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### INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-13] [June 22,1990]

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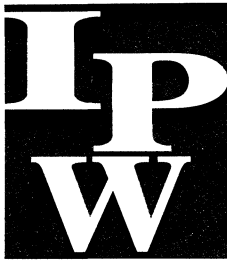
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# Insect Plant Disease Weed Science

# NEWS

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

No. 90-13

June 22, 1990

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## INSECT SCIENCE

# Baythroid 2 Gets Special Label for Sorghum

Gov. Kay Orr approved a Section 18 Crisis Exemption June 18 for the use of Baythroid 2 (cyfluthrin) insecticide to control chinch bugs on sorghum in Nebraska. Baythroid 2 is manufactured by Mobay Corporation. This use is approved for 15 days from June 18 through July 2.

The user must possess the state crisis exemption label for this use at the time of pesticide application. Label instructions include: Baythroid 2 is approved for use on sorghum to control chinch bugs at 2.5 to 2.8 fluid ounces of formulated product per acre. Apply the specified dose in 20 gallons of water per acre by ground for complete coverage. Higher volumes will assure better coverage and may aid in pest control. Applications should be directed at the basal (lower) portions of the plant. Two applications per season may be made. Allow at least 10 days between applications and at least 14 days between the last application and harvest of grain or dry forage. Green forage may be fed or grazed any time after treatment. Treated areas may be replanted with any crop as soon as practical after last application.

Baythroid 2 is a restricted use product and is for sale to and use by Certified Applicators or persons under their direct supervision. Before using this or any product, read and observe all directions, restrictions, and precautions on the EPA registered product label.

This product was tested on a very limited basis in Nebraska and Kansas in 1989. Baythroid 2 reduced chinch bug numbers and protected sorghum stand similarly to Sevin XLR and Furadan 4F, both of which are federally registered for this use. Baythroid 2 is expected to have a similar residual life in the field as these products. Based on toxicity tests, we would expect Baythroid 2 to be safer from the standpoint of human exposure than Furadan 4F, but not as safe as Sevin XLR. Baythroid 2 is very toxic to aquatic organisms and should not be applied where contamination of nearby streams, lakes, or ponds is likely.

If you are considering using Baythroid 2, talk with your local ag chemical dealer or applicator to determine its availability in your area.

Steve Danielson



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



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# Managing First Generation European Corn Borers

First generation moths of European corn borers prefer the tallest plants for egg-laying. Expect initial concentrations of egg-laying moths in fields that are taller than surrounding corn. Scout these fields first. Eggs are normally laid on the underside of leaves near the midrib. Egg masses consist of 15-30 white, flat eggs which overlap like fish scales. Eggs hatch in five to seven days. Young larvae first feed on the leaf surface near where they hatched, but soon move into the whorl and feed on developing leaves. As these leaves grow and emerge, shot-hole feeding damage is visible. Larvae feed in the plant whorl for about two weeks, then bore into stalks and complete their development. Larvae are susceptible to control measures only while they are feeding on the leaf surface or in the whorl.

To determine whether to treat first generation corn borers, check at least 25 corn whorls at each of four locations in a field (total of 100 plants). Record the percent of plants with shot-holing damage, and by unrolling several damaged whorls at each site and counting the live borers, calculate the average number of live borers per damaged plant. This will help you estimate the maximum number of borers that might survive to enter the stalk. Remember that mortality of young borers is normally high; if possible, avoid making a treatment decision until larvae are second instar or older. However, don't wait until larvae have left the whorl and bored into the stalk, as they are not controllable then.

To make a treatment decision for first generation European corn borers, consider the average percent of damaged whorls, average number of live larvae per damaged plant, cost per acre of insecticide including application costs, anticipated yield (in bushels per acre), anticipated corn value

(dollars per bushel), and estimated percent control from insecticide application. Enter this information into the worksheet below. If preventable loss (5) exceeds treatment costs (6) you may benefit from an insecticide application for first generation corn borer.

