nuckolls counties also had some infestations and losses. This survey was supported in part by the Nebraska Grain Sorghum Development and Utilization Board.

Although sorghum is a more susceptible crop, corn producers in southeastern counties also reported problems with chinch bugs in 1990. Chinch bugs create a bigger problem in dry years because dry conditions enhance their population densities and make infested plants less tolerant



Respondents affected by chinch bugs in 1990: 79.7%.

of damage. Because we cannot predict weather conditions between now and July, we are cautioning sorghum and corn growers to be aware of the likelihood of chinch bug problems again this year.

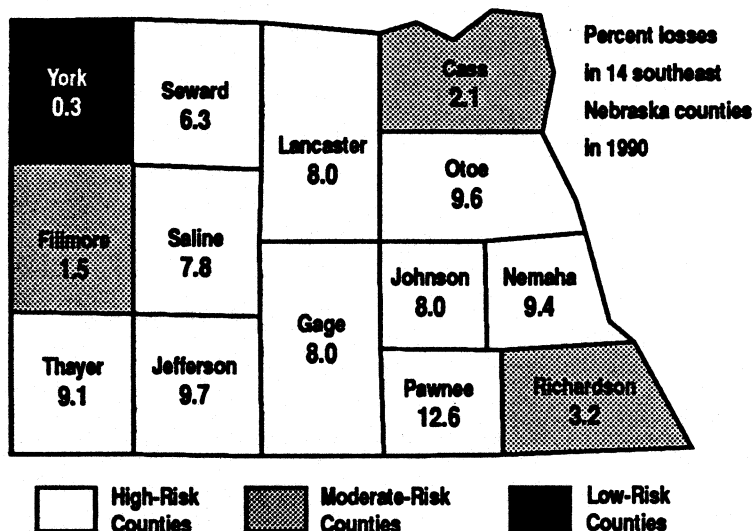
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UNIVERSITY OF NEBRASKA-LINCOLN, COOPERATING WITH THE COUNTIES AND THE U.S. DEPARTMENT OF AGRICULTURE



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Counties with probable risk of chinch bug damage in 1991.

## Chinch (Continued from Page 19)

Dr. Leroy Brooks, Kansas State University entomologist, reported at the 3rd Annual Chinch Bug Symposium March 26 that the numbers of overwintering bugs in Kansas are similar to those of two years ago.

### Assess Risk Factors

Growers can assess the risk of chinch bugs attacking their wheat, sorghum, and corn fields in 1991 by considering the following factors:

1. If you live in a county that had severe chinch bug infestations in 1990, you will be at greater risk. Because we don't know how far chinch bugs migrate in the spring, bordering counties are also at some risk.
2. Chinch bugs prefer to attack poor, thin stands of wheat that were planted late in the fall, were poorly fertilized, were poorly germinated and slow growing because of dry soil conditions, or were thinned by cold winter temperatures. Assess your wheat fields (and those of your neighbor) as they come out of winter and compare them with other fields in your area.

Wheat fields that were harvested in 1990 and have been allowed to 'volunteer' will likely be attacked this spring. Destroy volunteer plants as soon as possible to avoid having a problem in these fields, and then plant a nonhost crop such as soybeans, alfalfa, or sunflowers in these fields. If sorghum is planted in an infested field, it may be destroyed and will need to be replanted.

3. If you live in a high-risk county, you can avoid a high-risk situation by not planting sorghum or corn adjacent to wheat, especially if the wheat field is a thin, poor stand, or you see large numbers of chinch bugs in the wheat field in the spring. In addition, arrange your crops so that these

two crops are as far away from each other as possible.

To reduce the risk of losses to chinch bugs, plant nonhost (broadleaf) crops adjacent to infested wheat, or use crop insurance. Sometimes government programs can be used to avoid a bad chinch bug situation; consider a 0-92 or prevented planting option in high-risk fields.

What if you do end up with a severe chinch bug infestation? What about control with insecticides? The insecticides labeled for chinch bug control do kill chinch bugs, but they are not a total solution. This is because the insecticide does not contact chinch bugs that may be hiding in soil cracks and between the leaf sheath and the stalk. The other problem is that chinch bugs invade sorghum or corn fields in "waves". The short-lived insecticides on the market make multiple treatments necessary. Results from Kansas State University research show that no insecticide tested for chinch bug control has residual control of more than two to three days. Multiple treatments result in lower profit margins for the producer. It is far better to carefully plan your fields to avoid adjacent plantings of wheat and corn or sorghum than to rely on insecticide treatments that may not be consistently effective.

