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# INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-10] [May 25,1990]

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Insect
Plant Disease
Weed Science NEWS

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

No. 90-10 May 25, 1990

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# *WEED SCIENCE*

## Take Precautions to Limit Herbicide Drift

Herbicide injury problems from drift and volatility occur each year, but this spring the situation may be worse. Wet fields have delayed planting and backed up the work load. As a result, many farmers may rely more on postemergence weed control than on preplant incorporated treatments. In addition, because time is short, many treatments may be applied under less than ideal conditions. Our office already has received several calls regarding drift complaints. It is important to minimize off-target pesticide movement of farm chemicals as well as turfgrass herbicides.

Herbicide drift is caused by several factors, some of which are easier to control than others. Environmental factors such as wind, air temperature and temperature inversions often are the most important. Try to apply chemicals when wind speeds are low, preferably below 10 mph, and air temperatures are low (75 degrees). Volatile herbicides have a greater potential for causing injury as air and soil temperatures increase. Injury is also greater under conditions of high relative humidity.

Temperature inversions are another environmental concern. Applying a pesticide during a temperature inversion can result in significant off-target pesticide movement. Inversions usually occur early in the morning or late in the afternoon when cool air near the soil surface is trapped under a layer of warmer air. The applied pesticide can be suspended in the warm air layers where it is more susceptible to displacement by wind movement. Use a small fire or smoke bomb to detect an inversion. Smoke moving horizontally close to the ground signals an inversion and chemicals should not be applied.

Application techniques can be adjusted to minimize spray drift and are more easily controlled than environmental conditions. Keep the spray as close to the target weeds as possible. The higher the spray is released above the target, the more likely it is to move to non-target plants. Use non-volatile herbicide formulations when available and keep spray pressures low. The lower the pressure, the larger the spray droplets, and the less likelihood of drift. Nozzle types and spray additives also are available to reduce the number of fine droplets and thus drift. Leave an untreated border strip next to susceptible plants.

**Bob Stougaard and Alex Martin**

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

Cooperative Extension provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.

# *Options Suggested for Postemergence Weed Control*

Several herbicide treatments are available for postemergence weed control in corn.

**Grasses.** To control escaped grasses, atrazine with oil should be applied when the grass is less than 1.5". Bladex 80W, 90DF or Extrazine II also can be used, but should not be applied with oil or if the corn is past the four-leaf stage. Tandem in combination with Bladex or atrazine increases postemergence activity. If atrazine has already been used as a soil application, be aware of potential carryover problems. If Bladex has already been used as a soil application, do not exceed the maximum labeled rate for your soil type. Prowl plus atrazine (Prozine) or Prowl + Bladex can be applied up to the four-leaf stage of corn.

**Broadleaf Weeds.** The atrazine, Bladex, and Extrazine II treatments for annual grass control also will control broadleaf weeds in corn. Buctril or Buctril plus atrazine should be applied to corn in the three-leaf stage or taller. 2,4-D can be applied after the corn emerges but before it is 8". To avoid injury once corn is taller than 8", use drop nozzles and keep the spray out of the corn whorl. Banvel at one pint or Banvel plus atrazine (Marksman) should be applied before the corn exceeds the five-leaf stage. Banvel at 0.5 pint can be used before the corn is 24". Avoid using 2,4-D or Banvel near sensitive crops. Basagran plus atrazine (Laddok) can be used to control nutsedge as well as broadleaf weeds up to 8".

Except with Laddok, liquid fertilizer should not be used with these herbicides on emerged corn because the crop may be injured. Contact your seed corn dealer to learn whether your hybrid is susceptible to the herbicide you plan to use.

**Shattercane.** Postemergence control of shattercane in corn received a boost with the recent labeling of Beacon. It is an effective treatment to control emerged shattercane. Beacon should be used before shattercane exceeds 6" to avoid corn yield loss from early season competition. Certain restrictions apply to the use of Beacon after some insecticides; details are on the label. The supply of Beacon will be limited so growers may consider band applications and spot treatment to cover more acres.

The performance of other postemergence shattercane treatments is much less successful. Bladex 80W or 90DF used with a vegetable oil or surfactant can be applied before corn exceeds the four-leaf stage. The Bladex label does not claim shattercane control. Our observations are that this treatment stunts but may not kill small shattercane plants. Similar results may be obtained with two quarts per acre of atrazine used with crop oil concentrate. Tandem used with Bladex or atrazine will improve activity. Similarly, Prowl used with Bladex or atrazine before the five-leaf stage of corn improves activity compared to the triazine alone. While these treatments don't kill the shattercane, they set it back and allow the corn to grow ahead of the cane. Effective control can then be obtained through cultivation.

