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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-11] [June 8,1990]

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Insect Plant Disease Weed Science NEWS

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

No. 90-11

June 8, 1990

In This Issue

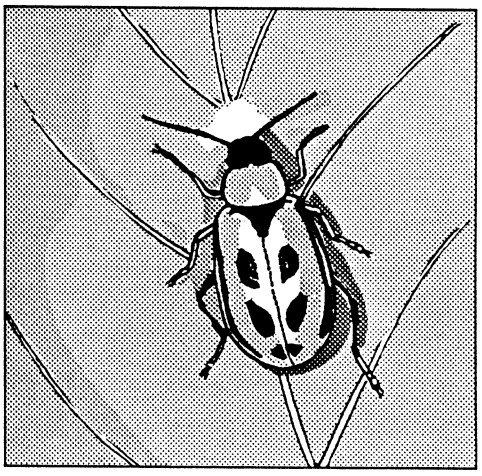
INSECT SCIENCE

Bean Leaf Beetles Move to Early Soybeans

Bean leaf beetles emerged from hibernation during May and began feeding in alfalfa, clover or wild legumes and will begin moving into soybeans. Early emerging soybean fields will attract bean leaf beetles from surrounding areas and may be heavily damaged if there are few other emerged soybean fields in an area.

Bean leaf beetles are 1/4 inch long and vary in color from yellow to tan to red. They have a black triangle behind the head and a black border on the outside margin of each wing cover. They usually have two black spots on each wing cover.

Check early-emerging soybean fields for bean leaf beetles and their damage. Beetles will feed on cotyledons as well as the emerging first pair of true leaves. Although the soybean plant can withstand a great deal of defoliation (40-50%) without yield loss after the first true leaves emerge, heavy damage to the cotyledons or the growing point may cause serious damage. Treatment may be warranted if beetles are causing damage resulting in one cotyledon destroyed per row-foot or defoliation reaching 50%.



Many insecticides are available for bean leaf beetle control on soybeans. See EC 90-1511, *Field Crop Insect Management Guide for Nebraska — Alfalfa, Soybeans, Small Grains, Range and Pasture*, for information on specific rates and restrictions.

Bob Wright

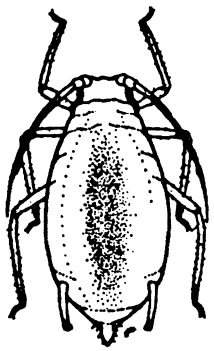
Species Identification Important to Aphid Control

Large numbers of aphids are being reported in some fields of wheat, oats and other small grains in the eastern half of Nebraska.

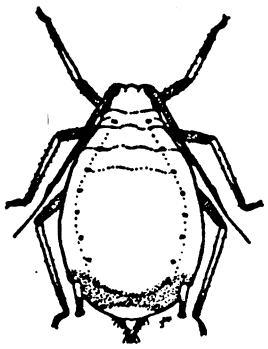
Several species of aphids occur in Nebraska small grains. It is important to identify which aphid is present to determine the potential for damage. Reports indicate the oat/bird cherry aphids are common in eastern Nebraska, with greenbugs being cited in lower numbers.

Mature oat/bird cherry aphids are olive green with a reddish-orange area at the base of the cornicles ("tail-pipes"). The tips of cornicles, legs and antennae are black. The oat/bird cherry aphid is not likely to cause significant yield loss in wheat. North Dakota entomologists suggest insecticidal control on small grains when these aphids average 50 per stem in the boot to heading stages of growth. Although greenbugs can cause more damage since they inject a salivary toxin when they feed, reports indicate that they are being found in low numbers. Greenbugs are light green and have a dark green stripe down the middle of the back. Tips of legs, cornicles and most of the antennae are black. Kansas entomologists recommend treatment in wheat if 300-500 greenbugs are found per row-foot on 6-10" wheat. We would expect that higher levels would be needed to cause damage on the later growth stages now present.

Normally aphids are controlled by a variety of natural enemies, including lady beetles, syrphid flies, and parasitic wasps. Under moist conditions, a fungal disease may reduce their numbers.



Greenbug



Oat/bird cherry aphid

Growers in the western half of Nebraska should watch for Russian wheat aphids. For information on Russian wheat aphid management, see previous IPW News articles (90-3, 90-4, 90-7). Additional information on wheat aphids can be found in NebGuide G73-49, *Aphids in Wheat,* NebGuide G87-853, *Russian Wheat Aphid,* and EC 90-1511, *Field Crop Insect Management Guide for Nebraska — Alfalfa, Soybeans, Small Grains, Range and Pasture.* These are available from your local Extension office or the UNL Department of Agricultural Communications.