Barb Spike, Bob Wright and Steve Danielson

## IPW News

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Lisa Brown Jasa, Editor

For more information about a particular subject, write the authors at the addresses below:

UNL Department of Entomology  
202 Plant Industry Bldg.  
Lincoln, NE 68583-0816

UNL Department of Plant Pathology  
406 Plant Science Bldg.  
Lincoln, NE 68583-0722

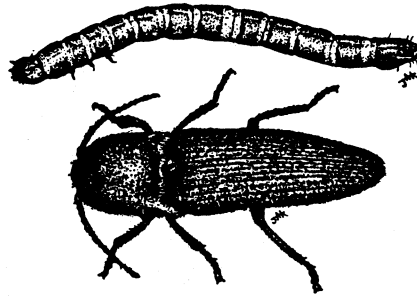
UNL Weed Science, Department of Agronomy  
279 Plant Science Bldg.  
Lincoln, NE 68583-0915

# Scout for Wireworms; Treat Seeds and Soil

Wireworms are among the most difficult insects to control. They feed on both seeds and seedlings of a variety of crops. Planter box insecticide seed treatments containing diazinon or lindane will reduce feeding damage to the seeds, but will not protect seedlings.

Wireworms feed on the seeds and roots of corn, sorghum, small grains, grasses, soybeans, dry beans, sugarbeets, potatoes, and various other root crops. Their feeding may reduce seed germination or produce weak seedlings. Wireworms eat the germ of the seeds or hollow them out completely, leaving only the seed coat. Crop emergence may be poor or can appear normal in the beginning. Later the stand becomes thin or patchy. Larvae boring into the lower portion of the stem cause seedlings to dry and die. Later in the season, wireworms will feed on the roots of the plants and may damage developing potato tubers. These insects may spend the winter as adults or larvae (*see drawing*).

Adults are about 1/4 to 3/4 inch long, hard shelled, brown to nearly black with a streamlined body (tapering toward each end). The adults are called click beetles, and when on their backs will flip up and turn over with a clicking noise. Adults can live 10-12 months. Wireworm larvae are slick, shiny, brown to reddish-brown with smooth leathery skin. They have three pairs of small legs, and are 1 to 1-1/2" long at maturity. Larvae live two to six years in the soil feeding primarily on



Wireworm and  
adult click beetle

roots. The females lay their eggs mostly around the roots of grasses. Therefore, there is a high probability that first year row crops following sod, small grains, or weedy alfalfa will be attacked by wireworms. Thorough scouting of these fields is important.

Bait stations (*see box*) may be used to assess levels of wireworms before planting. The bait consists of germinating corn and wheat seeds. Substances produced by the seedlings attract the wireworms to the bait. Bait stations should be set up two to four weeks before the planned planting date.

Place stations randomly throughout the field at a rate of one station per acre. If this rate is not practical in large fields, use a minimum of 10 stations per field. Be sure to place stations in different parts of the field (areas with different rotational histories, soil types, low or high spots, etc.) to obtain a representative sample.

If you find an average of one or more wireworms per bait station, use an in-furrow application of a labelled soil insecticide, plus a planter box seed treatment. Current registered insecticides for specific crops are listed in the Extension Insect Management Guides.

Follow all pesticide label directions concerning placement and application rate to avoid phytotoxicity problems. If wireworms are found in only part of the field, consider treating just the infested portion. If wireworms are present at low levels (less than one per station), a planter box seed treatment alone should be sufficient.

