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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-21] [Aug. 24, 1990]

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Insect Plant Disease Weed Science NEWS

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

No. 90-21 **Aug. 24, 1990**

In This Issue

INSECT SCIENCE

Russian Wheat Aphids Hit Hard in the Panhandle

The impact of Russian wheat aphids in winter wheat was more serious this year than in any previous year, causing millions of dollars of losses. Producers incurred costs for treating the pest as well as yield losses in fields that were not treated or where treatments were not totally effective.

As bad as the situation was in the Panhandle, it could have been worse. Increased rainfall allowed for more vigorous wheat growth and for aphid numbers to increase more slowly than in the two previous dry years. However, the combination of Russian wheat aphids and severe heat stress in June resulted in below-average yields and test weights.

Predicting the impact of the Russian wheat aphid on next year's crop is difficult. Certainly, we have a significant population of aphids oversummering in grasslands, Conservation Reserve Program acres, and road ditches. However, it's difficult to determine what their impact will be on next year's crop. In past years, Colorado has had severe spring infestations which have not resulted in widescale fall infestations. We must be prepared, however, for the potential for increased infestations next year.

The Russian wheat aphid has created a new era in western Nebraska wheat production. This era will be marked by increased wheat management. Although damage severity from the Russian wheat aphid will vary, this pest will always be present. In the future, control options will include choosing resistant varieties and emphasizing natural enemies. For now, however, severe infestations need to be controlled with insecticides. Insecticide use should be rationed because of the potential for developing insecticide resistance, destroying natural enemies and possibly contaminating food sources.

The following recommendations are to help growers reduce the potential for Russian wheat aphid infestation in their winter wheat. Following these recommendations will not eliminate the problem, but may reduce the chance of a severe problem developing.

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Russian Wheat Aphid *(Continued from Page 125)*

1. Control volunteer wheat at least two weeks before planting. No differences have been seen between mechanical or chemical control. The main point is to eliminate green growth.
2. Do **not** plant early. Early winter wheat plantings will be infested sooner and more severely.
3. Maximize plant growth and vigor. Use quality seed, fertilize to soil test specifications, reduce weed competition, and manage other pest problems appropriately. Healthy plants will not be resistant to the Russian wheat aphid, but they will be less severely affected.
4. Scout fields. Winter wheat should be scouted shortly after emergence and at least every two weeks into November. In the spring, check fields when wheat resumes growth. Weekly scouting is necessary once temperatures are consistently into the 70s. When scouting in fall, use a blind selection process to check at least 100 randomly selected plants. Do not inspect only those plants with obvious damage. Spotty infestations are likely; therefore, scout the entire field and make special note of hot spots. These areas may need to be sampled separately to determine severity.
5. Treat if the threshold is exceeded. The fall threshold is when 20% of the plants are infested. Fall foliar insecticide applications can effectively control these pests. Do not treat when extended cool periods are expected.

One control aspect not included in these recommendations is the use of planting-time insecticide applications. These applications can effectively reduce aphid numbers through the fall. However, we do not recommend their use because: 1) we can't predict where infestations will occur; 2) there have been few significant fall problems in the past; and, most importantly, 3) their use increases the chance of insecticide resistance developing.

The main thing we have learned about Russian wheat aphids is that we cannot let infestations get out of hand. We cannot overemphasize the need for consistent and continuous scouting. Diligence will pay off in fewer and more effective treatments in the long run.

Gary Hein

Begin Scouting Sorghum Fields for Greenbugs

We have received many reports of greenbugs seriously damaging sorghum fields. Until recently, greenbugs have been present in low numbers and many growers probably decided not to treat. If sorghum has reached the soft dough stage, do not treat since greenbugs probably will not cause further crop losses. If the sorghum has not reached the soft dough stage, growers should scout their fields and consider insecticide treatments when thresholds are reached or exceeded.