Bob Wright

Status of Pesticides Clarified

There has been some confusion concerning the status of dimethoate (Cygon), lindane, strychnine, creosote, pentachlorophenol and inorganic arsenicals. These pesticides are still available and registered by the Environmental Protection Agency (EPA) for the following uses:

dimethoate (Cygon)	— alfalfa, field corn, sorghum, soybeans, wheat, apples, cabbage, tomatoes, broccoli, beans and ornamentals
lindane	— structural use, seed treatment, ornamentals, Christmas trees and forestry, lice and mange
strychnine	— ground squirrels, woodchucks, porcupines, pigeons and house sparrows
creosote	— wood preservative
pentachlorophenol	— wood preservative
inorganic aresenicals	— wood preservative

Before using these pesticides, please confirm the Nebraska registration status and read and follow label directions.

Shripat T. Kamble
Extension Specialist-Pesticide Impact Assessment

Clean Equipment Key to Quality Grain Storage

Careful preparation of grain harvesting, handling, and storage equipment is essential for maintaining high quality in wheat storage. Following a few basic procedures will help insure successful storage of newly harvested grain. Always clean combines, truck beds, augers and other equipment used for harvesting and transporting the wheat. Thoroughly clean bins before storing newly harvested grain. Remove all old wheat with brooms, brushes and vacuum cleaners. **Never put new wheat on top of old wheat.** Treat interior surfaces of the cleaned bin with premium grade malathion, methoxychlor, or Reldan at least two weeks before storing wheat. Wear an appropriate respirator to avoid breathing fumes, eye protection to prevent insecticide from splashing into eyes, and clothing which minimizes skin contact.

In many instances, it is impossible to clean and spray under perforated drying floors. In these cases, remove as much of the debris as possible, then fumigate the empty bin with chloropicrin. Remember that fumigation has no residual activity and will not control insects later in the season. Note: Chloropicrin is a restricted use pesticide and is extremely toxic.

Always store wheat with a moisture content of 12% or less to help reduce insect activity. Consider applying a grain protectant while the wheat is being augered into the bin. Apply either premium grade malathion or Reldan (liquid or dust). After leveling the wheat, topdress the surface with either Dipel and malathion, or Reldan. Dipel is effective against Indian meal moths, while malathion controls beetles. Reldan controls both. Work the top dressing into the top 4 to 6 inches of grain. If Indian meal moths have been a problem in the past, Vapona resin strips (one per 1,000 cubic feet of air space) can be placed in the bin overspace. Replace strips as needed — usually about once a month. Finally, it is important to inspect the grain every two to three weeks for evidence of insect activity and other quality degrading factors. For more information on grain storage refer to EC88-1534, *Pest Management of Farm Stored Grain.*

Leroy Peters and Steve Danielson

Watch for Aphids Attacking Ornamentals

A wide variety of trees, shrubs and flowers now have large aphid populations, which have potential for varying degrees of plant damage. Aphids damage plants in three ways: (1) by sucking out plant sap, (2) by injecting toxic saliva, and (3) by transmitting viruses. There are hundreds of aphid species. Most are specific as to the plants they attack and the plant viruses carried, making it often impossible to define a damaging population and determine if treatment is necessary. Numerous insecticides are available for treatment, and when properly applied, are quite effective.

Insecticides used most often to control aphids on outdoors plants are: diazinon, malathion, acephate (Orthene), and dimethoate (Cygon). Acephate and dimethoate are systemics; malathion and diazinon are contacts. Insecticidal soaps and summer oils are effective contact insecticides and also can be used on houseplants. Many insecticides labeled for houseplants contain pyrethrins, acephate, resmethrin or a mixture of these.

When applying insecticides, follow label directions exactly. Phytotoxic response of different varieties varies tremendously. Before implementing widespread treatment, test the insecticide on a plant or two of each variety. If no phytotoxic symptoms are visible within 48 hours, it is probably safe.

Ackland Jones

For More Information

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

EC90-121: Conducting a Prescribed Burn and Prescribed Burning Checklist. This circular is a guide to prescribed burning of grassland with low-volatile fuels.

This publication 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, 104 ACB, University of Nebraska, Lincoln, NE 68583-0918.