Bob Wright

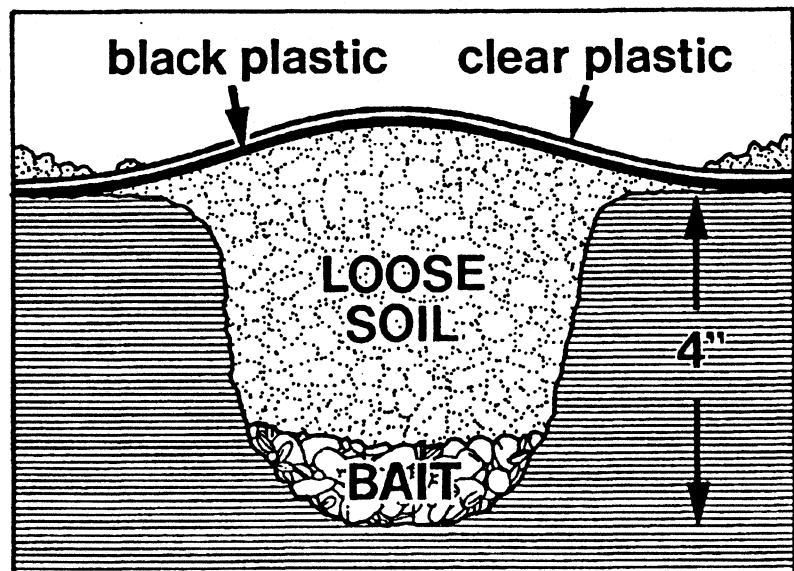
## Build a Trap

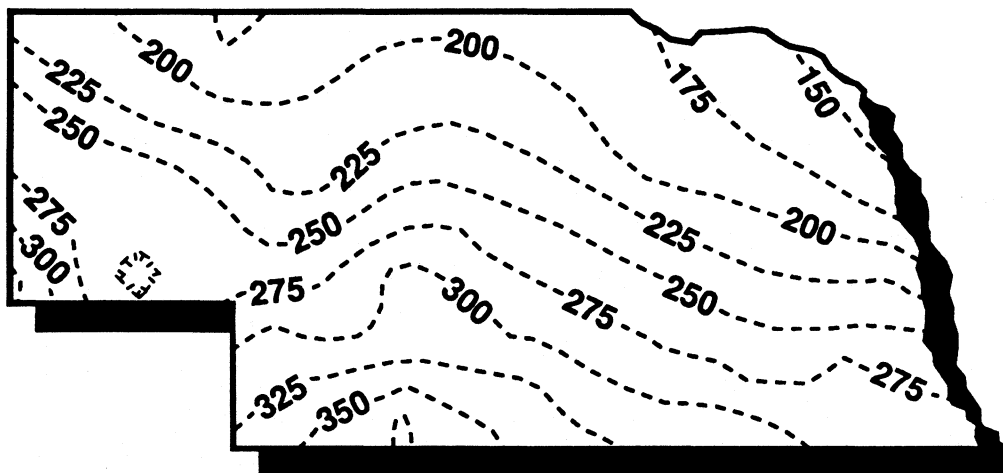
1. Use a 1/2 cup mixture of untreated wheat and untreated shelled corn for each station.

2. Dig a hole and bury the bait about four inches. Cover the bait with loosely packed soil and cover the soil surface with 18-inch square pieces of black and transparent plastic anchored on the edges with soil. The plastic helps heat the soil with sunlight and speeds the germination of the corn and wheat.

3. Mark each station with a flag or stake.

4. In 10 to 14 days, dig up the stations and count the number of wireworms.





*Accumulated degree days, base 48, for predicting alfalfa weevil development.*

## Alfalfa Weevil Larvae Found in Southwest Nebraska

Very small weevil larvae have been found in southwest Nebraska alfalfa that was only 2 inches tall, according to an April 2 report from Extension Agent John Schade in Dundy County.

Alfalfa growers should begin scouting for alfalfa weevils when alfalfa is 6 inches tall and 300 degree days

have accumulated in their local area. The map shows degree day accumulations for this pest as of March 31. Using this prediction method would indicate that weevil activity should also be noticeable in the southern panhandle and southcentral Nebraska at this time.

Steve Danielson

## *Backyard Farmer* Back for 39th Season

The television show, *Backyard Farmer*, is returning this week for its 39th season of addressing residential lawn and garden concerns. It is one of the longest running shows on public television in the nation.

The live, hour-long call-in show is aired weekly on Tuesdays at 8 p.m. on Nebraska Public Television. Returning *Backyard Farmer* panelists are NU specialists Don Steingger, horticulture; Fred Baxendale, entomology; Dave Wysong, plant pathology; and Bob Stougaard, agronomy. Reggi Carlson returns as host.

Viewers can phone in questions each week to be answered on the air by the panel or by a phone panel of knowledgeable volunteers. More than 100 call-in questions are answered per night. Lincoln residents can call 472-1212 and residents outside Lincoln can call 800-332-0265.

The show is a cooperative venture of Nebraska ETV and the NU Institute of Agriculture and Natural Resource's Department of Agricultural Communications.

## CPMU Conference Set for Kearney

The 1991 Crop Pest Management Update (CPMU) conference has been scheduled for Dec. 3-4. This year's conference will be held at the Ramada Inn in Kearney.

As in past years, the program will be designed to provide agricultural professionals with the latest crop protection information available. Details regarding the agenda and conference registration will be provided in late summer or early fall. Please mark your calendars, so you will be available to attend this important educational event.

Steve Danielson

# PLANT DISEASE

## Select Oats for Disease Resistance

A two-year evaluation of oat varieties at two locations in northeast Nebraska showed 'Ogle,' 'Hazel,' and 'Don' to have the best resistance to barley yellow dwarf. The varieties 'Bates,' 'Otee,' 'Settler,' and 'Starter', could be considered moderately resistant; whereas, 'Kelly' and 'HyTest' are moderately susceptible and 'Burnett' and 'Trucker' are susceptible.

Barley yellow dwarf is the most serious disease of oats in Nebraska. The barley yellow dwarf virus is carried by

aphids. As virus-carrying aphids migrate into oat fields, the disease will spread rapidly in varieties susceptible to barley yellow dwarf. In 1990 the three resistant varieties outyielded the two susceptible varieties by 40-50 bushels. Ninety percent of this yield difference was attributed to barley yellow dwarf. Growing oats resistant to barley yellow dwarf is a sound investment.