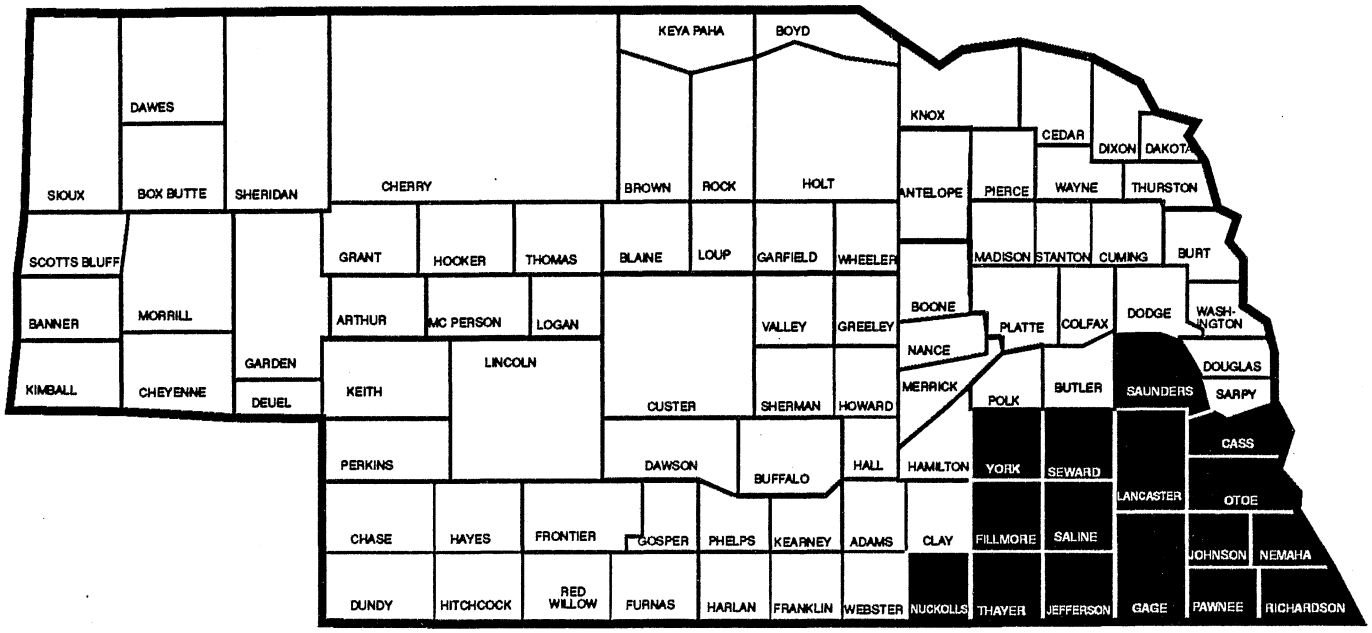
In grain sorghum that is from 6 inches tall to preboot stage, consider treatment when greenbug colonies are beginning to cause red or yellow leaf spotting on the lower leaves of most plants. In grain sorghum fields where plants are from boot to soft dough stage, consider treatment if greenbug colonies are on most plants, before one lower leaf has been killed, and if parasite numbers are low (less than 20 percent of greenbugs are parasitized). In forage sorghum, consider treatment when 25 percent of the lower leaves have greenbug colonies and are showing signs of damage. Refer to the Extension publication, *1990 Insect Management Guide for Nebraska Corn and Sorghum* (EC90-1509), for a list of insecticides registered for greenbug control in sorghum.

Steve Danielson

Get the Buzz on African Bees

The Nebraska Department of Agriculture and University of Nebraska Cooperative Extension Service recently issued a bulletin entitled *Questions and Answers on Africanized Honey Bees.* This publication is free for beekeepers to distribute to farmers and ranchers who own land where they have apiaries.

This brochure reminds readers of the importance of bees in producing many Nebraska crops and should alleviate inappropriate concerns about Africanized bees. Copies may be obtained from apiary inspectors or ordered by sending $1 in stamps for 25 copies to the State Apiarist, Nebraska Department of Agriculture, 301 Centennial Mall South, Lincoln, NE 68509. Please do not send cash or checks.



Counties with chinch bug infestations in 1990

Plan Now to Reduce Chinch Bugs in 1991

At least 16 Nebraska counties had chinch bug infestations of varying severities this season and may have them again in 1991. Those counties are: Richardson, Nemaha, Otoe, Cass, Pawnee, Johnson, Gage, Lancaster, Saunders, Jefferson, Saline, Seward, Thayer, Fillmore, York, and Nuckolls.

Careful wheat management can greatly reduce the likelihood of a severe chinch bug infestation the following year. The best way to prevent damage to sorghum is to avoid adjacent plantings of wheat and sorghum in areas where chinch bugs may be a problem.

Contrary to reports in the early literature, chinch bugs can and do severely damage wheat. They prefer to attack poor, thin stands of wheat that have been planted late in the fall, or are poorly fertilized, thinned by cold winter temperatures, or are poorly germinated and slow growing because of dry soil conditions. In the spring, thin wheat fields attract large numbers of chinch bugs that reproduce abundantly. Use optimal wheat management techniques to reduce the likelihood of chinch bugs severely damaging wheat. These techniques include:

Plant wheat as close as possible to recommended planting dates (see *When to Plant Wheat*, NebGuide G73-36). In chinch bug-infested areas of Nebraska, plant between Sept. 25 and Oct. 1. University tests conducted in Gage and Saline counties show significant yield losses every day planting is delayed after Oct. 9. If planting before fly-free dates for the Hessian fly, use a variety resistant to this pest (see *IPW News* No. 90-20).