Prowl and Treflan can be used postemergence in corn to control **unemerged** shattercane. Incorporation with irrigation or rainfall or cultivation is required. Evik and Gramoxone Super can be usedas a **directed** postemergence treatment to control emerged shattercane.

**Bob Stougaard and Alex Martin**

# *PLANT DISEASE*

## Foliar Disease Pressure Increasing on Wheat

**Tan spot, leaf rust** and **powdery mildew** are developing throughout the state. Cool, wet, cloudy weather has been ideal for disease growth. These conditions also can create a potential for scab development if they occur during flowering. Growers should be aware of the situation and continue to scout their fields.

It is also important to read and follow label directions on all fungicides used on wheat. Remember these restrictions:

- Do not apply Tilt after the flag leaf has emerged.
- Do not make the final Bayleton application within 21 days of harvest.
- Do not apply Mancozeb within 26 days of harvest.

Failure to adhere to these restrictions may result in illegal residues.

**Luanne V. Coziahr**

# Diagnostic Clinic Accepting Plant Disease Samples

May showers have promoted the onset of many kinds of plant diseases across Nebraska. Fortunately, local Extension staffs and the UNL Plant Disease Diagnostic Clinic are ready to help you solve plant disease problems. The Clinic is open 8:00 a.m. to 4:00 p.m. Monday through Friday. Samples of diseased plants can be mailed or taken to:

Plant Disease Diagnostic Clinic
448 Plant Sciences Hall
University of Nebraska
Lincoln, NE 68583-0722

All samples are examined and diagnosed and recommendations for appropriate control and/or management strategies are made.

Please remember to check with your local county extension office before sending samples. Agents and assistants usually can answer your questions and save valuable time. If they cannot answer your questions, they can assist in collecting and packaging the sample for submission to the Clinic.

Clinic personnel strive to provide accurate diagnoses and appropriate recommendations as quickly as possible. It is critical to have samples in good condition and adequate information about them. When submitting a sample:

1) Send ample materials. One leaf is not enough.

2) Send samples showing representative symptoms and various stages of those symptoms. Dead plants are difficult to work with because secondary organisms hide original symptoms.

3) Do not add moisture to the sample. Excess moisture encourages decay.

4) Send whole plants (including roots) whenever possible. Above-ground symptoms may be caused by below-ground problems.

5) Send samples so they arrive as quickly as possible and do not send them late in the week. Hold samples in the refrigerator until they can be properly sent.

6) Always include written information concerning: when and where the sample was collected, description of symptoms, location, general history and care.

**Luanne V. Coziahr**

## *Use Fungicides To Control Strawberry Gray Mold*

The most effective control of strawberry gray mold is to apply fungicides during bloom, according to research at Cornell University. Gray mold develops when the Botrytis fungus establishes itself on old or damaged flower parts and then grows into the berry as it ripens. The Cornell study recommended spraying Ronilan or Rovral at 20% bloom, with a repeat application about 10 days later. Delay (or omit) the second spray during long dry periods, or reduce the interval between applications to seven days if weather is excessively wet and warm.

While spraying may be necessary to control gray mold and obtain maximum yields, don't underestimate the importance of cultural practices for managing the disease. Practices that promote good air circulation around the berries -- particularly good weed control and avoidance of high nitrogen (too much leaf growth) -- always complement, and sometimes can substitute for, fungicide sprays.

**David S. Wysong**

## For More Information

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

**G90-978: Byproduct Feedstuffs for Beef and Dairy Cattle.** This NebGuide details the byproduct feedstuffs available for beef and dairy cattle, a description of their characteristics and discussion of their nutrient value.

**G90-987: Colostrum Quality and Absorption in Baby Calves.** This NebGuide explains the importance of early feeding of high quality colostrum to the newborn calf.

Recently reprinted was:

**G75-265: How Professional Farm Managers Serve.** This NebGuide discusses things to consider when hiring a farm manager.

These publications and many more are available free or for 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, 104 ACB, University of Nebraska, Lincoln, NE 68583-0918.

# INSECT SCIENCE

## How to Decide When to Treat Alfalfa Pests

Researchers at Iowa State University have developed a method for determining when alfalfa stubble should be treated for insect damage when regrowth is not occurring normally. During the past several years, alfalfa weevils, clover leaf weevils, and variegated cutworms have damaged regrowth after first harvest in Nebraska and neighboring states. It's too early to be sure, but we may have this problem again this season.

It has not always been clear when treatment is justified. The Iowa research indicates that complete defoliation for up to three days after cutting will not significantly affect regrowth. However, complete defoliation for seven to 11 days will delay plant development and reduce yield and quality in subsequent cuttings. The following worksheet can be used to help growers decide how to handle these situations. It helps them calculate the number of days that complete defoliation can be tolerated before an insecticide application is feasible. The number of days will vary, depending on the cost of the insecticide treatment, value of the hay, and whether the hay is cut at first bloom or on a 28-day harvest schedule. This method can be used for any defoliating insect or group of insects, including weevils and variegated cutworms.