Floating Row Covers Exclude Many Garden Pests

Floating row covers can be used in home vegetable gardens to extend the growing season, moderate harsh summer temperatures, and prevent insect attack. They are lightweight, fine-meshed polyester or polypropylene fabric draped loosely over crop rows and anchored to the soil at the edges.

When managed properly, these covers provide effective insect control for many garden crops. The small mesh size virtually excludes all insect pests that are the size of aphids or larger. For best results, insect pests should not be under the cover when it is installed, and the fabric must be intact and free of tears.

To reduce the possibility of overwintering pests emerging from ground litter or soil beneath row covers, till the garden before planting or rotate crops and spread the cover over as narrow a band of soil surface as possible. The greatest advantage to floating row covers is protecting crops from pests that originate outside the garden, such as cucumber beetles, bean leaf beetles, armyworms, cabbageworms, cabbage loopers, leafhoppers, most aphids, white flies, squash bugs and grasshoppers. For crops that require insect pollination (squash, cucumbers, melons, raspberries, blueberries) or that may benefit from insect pollination (eggplants, lima beans, okra, peppers, strawberries), row covers should be removed when flowering begins.

Fred Baxendale

PLANT DISEASE

Recent Wet Weather May Increase Wheat Diseases

The continued cool, wet weather could lead to problems with scab and black chaff diseases in winter wheat. An epidemic of scab (head blight) occurred in Nebraska in the early 1980's and caused considerable crop loss. We are experiencing similar weather conditions this year as we did during the 1982 epidemic.

Scab is caused by several species of the *Fusarium* fungus. Infection occurs during extended periods of cool, wet weather when the wheat is flowering. After infection, symptoms develop in three to five days. Symptoms include brown or tan spikelets occurring before normal maturation and a salmon-colored ring at the base of or extending along the margins of glumes. Infection of the developing grain causes it to appear shrunken and whitish. These kernels often are called tombstone kernels.

Another important aspect of scab is the potential of scab-infected grain to contain a mycotoxin. The two mycotoxins associated with scab are vomitoxin and zearalenone. Vomitoxin causes vomiting in livestock and may be involved in feed refusal in swine. Zearalenone is an estrogenic mycotoxin and may cause infertility. Any suspect grain should be sent to a commercial laboratory for analysis.

Black chaff is caused by a bacterium that survives on and in wheat and barley seed and in crop residue. Although not a major problem in dryland wheat, the disease can be brought on by frequent periods of wet weather. Symptoms on the head are dark-brown interveinal streaks and blotches on the glumes and awns. These symptoms are easily confused with a noninfectious condition called melanism. The disease usually causes minimal losses in Nebraska and poses much less of a threat to the wheat than does scab.

The last head disease that is making its appearance in wheat is loose smut. Smutted heads are easily diagnosed by the presence of dark brown to black, powdery masses of spores that have replaced the kernels in an infected head. Smutted heads usually emerge earlier than healthy heads, and the smut spores are blown to healthy heads with infection occurring during flowering. The smut fungus becomes established in the developing grain which, if planted, will lead to a smutted plant. Avoid using seed obtained from fields with loose smut. If it must be used, treat it with a systemic seed treatment fungicide effective against loose smut.

John E. Watkins

Growers Ask:

When Should You Replant Corn After Floods?

Recent heavy rains left some fields temporarily flooded when corn seedlings were at the four- to six-leaf growth stage. Producers considering whether to replant part of a field are asking themselves: "How long can corn survive flooding conditions?"

Prior to the six-leaf stage, corn can survive only three or four days of outright flooded conditions. Within hours of flooding, most of the soil oxygen is practically eliminated. Root growth and plant respiration slow down while root permeability to water and nutrient uptake decreases. Thus, the corn seedling dies for lack of water and food, although both may be abundantly present. If water drains from the flooded area within a day or two after ponding, plant survival is likely. New leaf growth should appear within three to five days.

Producers also should be aware that saturated soils greatly increase the risk of crazy top disease. Crazy top symptoms are seen later in the growing season, but infection occurs when plants are young and heavy rains cause ponding. Infection can start after 24 hours of flooding. Later, infected plants may exhibit excessive tillering, rolling or twisting of upper leaves and masses of leaf-like structures that replace tassels and ears.

