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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-17] [July 27, 1990]

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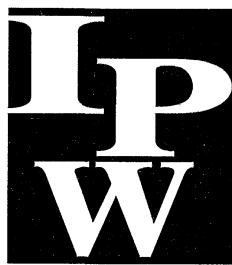
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Martin, Alex; Stougarrd, Bob N.; and Brown Jasa, Lisa, "INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-17] [July 27, 1990]" (1990). *Historical Publications in Weed Science and Weed Technology*. 78.
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Insect Plant Disease Weed Science

NEWS

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

No. 90-17

July 27, 1990

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INSECT SCIENCE

European Corn Borers Emerging, Laying Eggs

European corn borer moths will emerge soon and begin laying eggs in many areas of the state. Fields that have green silks and are shedding pollen during the peak of moth flight are most susceptible to second generation infestation. The white, flat eggs overlap each other like fish scales and are laid in masses of five to 40 eggs. Eggs are most likely to be found on the underside of the leaf, near the mid-rib, on the ear leaf and three leaves above and below the ear leaf. Just before the eggs hatch, black spots are visible in each egg. This is the head of the developing caterpillar. This stage is often referred to as the "black head" stage.

Begin scouting fields now to determine when egg laying begins. To determine the need for control of second generation European corn borers, examine 25 plants at each of four sites per field (100 plants total). Record the number of plants infested with either egg masses or newly-hatched larvae. Check fields every three to four days and accumulate the percentage of infested plants. Treatment is

recommended when you accumulate an average of 30-50% of plants infested with egg masses or small larvae over a 10-day period early in the egg-laying period. If treatment is needed, it's critical that the timing of insecticide applications coincide with the beginning of egg hatch to achieve successful control. As the plant matures beyond the blister stage, the potential for economic benefits from insecticide applications rapidly declines.

Always be alert to the possibility of spider mite build-up after insecticide applications. If mites are expected to be a problem, *Bacillus thuringiensis* (e.g., Dipel) used for European corn borer control would be least likely to cause mite build-up. Additional information on controlling second generation borers, including a list of recommended insecticides, their rates and restrictions is available in *EC 90-1509, Insect Management Guide: Corn and Sorghum*, available from any University of Nebraska Extension office.

Bob Wright



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



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How to Determine Need for Grasshopper Control

Immature grasshoppers are common in many parts of the state in grassy pastures and field margins. As these areas dry down or are mowed, grasshoppers will move into crops. Grasshopper control is best accomplished while they are small and before they move into crop areas. The following table provides guidelines for treatment of grasshoppers in field margins and crop areas.

Many effective insecticides are available for grasshopper control. For lists of those labelled for different crops, see *EC90-1509: 1990 Insect Management Guide for Nebraska Corn and Sorghum*, *EC90-1511: 1990 Insect Management Guide for Alfalfa, Soybeans, Wheat, Range, and Pasture*, and *EC90-1537: 1990 Insect Management Guide for Sugarbeets, Dry Beans, Sunflowers, Vetch, Potatoes, and Onions*. Be sure the insecticide you use is

labelled for the site to be sprayed (e.g., rangeland or specific crop). Also, be aware that insecticides applied in crops for grasshopper control may promote the buildup of spider mites by eliminating their natural enemies.

Bob Wright

Number of Nymphs or Adult Grasshoppers
Per Square Yard of Cropland

Classification	Field	Field Margin	Treatment Necessary
Non-economic	0 to 2	5 to 10	Usually not
Light	3 to 71	1 to 20	Questionable
Moderate	8 to 14	21 to 40	Probably
Abundant	15 or more	41 or more	Yes

When Pets Suffer:

Try Cleaning, Treatment to Eliminate Fleas

Fleas are a problem most summers, and this year is no exception. Adult fleas are small, dark-colored, wingless insects. Eggs are deposited on animals, but soon drop off into the animal's bedding, on carpets, or in the lawn where they hatch into white, worm-like larvae that feed on organic matter. When development is complete, the larvae pupate, emerge in five to seven days as adults and seek a warm-blooded host for a blood meal. Fleas most often bite people on the legs, especially in the ankle region. Reactions to flea bites vary considerably among individuals. Typically, a flea bite results in the formation of a small red spot with a light-colored center where the mouthparts entered the skin. There is usually considerable itching and discomfort.

Successful flea control requires simultaneously treating infested animals, the home's interior, and the yard. Pets such as cats and dogs can be treated with insecticides like carbaryl (Sevin), DDVP (Vapona), malathion, methoprene (Precor), propoxur (Baygon), pyrethrins or rotenone to effectively control fleas. Use only those products specifically formulated for the animal species to be treated. Treat pets around ears, under collars, between the legs and around the tail. Insecticide-impregnated flea collars also may provide some control but are usually ineffective unless used in conjunction with premise treatments. Recently, there has been advertising for "sonic" flea collars which supposedly repel fleas and ticks with sound waves. It is our experience that these collars are ineffective and a waste of money.