Plant a moderate to heavy seed population. In eastern Nebraska, optimum seeding rates are 50-60 pounds per acre (see *How to Plant Wheat*, NebGuide G73-35), although heavier rates (up to 80 pounds per acre) may be planted if moisture is adequate. Even though a thin wheat stand will tiller in spring and fill in, a heavier plant density is less attractive to chinch bugs when they move into wheat in early April.

Use the best and most fertile fields possible for wheat production and don't cut fertilizer use. Grow something else in fields which consistently produce a poor wheat crop. Wheat grown for forage is just as susceptible to chinch bug attack as that grown for grain. And, grass crops (sorghum, corn, sudex, millet) planted into cut wheat will be severely attacked and possibly destroyed by chinch bugs unless several weeks have passed after cutting.

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Chinch Bugs (Continued from Page 127)

Barley is more susceptible to chinch bug attack than wheat, and chinch bugs prefer oats less and cause less damage than in wheat. Oats may be a possible substitute crop under certain conditions. Chinch bugs also feed on rye and triticale.

In areas where chinch bugs have been a problem, wheat should not be grown as a winter cover crop, torn up in the spring, and planted to a susceptible crop like sorghum or corn. There is a good chance that the torn-up wheat, thinned and stressed, will be very attractive to migrating chinch bugs. A legume would make a safer cover crop.

The most successful way to manage chinch bugs is to carefully plan the location of wheat and sorghum fields to avoid side-by-side planting. Minimize damage to wheat by producing a lush, healthy stand that will not be attractive to chinch bugs. Why are chinch bugs attracted to thin stands of wheat? The answer may be related to the fungus (*Beauveria bassiana*) which seems to play a major role in controlling chinch bug populations. This fungus kills chinch bugs by producing an enzyme which allows the fungus to grow into the insect body. Moist and humid conditions are necessary for this event (and resulting epidemics) to occur. Chinch bugs may seek thin stands of wheat because they prefer lower humidities in these fields thereby avoiding this disease.

Barb Spike, Research Associate-Entomology

WEED SCIENCE

Stop Leafy Spurge Advance with Fall Treatment

Leafy spurge continues to spread throughout Nebraska. Although it is most common in northern and eastern Nebraska, it can be found in about 75% of the counties. This noxious weed is poisonous to cattle and very competitive, greatly reducing the carrying capacity of grazingland.

Fall is an excellent time to begin leafy spurge control. Research has shown more consistent control of leafy spurge with fall herbicide applications than with spring treatments. The root system of leafy spurge stores food in the fall. Herbicides applied then readily move down the roots with the food reserves. The main consideration is that there be adequate fall regrowth of leafy spurge. Favorable soil moisture and growing conditions are needed to assure that herbicides are actively taken up by the plant and moved down the root system.

Control is most effective if treatments are started within two years from when leafy spurge enters an area. The root system is not well developed then and herbicide treatments are more effective. If there are only small patches, Tordon 22K may be the best chemical choice. Treat an area 10 to 15 feet wider than the patch to control any new sprouts which may grow from the roots.

Although Tordon is very effective, it is expensive and should not be used near desirable trees, surface water, or where the water table is near the soil surface. A 2-quart rate usually provides 60 to 80 percent control a year later, and a 4-quart rate gives 90 to 100 percent control. Tordon applied through a ropewick provides control equal to a broadcast application but at a reduced cost. For large infestations, Tordon at 1 pint plus 1 quart of 2,4-D is economical; however, long term control is not as complete as with higher rates. Another option would be 2 quarts of 2,4-D per acre. This rate will control seedlings and give short-term control of top growth, but it does little to reduce the infestation level. At the least, the 2,4-D application will prevent or slow the rate of spread of leafy spurge into uninfested areas.

Research shows you get a more consistent control of leafy spurge with a fall rather than a spring herbicide application.

Because of seed dormancy and food reserves in the root system, no single treatment will eradicate this weed. Don't expect to get rid of leafy spurge in one or two years; it will take continued efforts over several years.

Bob Stougaard and Alex Martin

2,4-D Helpful for Controlling Hemp Dogbane

Hemp dogbane approaches the correct stage for treatment with 2,4-D in late August and early September. Apply 2,4-D after corn is in the brown silk stage or milo is in the soft dough stage. Hemp dogbane roots should have swollen pink buds. Pod set on soybeans in the adjacent area should be complete. Treatments can be made until the dogbane leaves begin to yellow or frost occurs. After this, treatment will be of little value. Drought stress will reduce control.