David S. Wysong

Anthracnose Disease Attacking Sycamores

Anthracnose, as evidenced by dying leaves and heavy leaf loss, is being found on sycamore tree samples mailed into the Plant Disease Diagnostic Clinic. Other trees, such as maple and ash, also are showing anthracnose symptoms.

Anthracnose is a general term used to describe several diseases caused by different fungi. These diseases have similar leaf symptoms and fruiting structures and develop under cool, wet conditions. Each fungus is host specific; for example, the anthracnose pathogen on ash will not infect sycamores.

Sycamore anthracnose causes the most damage. It has three phases and weather conditions will greatly affect the severity of damage to each stage. This year conditions have been right to cause the second phase (shoot blight) to be especially severe. In this phase, expanding shoots and leaves are rapidly killed. This phase tends to develop after cold spring weather and is the result of cankered twigs with new shoot growth dying or new shoots being infected as they emerge from buds.

There is also some evidence of the third phase (leaf blight). This occurs when the fungus directly infects leaves. Symptoms of the leaf blight phase include brown foliar lesions extending along the veins. These lesions can expand to involve interveinal tissues.

The first phase (canker formation) also may be present. This phase, which involves the death of buds and twigs during dormancy, can result in a severe reduction of new growth in spring. Trees appear to have failed to leaf out. On cankered twigs and branches, the small, black fruiting structures of the fungus will break through the bark.

Anthracnose infections on any tree can lead to premature defoliation and branch dieback. Severe infections for several years can weaken and disfigure a tree so that it becomes susceptible to other diseases and insects. Young or stressed trees are more quickly weakened than healthy, well-established trees.

In Nebraska, the previous years of hot, dry spring weather have reduced anthracnose injury. In fact, very little anthracnose was seen in 1988 and 1989. Also, hot, dry summers will suppress anthracnose development.

Little can be done now for this year's situation. Fungicide applications must begin at bud swell in early spring to be effective. It is important to keep the trees vigorous and healthy. Water and fertilize young trees, control insect problems, and avoid man-made induced stresses. Cultural practices such as raking leaves in the fall and pruning out infected branches and twigs may reduce some of the inoculum and aid young trees.

Chemical control is only recommended for young trees or those trees with a history of anthracnose problems. Fungicides, such as benomyl, chorothalonil, liquid lime-sulfur, Bordeaux mixture, and other coppers are labeled for various anthracnose situations. Read and follow label instructions. For effective control, fungicide application must begin at bud swell. One to two additional applications at 10-14 day intervals are recommended. Thorough coverage is important.

Luanne V. Coziahr

Diagnosis, Control Important to Managing Pine Wilt

The sudden death or decline of individual trees in landscape, shelterbelt or Christmas tree plantings may be caused by pine wilt. New citings of this disease have been limited in recent years, but we must remain vigilant to its control. Pine wilt disease is caused by a microscopic nematode (the pinewood nematode) which is transmitted by long-horned beetles. Scots and Austrian pines are highly susceptible; native pines (eastern white, jack, red) and other conifers (spruce, cedar, and fir) appear relatively unthreatened.

Once infected, a tree will die relatively quickly; the tree will progressively turn light gray-green, yellow-green and then yellow-brown in three to six weeks. All needles turn brown and adhere to the tree as it dies. Needle browning may develop uniformly over the entire tree or progress from individual branches or sections. These symptoms are coupled with a decrease in sapwood moisture and a cessation of resin flow. Cut ends of branches are dry and lack the normal sticky, resinous material. This is due to the colonization by huge numbers of nematodes in the resin ducts. In contrast, winter-injured trees (which also may show needle browning) will have green, flexible branches and normal resin flow.

For diagnosis, obtain several 6-8 inch branch samples cut near where they attach to the main trunk or a wedge of wood from the lower trunk. If the tree has recently died, obtain a cylinder sample from the lower trunk. Keep the samples moist with damp paper and enclose them in an unsealed plastic bag. Send them to the Plant Disease Diagnostic Clinic, 448 Plant Sciences Hall, University of Nebraska, Lincoln, NE 68583-0722.

If a tree is found to have pine wilt disease, destroy it before the annual activities of the beetle vectors begin. Infested trees should be removed and the wood burned or buried. Do not store trees killed by the disease for firewood.