Inside the home, control measures should begin with a thorough cleaning. A vacuum cleaner can be used to remove flea eggs and larvae from carpets, cracks and crevices, around baseboards and under furniture. It's important to dispose of sweepings promptly to prevent reinfestation by escaping fleas. Insecticides also can be used to control fleas inside the home. Remember, however, that the effectiveness of insecticides is directly related to the thoroughness of their application. Plan to treat rugs, carpeting and upholstered furniture. Pay particular attention to bedding and resting areas of pets. Crawl spaces also should be thoroughly treated. Insecticides available for flea control inside the home include carbaryl (Sevin), chlorpyrifos (Dursban), diazinon and malathion.

Outdoor areas such as garages, porches, yards and particularly animal resting areas also should be treated to avoid reinfestation. Products available for outdoor use include carbaryl (Sevin), chlorpyrifos (Dursban), diazinon, malathion, methoprene (Precor), propoxur (Baygon), pyrethrins and rotenone. Methoprene (Precor) is an insect growth regulator which has been shown to be highly effective against dog and cat fleas.

Be sure to read, understand and follow all insecticide label directions and precautions.

Fred Baxendale

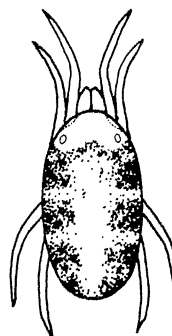
Spider Mites Sighted in Western Half of State

Reports from western, southwestern, and south central Nebraska indicate that Banks grass mite colonies are becoming established in some corn fields. In most cases, the colonies are smaller than a quarter, although they are extensive enough to cause visible damage in some fields. Most infestations are in field margins and other areas where stressed plants are most likely to occur.

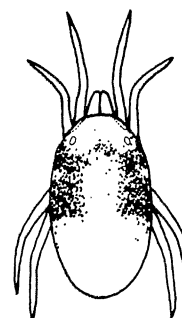
Only a few reports of two-spotted spider mite infestations have been received, and in all cases, the numbers were low and little damage was observed. Both species of mites have been found on the same leaves in some fields.

What happens next in these fields will depend on weather. If we have very hot and dry conditions for the next two to three weeks, we can expect the mite infestations to increase and cause economic damage. If mild weather persists and the corn plants are not stressed, we would not expect serious spider mite problems.

It is important to remember that spider mite problems are more likely when plants are stressed, particularly by heat and drought. Spider mite problems also are more likely after insecticides are applied to control pests such as European corn borer or corn rootworm beetles. Obviously, it is wise to avoid stressing the plants and do not apply insecticides unnecessarily.



Banks Grass Mite



Two-spotted Spider Mite

Also, do not assume that Banks grass mites and two-spotted spider mites can be treated the same. These mites can be differentiated in the field with just a little magnification (see drawing) and they must be managed differently. Pesticides that control the Banks grass mite will not necessarily control two-spotted spider mites.

For more information about managing the Banks grass mite and two-spotted spider mites, refer to NebGuide G75-50, *Spider Mites on Corn*, and EC90-1509, *1990 Insect Management Guide for Nebraska Corn and Sorghum*.

Steve Danielson

For More Information

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

G87-845: Electrical Systems for Agricultural Buildings (Recommended Practices). This NebGuide describes wiring practices and equipment.

G87-846: Electrical Systems for Agricultural Buildings (Checklist). This NebGuide is a checklist to help in evaluating both existing and new electrical installations for agricultural buildings.

G90-990 Explosion Venting and Suppression of Bucket Elevator Legs. Explosion vents and explosion suppression devices limit the danger and damage associated with grain dust explosions. This NebGuide discusses these devices and design guidelines for application on bucket elevator legs.

EC90-1872 A Guide to Turf Diseases in Nebraska. Good turfgrass management is an effective disease deterrent. This publication gives you some guidelines.

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.

Crop Pest Update Scheduled

The 1990 Crop Pest Management Update (CPMU) meeting has been set for Nov. 27-28 at the Ramada Inn in Kearney. The program committee is busy preparing the schedule now. Details regarding topics, speakers, agenda, registration procedures, etc. will be announced in September. Please put these dates on your calendar. I look forward to seeing you at CPMU.

Steve Danielson

PLANT DISEASE

Scout Now for Signs of Foliar Diseases

Now is the time to watch for leaf spots in corn fields. Weather conditions including moderate temperatures with frequent rains, extended periods of fog or dew, high humidities, and overcast skies will favor their continued spread and development. If hot, dry weather prevails, we probably will see little if any significant yield reduction from leaf spot diseases.