| Borer Treatment Worksheet  |          | Your Field |
|--|----------|------------|
|  | Example  | _____      |
| 1. Yield potential (bu/acre) for this field  | 125      | _____      |
| 2. Number of live larvae/plant =<br>Average number live larvae/plant<br>x average percent damaged plants<br>(4 larvae/plant x 50% damaged plants = 2 larvae/plant) | 2        | _____      |
| 3. Potential yield loss<br>(2 larvae/plant x 5% loss/larva<br>= 10% yield loss; 10% x 125 bu.<br>= 12.5 bu/acre)   | 12.5     | _____      |
| 4. Dollar loss/acre<br>(12.5 bu/acre x \$2.50/bu<br>=\$31.25 loss/acre)  | \$ 31.25 | _____      |
| 5. Preventable loss/acre<br>(assume insecticide is<br>75% effective*)<br>(31.25 x 75% = \$23.44)   | \$ 23.44 | _____      |
| 6. Treatment costs/acre<br>Insecticide cost +<br>application cost<br>(8 + 4 = 12)  | \$ 12.00 | _____      |
| 7. Compare preventable loss (5)<br>with treatment costs (6)<br>(23.44 - 12.00 = 11.44<br>= \$/acre saved by treatment)   | \$ 11.44 | _____      |
| _____  |          |            |
| *A 75% control is a good average estimate of the control achieved with insecticides for first generation borers. You may use other estimates.                      |          |            |

The following insecticides are recommended for controlling first-generation European corn borers in Nebraska: Dipel 10G, ES; Furadan 15G, Lorsban 15G, 4E; diazinon 14G; Dyfonate II 20G; Pennncap-M; Pounce 3.2EC, 1.5G; and Ambush 2E, 25W. With the exception of formulations of Dipel, Lorsban and diazinon, all are restricted use pesticides. The following may be applied through sprinkler irrigation systems: Dipel ES, Lorsban 4E, Pennncap-M, Pounce 3.2 EC, and Ambush 2E and 25W.

Research shows that the first generation of borers are best controlled with granular formulations or by application through sprinkler irrigation systems. These methods provide the best penetration into the whorl where corn borer larvae

feed. Refer to *EC 90-1509: Field Crop Insect Control Guide for Nebraska Corn and Sorghum*, for a complete list of insecticide rates and restrictions.

For more information on the biology and management of the European Corn Borer, see *NebGuide G75-217: European Corn Borer*, and a newly revised regional Extension bulletin, *NCR 327: European Corn Borer Development and Management*. The NCR publication, available for \$3, also includes an illustrated key to caterpillars commonly found in corn. These publications can be ordered from the Department of Agricultural Communications, 105 Ag. Comm. Bldg., University of Nebraska-Lincoln, 68583-0918.

Bob Wright

## After Applying Insecticides, Wait Before Re-entering

We often are asked about how long someone should wait before entering fields treated with insecticides. The following list provides the re-entry times for some common insecticides. Also check the pesticide label for the re-entry period. Always follow label directions and do not enter fields after treatment until the re-entry period has passed.

|                 |  |
|-----------------|--|
| Ambush 2E       | — When spray is dry                              |
| Asana 1.9EC     | — When spray is dry                              |
| Comite 6.5EC    | — When spray is dry                              |
| Counter 15G     | — 7 days (foliar)<br>— After dust settles (soil) |
| Cygon 400       | — 4 days   |
| Diazinon AG500  | — When spray is dry                              |
| Diazinon 14G    | — After dust settles                             |
| Dipel 10G, ES   | — When dust settles or spray is dry              |
| Di-Syston       |  |
| 8EC, 15G        | — 24 hrs   |
| Dyfonate II 20G | — 24 hrs (foliar)<br>— After dust settles (soil) |
| 4EC             | — 24 hrs   |
| Dylox 80S       | — When spray is dry                              |
| EPN 5EC         | — 24 hrs   |

|                 |   |
|-----------------|---|
| Force 1.5 G     | — None stated on label  |
| Furadan 15G     | — None stated on label  |
| Furadan 4F      | — 24 hrs (limited activity in fields)<br>— 14 days (prolonged activity in fields) |
| Guthion 50WP    | — 24 hrs  |
| Imidan 50WP     | — When spray is dry   |
| Lannate         |   |
| 1.8L, 90S       | — When spray is dry   |
| Larvin 3.2F     | — When spray is dry   |
| Lorsban 4E      | — 24 hrs  |
| 15G             | — None stated on label  |
| Malathion EC    | — When spray is dry   |
| Metasystox-R 2E | — 48 hrs  |
| Parathion       |   |
| ethyl & methyl  | — 48 hrs  |
| Pennncap-M      | — 48 hrs  |
| Pounce 3.2EC    | — When spray is dry   |
| Pydrin 2.4EC    | — When spray is dry   |
| Sevin,          |   |
| all formulas    | — When spray is dry   |
| Thimet 20G      | — 7 days (foliar)<br>— After dust settles (soil)                                  |

Bob Wright

## WEED SCIENCE

### Consider Whole Field When Choosing Herbicide

Crop growth stage restrictions are an important consideration when choosing a postemergence herbicide for use in sorghum. This year's uneven stands complicate the situation. Gauge treatments based on how the majority of the field develops. Earlier applications may allow lower rates, better coverage, and more effective weed control. Do not cultivate for five days before or after a herbicide application.