**Alfalfa Stubble Threshold Calculation**

| Factors | Example | Your Field |
|---|---|---|
| A. Insecticide plus application cost (Dollars per acre) | $7.00 | _____ |
| B. Value of hay (dollars per ton) | $100.00 | _____ |
| C. Loss factor (1st-bloom harvest = 0.0198; 28-day harvest = 0.0345) | 0.0198 | _____ |
| D. Days of **complete** defoliation that can be tolerated | 3.5 | _____ |

To estimate **D**, multiply **B** times **C** and divide into **A**.
For example: **D=A/(BxC)** = 7.00/(100x0.0198) = 7.00/1.98 = 3.5 days.

**Steve Danielson**

## *Repellent May Cause Adverse Effects*

Increasing public concern over Lyme disease and other arthropod-borne illnesses has resulted in substantial increases in the use of insect repellents. The most widely used of these products (e.g. Off, Cutters, Ben's) contain the chemical repellent N,N-diethyl-m-toluamide or DEET. According to the EPA, a few people have reported having adverse reactions after using repellents with DEET (fewer than 10 cases out of the 50-100 million people using DEET annually). Consequently, public health officials believe that "a small segment of the population may be sensitive to DEET". Reactions have included headaches, mood changes (crying, irritability), confusion and nausea, and in severe cases, muscle spasms, convulsions or unconsciousness. Most of the adverse reactions, however, appear to have involved accidental exposure such as ingestion or spraying into the eyes.

While the EPA is <u>not</u> suggesting that individuals discontinue using products containing DEET (as in most cases the benefits far outweigh the potential risks), they feel it is important that consumers be aware of possible adverse reactions, be familiar with the symptoms and know how to respond appropriately.

The EPA suggests the following guidelines for using insect repellents:

Use the product only as directed on the label. Do not use under clothing.

Never apply over cuts, wounds or irritated skin and do not apply to/near eyes and mouth. In the case of young children, do not apply to hands.

Do not make frequent reapplication in excess of what is directed by the product label; saturation is not necessary.

After returning indoors, wash treated skin with soap and water and remove treated clothing.

If an adverse reaction is suspected, wash the treated skin and call your local poison control center. In Nebraska, call 800-955-9119. If you seek medical help, take the repellent with you.

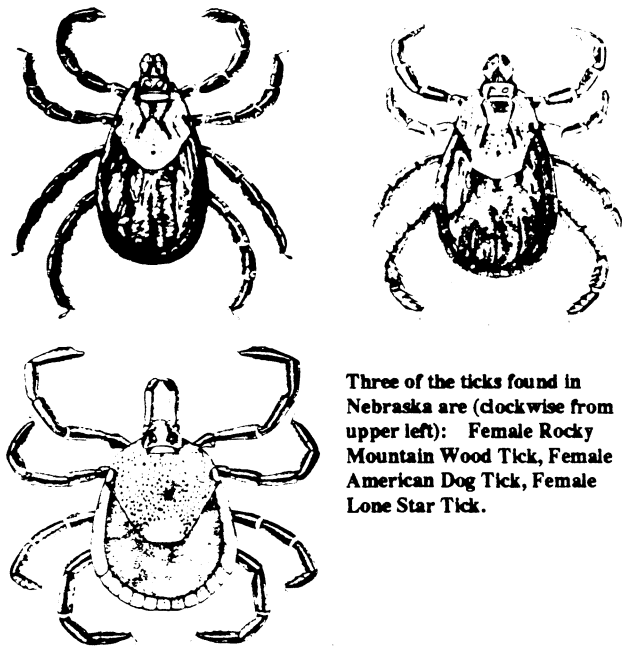
**Fred Baxendale**

# *Limit Tick Exposure, Potential for Disease*

With the tick season upon us, it is important to take special precautions to protect ourselves and our pets from these pests and to be alert to symptoms of tick-borne diseases. The four tick species important in Nebraska are: The brown dog tick which feeds primarily on dogs and rarely attacks humans; the Rocky Mountain spotted fever tick which is found in northwest Nebraska; the American dog or "wood" tick which is most common in Nebraska and found throughout the state; and the lone star tick which may be found in southern Nebraska. Ticks are typically found in wooded, brushy or grassy areas that harbor field mice, rabbits and other small mammals.