Application rates for 2,4-D are 1.25 lb/A active ingredient on milo and 1.5 lb/A on corn. Leafy corn in 30-inch rows will intercept spray material and reduce control unless the application is made with a high clearance sprayer equipped with drop extensions. Plan to treat two or three years in a row.

Bob Stougaard and Alex Martin

PLANT DISEASE

Improve Lawn to Reduce Disease Potential

Summer 1990 was a roller coaster year for lawn disease problems. The weeks of 100 degree weather in June and July initiated outbreaks of brown patch and summer patch, but the intermittent cool periods reduced their impact. Mother Nature is a prime factor affecting the extent of turf injury from diseases, but management techniques also can have a major impact. The key to offsetting these patch diseases is to develop a deep-rooted turf by managing thatch, improving soil structure, irrigating deeply, and fertilizing properly. Follow these steps in late summer to prevent problems next year:

1. Manage thatch through power raking or aerifying.
2. Aerify to improve soil structure and reduce compaction.
3. Adjust mowing frequency to the growth rate of the turf and continue regular mowing until dormancy.
4. Fertilize in October with a balanced fertilizer that has a combination of slow and fast release nitrogen sources.
5. Renovate injured areas in early September using improved disease-resistant cultivars.
6. Continue to water deeply but infrequently to encourage deep rooting.

Healthy turf going into winter is less prone to disease injury next year.

John E. Watkins

Slime Molds Pose Little Threat to Grass, Gardens

With the advent of cooler weather and frequent light rains, various slime molds are likely to reappear in lawns, flower beds, and gardens. Slime molds are primitive fungi that develop on grass blades, strawberry petioles, dandelion leaves, or other upright plant parts, or in organic mulches such as wood chips. They are most commonly seen as purple or black material that seems to appear overnight. Closer examination reveals the mold to be composed of thousands of tiny, sack-like spore enclosures called fruiting bodies.

Dormant periods in the life cycle of a slime mold are spent as microscopic spores in the soil and plant litter. Under favorable temperature and moisture conditions, swarming spores are produced and unite in pairs to eventually produce a shapeless, slimy growth called a plasmodium. The plasmodium works its way to the soil (or mulch) surface and oozes across the substrate, feeding on bits of decaying organic litter, other fungi, and bacteria. As the plasmodium dries, it turns into the variously colored mass of powdery fruiting bodies that homeowners see as suddenly appearing overnight.

Slime molds are more of a curiosity than a threat to turf health. Control measures are usually not necessary since the slime mold fungi do not obtain energy by parasitizing living plant tissue. If their presence is bothersome, however, the clumps of dark fruiting bodies can be temporarily dispersed with vigorous raking, brushing, mowing, or hosing with a hard stream of water. Or be patient — the clumps will disappear naturally as temperatures and moisture change.

David S. Wysong

Anthracnose Causing Problems for Cucumbers, Melons

Anthracnose is becoming a prominent disease problem for commercial growers and homeowners. This fungal disease causes foliar leaf spots, vine decline, fruit infections, and reduced cucumber and melon yields. Humid, warm weather (70-80 degrees) and frequent rains encourage disease development and spread.

Cucumbers and muskmelons develop distinctive leaf spots. Initial infections are yellow and watersoaked. The lesions rapidly enlarge and turn brown and dry. The lesions may tear giving the leaves a ragged appearance. Watermelon leaves have black rather than brown lesions. Lesions also occur on the stems and petioles eventually causing vine and leaf death due to girdling. Lesions on fruits are sunken, brown, and circular.

The anthracnose fungus *[Colletotrichum orbiculare (=C. lagenarium)]* overwinters on crop residue. Wet conditions trigger the release of spores to infect young leaves. Splashing water, tools, and insects help spread the disease.

Use fungicides with chlorothalonil (Bravo or Ortho Multi-Purpose Fungicide) or benomyl (Benlate) to protect the foliage from infection. Read and follow label directions. Good coverage and repeat applications are required. Crop rotation and fall plowing to bury debris will help reduce inoculum levels. Some cucumber and melon varieties are resistant to anthracnose. Consider selecting these varieties when planting next year.

Luanne V. Coziahr

For More Information

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

G84-715: Signs and Symptoms of Pesticide Poisoning. This NebGuide describes the signs and symptoms associated with poisonings by several types of pesticides, and what to do in case of pesticide poisoning.

G85-751: Thatch Prevention and Control. This NebGuide describes how thatch accumulation damages turfgrass sites, and gives methods for removing accumulations and preventing their reoccurrence.

G90-992: Evapotranspiration (ET) or Crop Water Use. What must irrigators consider to achieve the most efficient use of water.

IPW News Contributors

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