Laddok at 2.4 pints per acre plus either oil concentrate or UAN effectively controls 2-4 inch broadleaf weeds and

can be applied until sorghum heads. A 3.5 pint rate will control taller weeds and help suppress yellow nutsedge and field bindweed.

Atrazine 90 DF can be applied to completely emerged sorghum at a rate of 2.2 to 3.3 pounds per acre with water as the carrier to control grass and broadleaf weeds less than 1.5 inches tall. A rate of 1.3 pounds per acre plus oil concentrate also can be used to control broadleaf weeds 4 inches tall after the sorghum has reached the three-leaf stage.

**Buctril** applications at 1 pint per acre alone or with 0.5 to 1.2 pounds ai atrazine should be delayed until the sorghum plant is in the third-leaf stage. When using the 1.5 pint rate of Buctril, delay application until the fourth-leaf stage. Buctril applications can be made up to the boot stage.

**Banvel** applications at 0.5 pints per acre alone or with 0.5 to 1.25 pounds ai of atrazine should also be delayed until the sorghum is in the third-leaf stage. Banvel can be applied

to sorghum up to 15 inches tall. Use drop nozzles if the sorghum is over 8 inches tall.

**2,4-D amine** at 1 pint per acre or **2,4-D ester** at 0.75 to 1.25 pint per acre can be used on 6- to 15-inch sorghum. Use the 1.25 pints per acre rate of 2,4-D ester for perennial broadleaf weeds. Use drop nozzles if the sorghum is over 8 inches.

**Bob Stougaard and Alex Martin**

## Replant Options After Herbicide Use

Recent damage from flooding, hail, chinch bugs and other sources may cause farmers to replant crops. If corn or sorghum herbicides already have been applied,

what planting options are available? The table below lists the replant options for various herbicides with a time delay required between application and planting.

**Alex Martin and Bob Stougaard**

| Herbicide         | Replant Crops          | Time Delay                        |
|-------------------|------------------------|-----------------------------------|
| Atrazine          | Millet                 | None                              |
|                   | Sorghum                | None                              |
| Banvel            | Sorghum                | 14-30 days<br>(depending on rate) |
| Bicep             | Sorghum (safened seed) | None                              |
| Bladex            | Sorghum                | 14-30 days                        |
| Buctril           | Sorghum                | None                              |
| Bullet            | Sorghum                | None                              |
| Dual              | Sorghum (safened seed) | None                              |
|                   | Soybeans               | None                              |
| Eradicane         | Sorghum                | 30 days                           |
|                   | Soybeans               | 10-14 days                        |
| Extrazine         | Sorghum                | 14-30 days<br>(depending on rate) |
| Laddok            | Sorghum                | None                              |
| Lariat            | Soybean                | None                              |
| Lasso             | Sorghum (safened seed) | None                              |
|                   | Soybeans               | None                              |
| Lorox             | Soybeans               | None                              |
|                   | Sorghum                | 14 days                           |
| Marksman          | Sorghum                | 30 days                           |
| Princep           | Only Corn              | None                              |
| Prowl             | Soybeans               | None                              |
|                   | Sunflower              | None                              |
| Ramrod            | Sorghum                | None                              |
|                   | Soybeans               | None                              |
| Ramrod & Atrazine | Sorghum                | None                              |
| Sutan+            | Sorghum                | 30 days                           |
|                   | Soybeans               | 10-14 days                        |
| Sutazine          | Sorghum                | 30 days                           |
| Treflan           | Soybeans               | None                              |
|                   | Sunflower              | None                              |
|                   | Sorghum                | 30 days                           |

# PLANT DISEASE

## Dutch Elm Disease Evident Across State

As you drive along Nebraska's highways or through many of its small towns, you'll notice many large old elms suffering a decline or even death. Many times the cause is Dutch elm disease. For the past two weeks, strong symptoms of Dutch elm disease have been painfully evident: wilting, curling and yellowing leaves on one or more branches; browning or premature falling of leaves; and extensive branch death.