Tremendous growth has occurred in our field crops the past couple weeks, and in many cases the leaf canopy has completely closed. This condition tends to increase the humidity within the rows which favors the spread of pathogens from lower to mid and upper leaves. Usually, leaf blights and spots are of little economic importance unless they develop on or above the ear leaf. So, when scouting fields, be aware of developing diseases as well as where they are occurring on the plant.

Descriptions of some blights and leaf spots for this season follow:

Southern Corn Leaf Blight: This disease is identified by relatively small, elliptical, tan to light-brown lesions that frequently have somewhat parallel sides. The spots may or may not be surrounded by a darker-colored border, depending on the hybrid. Severely infected leaves may be killed, frequently starting near the leaf tip.

Northern Corn Leaf Blight: Large, 1- to 6-inch long, "cigar-shaped" lesions with relatively smooth margins are the diagnostic clue for this foliar disease on susceptible hybrids. At first the lesions are small and grayish green. The lesions enlarge with age and become tan to light brown. Even though many hybrids are genetically "resistant" to this disease, they may still become infected. On such hybrids, the symptom expression is quite different than described. A resistant reaction will appear as long, chlorotic to tan, linear streaks with wavy margins and a broad yellow halo. The "resistant" gene(s) alters sporulation of the fungus rather than the infection processes.

Yellow Leaf Blight: Rectangular to oval, yellow, cream-colored or tan-colored lesions, sometimes surrounded by chlorotic margin, commonly appear on the outer half of the leaf blade. The spots vary in size and may be so numerous as to cause large areas to become necrotic. Leaf sheaths and outer husks also are susceptible.

Eye Spot: Early symptoms consist of small, translucent circular to oval lesions with strong yellowish halos, particularly when held up to the sunlight. Each small spot has a tan or cream-colored center bordered by a brown or purple ring which gives the disease its name — it looks like an "eye-spot". Occasionally, the disease is confused with a "physiological" or genetic leaf spot condition (which, of course, is noninfectious).

Brown Spot: Lesions first appear as very small, oblong or round yellowish spots on the leaf blade, sheath, stalk and sometimes on the outer ear husks and tassels. Commonly they are aggregated in bands across the leaf blade or at the junction of the blade and the sheath. Infected tissues turn chocolate brown to reddish brown or purple.

Gray Leaf Spot: This is a relatively new disease to Nebraska. It is common and occasionally severe in Illinois, Indiana, and Kentucky. Lesions on maturing leaves are pale brown or gray to tan, long, narrow, and rectangular, being characteristically restricted by the veins. The lesions may coalesce and kill the leaves.

Common Smut: I'm sure everyone recognizes the large, silvery galls that form on stalks, tassels, and ears as being common smut; but infected leaves show a different symptom. Galls on the leaves are slightly raised structures that remain small, become hard and dry, and do not rupture. Leaf galls of common smut are little more than curious oddities.

Common Corn Rust: Small, raised pustules covered by a thin membrane (the leaf epidermis) appearing nearly simultaneously on both leaf surfaces signal infections by the common rust fungus. Soon the covering epidermis ruptures to release the golden- to cinnamon-brown spore mass. These are the uredospores (the repeating stage of the fungus) that can germinate and re-infect corn leaves within hours of release. Later, the pustules become brownish black as the host tissue matures and the fungus begins to produce teliospores. This spore form does not "repeat" on corn and, in fact, plays virtually no role in the disease cycle in the United States. The fungus does not overwinter in Nebraska; hence, wind-blown uredospores must be re-introduced every year from tropical and subtropical areas where the pathogen persists on living corn plants.

David S. Wysong

Be Alert to Anthracnose in Established Alfalfa Stands

Growers need to be on guard for anthracnose and phytophthora, the most serious alfalfa diseases in Nebraska. Although anthracnose often constitutes a separate problem, it is only one of several components affecting plant health. It interacts with other diseases and with environmental factors to produce a cumulative stress that together causes yield and stand loss. Anthracnose may appear anytime during the growing season and on any age of stand. It typically appears after the second cutting and on stands of two or more years. Growers should look for the disease in their August and September cuttings. From a distance, infected fields show dead, straw-colored stems scattered through the stand. Infected stems curve at the tip similar to a shepherd's crook. Leaves wilt, turn tan, and ultimately the entire stem dies. On resistant varieties only a few scattered plants will show symptoms. However, on susceptible varieties the disease progresses rapidly until at one-tenth bloom stage 30 to 50 percent of the plants within the stand are diseased.

To diagnose anthracnose in the field look for lesions on the stem. Typical stem lesions are diamond-shaped, ash-gray with a dark-brown border, and usually form on the lower stem. There may be more than one lesion on the

stem. The center of each lesion usually contains small black structures of the causal fungus. These lesions are very distinctive of anthracnose and make field diagnosis fairly easy. Unfortunately, the only control for anthracnose is to grow resistant varieties.