David S. Wysong

Watch for Turf Disease Problems

Leaf spot and melting out are among the most common and serious turfgrass diseases. The recent cool, wet weather has been ideal for development of both diseases, particularly leaf spot. Leaf spot symptoms range from small oval spots on leaf blades to extensive rotting of crowns and roots. Early symptoms are small, dark purple to black spots on the leaf blade. Older symptoms are round to oval spots with buff-colored centers surrounded by a dark margin. Under cool, wet conditions, spots develop on the blades causing them to yellow and drop from the plant. Diseased turf takes on a yellow cast and the stand thins.

Turf showing leaf spot symptoms should be treated with a fungicide. Ideally, a fungicide program should be started in April, but diseased turf can still be treated now. Recommended fungicides are listed in NebGuide G89-925 *Leaf Spot and Melting Out Diseases of Turfgrass.*

John E. Watkins

WEED SCIENCE

Producers Warned: Pursuit Use Illegal on Corn

We are aware that some growers have considered using Pursuit postemergence for shattercane control in corn. Pursuit is registered for use in soybeans but is not approved for use in corn.

Using Pursuit in corn would result in illegal pesticide residues and subject the crop to condemnation. Grain not only from the treated crop but all grain stored with it would be subject to condemnation. The applicator would be subject to penalties for violating the pesticide label. Research conducted by Fred Roeth, Extension weeds specialist, shows that treating corn with Pursuit postemergence can result in a yield reduction of 30-50% even if no weeds are present.

We and American Cyanamid strongly discourage using Pursuit or any other pesticide in a manner other than specified on the label.

Alex Martin and Bob Stougaard

Annual Weed Tour June 19-21

The Nebraska Weed Tour is scheduled for June 19 and includes Lincoln, Mead and Concord. The tour continues at Clay Center on June 20 and concludes at Scottsbluff on June 21. Itinerary details were listed on page 26 of the IPW News (No. 90-5).

Some Herbicides Offer Delayed Application

Timely herbicide application is not always possible in the busy planting season. Some but not all preemergence herbicides can be applied early postemergence with good results. However, most of these treatments are more effective when applied preemergence, especially against annual grasses. Rain or sprinkler irrigation is required after application for best control. The following table lists herbicides commonly used in Nebraska that can be used both preemergence and early postemergence.

Alex Martin and Bob Stougaard

Treatment	Crop Stage	Weed Stage
Corn		
AAtrex/atrazine	0-30"	1.5" grass
Banvel + atrazine	not stated	1.5" grass
Banvel + Bladex 80W or 90DF	before 5th leaf	1.5" grass
Bicep	0-5"	2-leaf
Bladex 80W or 90DF	before 5th leaf	1.5" grass
Bladex 80W + atrazine 80W	before 5th leaf	1.5" grass
Bullet	0-5"	2-leaf
Dual	0-5"*	unemerged
Dual + AAtrex	0-5"	2-leaf
Extrazine	before 5th leaf	1.5"
Lariat	0-5"	2-leaf
Lasso	0-5"	2-leaf
Lasso + atrazine	0-5"	2-leaf
Lasso + Banvel	0-3"	2-leaf
Marksman	0-5"	0-4" broadleaf
Prowl + atrazine	up to 2-leaf	1"
Prowl + Bladex 80W or 90DF	up to 2-leaf	1"
Prozine	up to 4-leaf	1"
Ramrod + atrazine	0-5"*	2-leaf
Soybeans		
Amiben	cracking to 2nd trifoliate	1-4" certain broadleaves
Dual	through unifoliate stage*	unemerged
Lasso	through unifoliate stage	unemerged
Scepter	90 days preharvest	4-6" certain weeds
Pursuit	not stated	0-3"
Grain Sorghum		
AAtrex/atrazine	0-24"	1.5"
Bicep	up to 5"*	2-leaf
Dual	up to 5"*	unemerged
Lariat	up to 5"	2-leaf
Lasso	up to 5"*	unemerged
Lasso + atrazine	up to 5"	2-leaf
Ramrod + atrazine	0 to 5"*	2-leaf

*Not labeled postemergence; however, experience indicates little chance of crop injury.

Avoid Crop Injury Risk With Postemergece Herbicides

Cool, cloudy, moist conditions increase the likelihood of crop injury with postemergence herbicides. Under these conditions the crop absorbs more herbicide but metabolizes less of it. The net result is greater risk of crop injury and perhaps greater activity on weeds.

To minimize the risk of crop injury with postemergence herbicides under high risk conditions:

1) use the lowest labeled application rate,
2) apply during the most tolerant crop growth stage, and
3) adjust surfactant/additive use to match conditions.

Alex Martin and Bob Stougaard

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