John Watkins

## Wheat Management Guide 'Wealth of Information'

An excellent reference entitled "Wheat Health Management" was recently published by APS Press. This is the best wheat production/wheat problem troubleshooting text to be published in the last ten years. It is 152 pages and contains numerous tables, figures, and color photographs. There are excellent chapters on plant growth and development, the limiting effects of environment, pest and disease control, and general wheat health management. The section on

winter injury and environmental effects on wheat is particularly useful. Although I am not a sales person for APS Press, anyone involved with wheat production and problem solving situations will find "Wheat Health Management" a wealth of information.

This reference can be ordered from APS Press, 3340 Pilot Knob Road, St. Paul, MN 55121. The cost is \$28. I have two copies in my office if you would like to view one before ordering.

John Watkins

## Early Garden Chores Can Reduce Disease Threat

Sunny days, spring rains, and the greening of the countryside seem to put many folks in the mood to be outside working in the garden. Even though it is a bit early to plant, there are still a number of other activities that can be done. From the plant pathologists' point of view, tackling some problems now can help reduce disease problems later.

Bury last year's plant debris or remove it from the garden. Infected plant debris is an early source of inoculum for many diseases. Plan to rotate garden crops. A good rule of thumb is to avoid planting similar crops in the same location more than two to three times in seven years. Remember, that tomatoes and potatoes are in the same family and get many of the same diseases. Don't rotate your potato patch to a tomato patch or vice versa.

When selecting seed and transplants, choose ones resistant to disease, well adapted to the location, and from a

reputable dealer. Healthy, vigorous, disease-resistant plants suitable for local conditions produce better yield, quality, and gardener satisfaction. If a soil test of the garden area has not been done recently, consider one. Fall is the optimal time to collect samples for soil testing but spring is okay. A soil test will provide information on the pH and fertilizer requirements.

Now is a good time to prune out dead, diseased, or damaged branches from trees and shrubs. Check plums for black knot — mature infections are hard, black swellings while immature infections are small, light-brown to olive-green. Check pears and apples for fireblight cankers. Check all trees and woody ornamentals for cankers and ice and snow damage. Remember that clean and proper cuts result in faster healing.

Luanne Coziahr

# WEED SCIENCE

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## Control Thistle; Avoid Penalty Costs

Although musk and plumeless thistle may have been introduced into Nebraska as ornamental plants, both are considered noxious weeds by State law. The fines given for failing to control these thistles under the noxious weed program have provided some incentive in the past. Now there is even greater incentive since the ASCS can impose additional penalties, including loss of CRP payments, if noxious weeds go uncontrolled on CRP land.

This is the perfect time to control these weeds, which are commonly found in untilled areas such as CRP acres, pasture, rangeland, and right-of-ways along railroads and highways. During this time of year the plants are in the rosette stage and are most susceptible to herbicide treatments. Control with most herbicides declines rapidly once the plants begin flower stalk elongation (bolting). Although later applications may visibly damage the plant, seed is still produced which perpetuates the problem.

In eastern and southern Nebraska, apply treatments by late April. In northern and western Nebraska, apply treatments 10-14 days later. Effective treatments for pasture, range, and CRP include the following products and rates per acre: 2/10 to 3/10 ounce Ally plus surfactant, 1 1/2 to 2 quarts 2,4-D, 1 quart 2,4-D + 1/2 pint of Banvel, or 6 to 8 ounces of Tordon 22K + 1 quart of 2,4-D. (2,4-D rates are based on 4 pound formulations.) Curtail at 2 to 4

pints also provides effective control of musk thistle and can be used on CRP acres and small grains.

Grazing restrictions vary with the herbicide and the type of livestock. Ally has no grazing restrictions. With 2,4-D, there are no restrictions on meat animal grazing. Lactating dairy animals should not be grazed on treated areas within seven days after application. However, certain manufacturers and formulations have more restrictive guidelines. Check the label of the product you're using. In pastures treated with Tordon, do not move grazing livestock to broadleaf crop areas without first allowing seven days grazing on nontreated pastures.

With Banvel, the grazing restrictions vary with the application rate and the type of livestock. Meat animals should be removed from treated areas 30 days before slaughter. For dairy animals the grazing restrictions are seven days for a 1 pint per acre application and 21 days for a 1 quart per acre application. Do not harvest hay for dairy animals within 37 days of a 1 pint per acre application and within 51 days of a 1 quart per acre application. There is no restriction on hay fed to meat animals. When Banvel is used with 2,4-D, grazing restrictions are the same as for Banvel alone.

**Bob Stougaard and Alex Martin**