For more information on anthracnose, ask your local Extension agent for NebGuide G89-931: *Alfalfa Anthracnose*.

John E. Watkins

Maize Chlorotic Mottle Virus Reported

The year's first samples of maize chlorotic mottle virus (MCMV) were collected in Harlan County last week. Corn plants exhibiting light greenish-yellow mottling were observed in several fields in the Alma-Orleans area. This is one of two viruses associated with corn lethal necrosis. The other virus, maize dwarf mosaic virus, was not present. The lack of earlier green bug infestations may limit the occurrence of maize dwarf mosaic virus and hence the development of corn lethal necrosis in south central Nebraska.

Ben Doupnik, Jr.

WEED SCIENCE

Begin Bindweed Control With Fall Treatment

Fall is an excellent time to control field bindweed with herbicides. However, healthy new growth on the bindweed is essential for good results. Avoid tillage for at least 30 days before treatment. Dry weather in some areas has reduced bindweed growth making it more difficult to control. It would be best to wait for rain and new bindweed growth before treating, although it could be too late this fall for land going to wheat. September treatments are usually more effective than August treatments.

Effective herbicides for bindweed control include 2,4-D at 1 quart per acre of 4 pounds per gallon material, 2,4-D

plus 1 pint Banvel, Roundup at 1 gallon per acre, or 2 quarts Roundup plus 1 pint of Banvel per acre. A bindweed suppression treatment consists of 1 pint Roundup plus 1 pint 2,4-D amine or 0.5 pint Banvel plus 0.5 to 1 percent nonionic surfactant in 5 to 10 gallons of water per acre. Delay tillage for one week after application to allow herbicide translocation into the root system. Delay wheat planting 15 days after using 2,4-D. The Banvel label specifies a 45-day delay in wheat planting for each pint of Banvel; however, damage would be minimal at 30 days.

Alex Martin and Bob Stougaard

Suggestions Wanted for Herbicide Use Guide

We are beginning to collect suggestions for the 1991 Herbicide Use Guide. We have appreciated your previous input and ask that industry representatives, extension agents and any other Guide users submit their suggestions by Sept. 1. You have helped make the Nebraska

Herbicide Use Guide a most useful weed control aid. Please send your comments to Weed Science, 362 Plant Science Building, University of Nebraska, Lincoln, NE 68583-0915.

Alex Martin and Bob Stougaard

Plan Now For Late Season Weed Control

Harvesting will be easier and weed seed production will be reduced with good late season broadleaf weed control in corn and sorghum. Treatments with 2,4-D should not be applied later than the flowering stage of weeds to control seed production. Both corn and sorghum can suffer yield reductions from 2,4-D applied during the flowering period. As a guideline, 2,4-D use on corn can resume after the silk turns brown. The use of 2,4-D on sorghum can resume after the grain reaches the early dough stage. Sorghum should not be sprayed with 2,4-D between the beginning of head emergence and the milk stage. These late 2,4-D treatments will not cause lodging or stalk brittleness in the crop.

A 1 pound per acre application of 2,4-D will control many large broadleaf weeds including pigweed, sunflower, and cocklebur but will be weak on velvetleaf. The weeds become increasingly difficult to control as they mature. Ester formulations are likely to perform better than amines; however, esters produce vapors that may damage sensitive crops, gardens, and ornamentals. Not all brands of 2,4-D are labeled for this use.

Alex Martin and Bob Stougaard

Include Turf Renovation in Fall Yard Work

The clear days of August are a good time to begin turf renovation. Roundup is a useful herbicide for such a project. Skip one or two mowings so there is good growth of weeds and grass for herbicide intake and activity. Apply 2.5 to 3 ounces of Roundup per 1000 square feet using 1 gallon or less of water. Delay vertical mowing, slicing, coring, and power raking for seven days.

There are many successes with reduced tillage or conservation tillage systems for grass establishment. A typical program would include close mowing and clipping

removal seven or more days after the Roundup treatment. The next step would be fertilization followed by slicing or vertical mowing at least twice at right angles. Vigorous power raking also could be used for tillage. After slicing, vertical mowing or power raking, seed the grass. After seeding, water religiously. Watering will take the seed down to the soil through the natural mulch. Seed large-seeded grasses such as tall fescue between tillage operations, thus assuring that the seed doesn't hang up with the residue.

Alex Martin and Bob Stougaard

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The Insect, Plant Disease and Weed Science News is published throughout the growing season by the University of Nebraska Department of Agricultural Communications, 108 Agricultural Communications Bldg., UNL, Lincoln, NE 68583-0918. To order a subscription or to change your address, write to IPW News, Department of Agricultural Communications or call 402-472-7981.

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