A closer examination of small, individual branches will reveal additional symptoms. Select a branch that is still alive, but whose leaves are wilted and off-color (yellow). Peel or cut through the bark to expose the sapwood. Brown streaking develops in the sapwood of trees with Dutch elm disease. It appears mostly in the springwood of the current-

season growth. In a cross section cut through the branch, browning may show up as a series of dots in a single wood ring; or the dots may be so abundant that the entire wood ring appears brown. The presence of brown discoloration (streaks or dots) in the vascular system (sapwood) is used as a field diagnostic symptom of Dutch elm disease.

Control of Dutch elm disease refers both to preventing new infections and to enhancing the possibility of recovery. In most instances, these measures are costly, time-consuming, and must be tailored to fit a particular situation. If you have questions about preventing or treating Dutch elm disease, contact your local Extension agent.

David S. Wysong

## Wheat Rust Becoming Epidemic

Wheat leaf rust dramatically increased within the last 10 days due to an abundance of fungus inoculum and continued wet weather. The rust is likely to cause losses in yields and test weight because it is occurring during the grain filling period. Leaf rust can be diagnosed by the orange pustules on the leaves. It is too late to apply a fungicide, so growers with rust susceptible varieties will have to just ride this one out. Growers whose fields were treated earlier for powdery mildew may have some rusting in their wheat, but the amount of rust should not have a serious impact on yield or test weight.

John E. Watkins

## Oats Still Show Barley Yellow Dwarf

Many oat fields throughout the state are showing symptoms of severe yellow dwarf. Disease severity ranges from severe in susceptible oat varieties to light in tolerant oat varieties. Diseased plants often are stunted and show the red leaf symptom. Combined with the recent hot, windy weather, oat fields severely infected with barley yellow dwarf are likely to have reduced yields and lower test weights. In these situations, growers may want to consider cutting the oats for hay.

John E. Watkins

## New Compendium Published For Apple/Pear Diseases

Serious apple growers, whether homeowners or orchardists, now have a disease sourcebook similar to those published for many field crop, ornamental, and turfgrass diseases. The American Phytopathological Society has recently printed the "Compendium of Apple and Pear Diseases."

The book's format is similar to the earlier compendia: problem descriptions include information on the geographical distribution and relative importance of each disease. Symptoms are described and brief accounts of the disease cycle and epidemiology of the causal agents and their control are given. The text is accompanied by 170 color photos and 26 black and white illustrations. I highly recommend this compendium for University Extension personnel and anyone who routinely works with apples or pears.

The price before June 30 is \$17; the regular price on orders received after that is \$20. To order this or any other compendia in the series, call 800-328-7560 from 8 a.m. to 4 p.m. Monday through Friday or write:

The American Phytopathological Society  
3340 Pilot Knob Road  
St. Paul, MN 55121.

David S. Wysong

## *Wheat Dying Prematurely*

The Plant Disease Diagnostic Clinic has received several wheat samples where the plants have died prematurely. Some are infected with a disease called take-all which can be identified by the shiny-black discoloration of the lower stem and crown. Others appear to be infected with sharp eyespot, eyespot, or dryland foot rot. Nothing can correct the problem. Infected plants are showing symptoms now because of the recent hot, windy weather. The injured root systems cannot support continued plant growth, and as a result, affected plants die prematurely.

**John E. Watkins**

## **For More Information**

The following new or revised publications were recently released by the University of Nebraska Department of Agricultural Communications:

**G90-974 The Bean Leaf Beetle in Soybeans:** Treatment guidelines, identifications and sampling for the bean leaf beetle are covered.

**G90-981: Using the Line-transect Method to Estimate Percent Residue Cover.** This NebGuide describes how to use the line-transect method to estimate the percentage of crop residue cover on the soil surface.

**G90-983: Equipment Adjustments for Herbicide Incorporation.** This NebGuide discusses how to operate liquid herbicide application equipment on tillage implements.

These publications and many more are available free or at a nominal charge at your local Extension office or from the UNL Department of Agricultural Communications. For a Publications Catalog, contact your local Extension office or write Bulletins, 105 Ag. Communications Bldg., University of Nebraska, Lincoln, NE 68583-0918.

## *IPW News Contributors*

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**Lisa Brown Jasa, Editor**

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