Two tick-borne illnesses causing concern are Lyme Disease and Rocky Mountain Spotted Fever. Lyme disease has been confirmed in 44 states with 90% of the cases occurring in eight states: California, Connecticut, Massachusetts, Minnesota, New Jersey, New York, Rhode Island and Wisconsin. Lyme disease is primarily vectored by the deer tick, a species not known to occur in Nebraska. It also can be transmitted by the lone star tick. Nebraskans living where the lone star tick is present — primarily an area south and east of a line from the Harlan County Reservoir to Omaha -- are at a slight risk of contracting the disease. However, because the lone star tick is a poor vector of Lyme disease it is unlikely that such cases will be widespread in Nebraska.

Because Lyme disease is epidemic in some locations, Nebraskans traveling to the eight states mentioned above should be aware of the disease and its symptoms. Lyme disease is caused by a spiral-shaped bacterium which is transmitted to humans by ticks during the blood-feeding process.



**Three of the ticks found in Nebraska are (clockwise from upper left): Female Rocky Mountain Wood Tick, Female American Dog Tick, Female Lone Star Tick.**

The disease typically begins as a red rash which expands out from the tick bite in concentric circles producing a "bull's-eye" effect. Later, flu-like symptoms, including headache, fever, chills, joint and muscle pain and general lethargy, may appear. In advanced, untreated cases, there may be arthritis-like symptoms (referred to as Lyme arthritis), particularly in the knees and shoulders, as well as cardiac abnormalities. In most cases, antibiotics have provided effective treatment.

Rocky Mountain spotted fever is another tick-borne illness. The wood tick, lone star tick and Rocky Mountain spotted fever tick all can serve as vectors for Rocky Mountain spotted fever. Symptoms begin abruptly three to 14 days after someone is bitten by an infected tick and include moderate to high fever, chills, severe headache, and muscle or joint pains. The victim also may experience nausea and vomiting, cramps, sore throat and sensitivity to light. These symptoms usually are followed by a rash which first appears on the extremities and then spreads to the rest of the body. While Rocky Mountain spotted fever is not common in Nebraska (typically three to six cases are reported annually), it can lead to serious complications or even death if left untreated.

Reduce exposure to ticks by using one or more of following practices:

- **Cultural:** Keep grassy and weedy areas trimmed to reduce harborage for tick hosts such as field mice and other small mammals.

## Get the Facts on Lyme Disease

The Nebraska Department of Health and Nebraska Game and Parks Commission recently published an excellent brochure entitled Lyme Disease: Information for Nebraskans. This publication contains information on the transmission, signs, symptoms, detection and treatment of the disease. The brochure also contains a section answering commonly asked questions. It is well-illustrated with pictures, graphs and charts. For a free brochure, write the Nebraska Department of Health, 301 Centennial Mall South, Lincoln, NE 68509 or Nebraska Game & Parks Commission, 2200 No. 33rd. Street, Lincoln, NE 68503.

**Fred Baxendale**

• **Avoidance:** Whenever possible, stay out of tick-infested areas.

• **Proper clothing:** When entering tick-infested areas, wear long-sleeved shirts and long trousers with tight-fitting cuffs.

• **Repellents:** Use an insect repellent containing the active ingredient diethyl toluamide (DEET). Apply to clothing and areas of exposed skin such as hands, wrists, ankles and neck. **Note:** Refer to the article on page 62 for precautions on using insect repellents.

• **Personal Inspection:** Because ticks may take up to a day to attach and feed, the risk of disease transmission is reduced by frequent inspection and prompt removal. When returning from an outing, carefully check yourself and your family for ticks. Ticks tend to concentrate on the head, shoulders, neck and in ear canals. Remove embedded ticks with forcepsby gripping the tick carefully at the point of attachment and pulling upward in a slow but firm manner. Care should be taken when removing ticks from pets or humans to insure that the entire tick is removed from the skin (the head often breaks off). After removal, wash the wound with soap and water and apply alcohol or some other disinfectant to help prevent infection. Save the tick in a jar labelled with the date and location where the tick was acquired. In the unlikely event a problem develops, this can be important information for the doctor.

• **Insecticides:** Reduce tick problems around the oustide of the house by using residual insecticides (acaricides) such as carbaryl (Sevin), chlorpyrifos (Dursban) and diazinon. Follow label instructions. For tick control on pets, use only approved formulations, available in pet supply stores or from a veterinarian.

**Fred Baxendale**

## Correction to Insect Guide

The rate listed on page 7 of EC 90-1509, *Field Crop Insect Control Guide for Nebraska Corn and Sorghum*, for Dyfonate II 20G used in field corn, popcorn and sweet corn should be **6 ounces per 1000 row-foot.** Dyfonate II 20G is manufactured by ICI Americas, Inc. Please correct this error in your copies of this publication.

**Bob Wright**

## *We'll Be Back*

There will be no Insect, Plant Disease, and Weed Science News issued June 1. The next issue will be June 8. We wish you a happy and safe Memorial Day.


## *IPW News Contributors*

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