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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-6] [April 27, 1990]

Alex Martin
University of Nebraska - Lincoln, amartin2@unl.edu

Bob N. Stougarrd
Extension Weed Specialist, University of Nebraska-Lincoln

COOPERATIVE EXTENSION

INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES

INSECT PLANT DISEASE WEED SCIENCE NEWS

DEPARTMENT OF PLANT PATHOLOGY UNIVERSITY OF NEBRASKA-LINCOLN,
EAST CAMPUS 68583-0722 PHONE 472-2559

No. 90-6 **April 27, 1990**

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PLANT DISEASE

Atrazine Contaminated Benlate Recalled by Manufacturer

The fungicide Benlate (benomyl) is registered for use on several food crops including beans (lima and snap), muskmelon (cantaloupe), cucumbers, watermelons, pumpkins, squash and tomatoes.

DuPont recently completed a recall of Benlate 50 DF and Tersan 1991 DF fungicides from its dealers and distributors because a small portion of these products was inadvertently contaminated with atrazine herbicide in last year's production. Since Benlate is a widely used fungicide by commercial and home vegetable growers, there is a possibility of a carry-over supply from 1989 still being on hand. Although the contamination levels were low (on the order of 10 to 100 ppm), the above crops are sensitive to even low levels of atrazine and problems could occur if contaminated Benlate is applied.

If you currently have any dry-flowable (DF) formulations of Benlate 50 DF or Tersan 1991 DF in 2-lb or 5-lb packages, or in 25-lb drums, please check the lot numbers (formulation date/batch number) found on the product. If the numbers correspond to the examples listed below, we urge you to return the contaminated product to the seller (dealer or distributor) as soon as possible. This includes partially used or sealed boxes. You will receive new product for all product returned.

Material to be returned can be identified by the presence of the letters "O" or "B" in the numbering sequence on the package. For example:

Formulation Date/Batch Number: 120888Q-091
or
Formulation Date: 10/88 B 1547
2778

Do not return product containing the letter "U" in the lot number. This product is not contaminated and is safe to use as directed. For example:

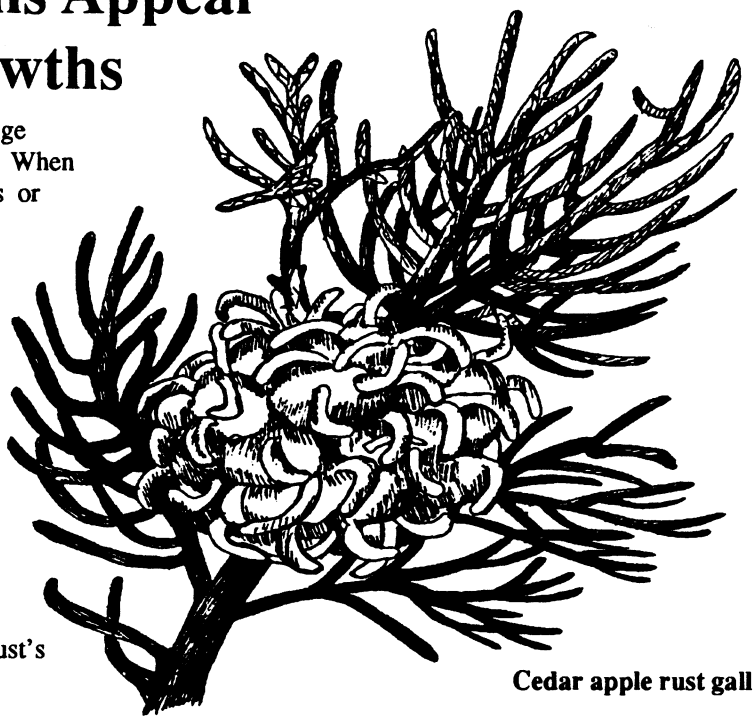
Formulation Date: U072789
Batch Number: 0071

David Wysong
Laurie Hodges, Ext. Vegetable Specialist, Horticulture

Cedar Apple Rust Galls Appear as Bright Orange Growths

Recent spring rains will bring out the brilliant orange galls on junipers infected with cedar-apple rust fungus. When dormant, the galls are fairly inconspicuous brown knots or swellings on the woody tissue. However, spring rains cause the galls to extrude the orange, gelatinous, finger-like telial horns of the fungus. These orange masses are conspicuous against the new green foliage and attract a lot of attention.

The orange telial horns produce teliospores which in turn germinate to produce basidiospores. The basidiospores are carried by wind or insects to an alternate host. For cedar-apple rust, alternate hosts are apples and crab apples. Leaf infection occurs and pycnia develop followed by aecial production. Aeciospores are then windblown to junipers from late spring through fall. Juniper infection and gall formation follow, completing the rust's life cycle.



Cedar apple rust gall

Cedar apple rust is usually a minor disease on junipers and cedars. I have seen young trees which are heavily infected showing branch dieback, but this is not common. If control is desired, consider the following options.

1. Since this fungus requires two hosts, removing one host will break the cycle. However, spores can travel some distance.

2. Plant resistant junipers and/or apples whenever possible.

3. Pruning out galled branches from junipers may provide some control.

Luanne V. Coziahr

Scout Alfalfa for Spring Blackstem

Producers should be alert to the development of spring black stem in alfalfa stands. This is the most serious leaf spotting disease affecting production in Nebraska. Spring black stem can severely defoliate the first cutting. It develops during cool, wet periods from mid-April until the first cutting in late May. Irregular black spots form on the stems and on the leaves. When severe, the entire stem is blackened and severely spotted, leaves yellow and prematurely drop from the plant. In advanced cases, plants can be almost completely defoliated before the stand is cut. This not only means a loss in forage yield but a substantial reduction in forage quality.

Management is the only method of reducing losses to spring black stem since fungicides or genetic resistance are not available. Growers should scout their fields weekly from late April until the first cutting in May or June. If spring black stem is detected, monitor its development. If it becomes severe, take an early cutting. This prevents early forage loss. This disease not only defoliates plants before cutting, but will continue to cause defoliation while in the windrow.

John E. Watkins

For More Information

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

G77-355 A Guide for the Control of Flies in Nebraska Feedlots and Dairies. Flies, especially stable and house flies, can create serious and costly problems for feedlot and dairy operations. This publication describes several methods for control.

G90-979 Powdery Mildew of Roses. Cause, symptoms of and conditions for powdery mildew are covered, as well as ways to control the disease.

EC90-872 Estimated Crop and Livestock Production Costs 1990. The budgets presented in this publication are in detailed format to allow the user to adjust the cost of individual items for general price changes and to reflect price variations between farms. For sale only: $4.00.

INSECT SCIENCE

Grasshopper Return Warned

Surveys conducted last fall by the Nebraska Department of Agriculture (NDA) and USDA/APHIS revealed economic infestations of grasshoppers on several million acres of western Nebraska rangeland. Ranchers should be aware that some damage could occur to rangeland this summer, especially if conditions continue to be warm and dry. Sampling for grasshopper nymphs to confirm problem areas will begin in mid-May. A limited federal program, sponsored by USDA/APHIS, is available to assist with control on qualifying blocks of hopper infested rangeland only — not cropland. Ranchers interested in learning more about the1990 grasshopper control program should begin planning now. If there is sufficient interest, informational meetings, co-sponsored by the Nebraska Cooperative Extension, USDA/APHIS and the NDA, will be held during the next several weeks. Interested ranchers should contact their local Cooperative Extension office for further information as soon as possible.

Steve Danielson

Crop Pest Update

Russian wheat aphids are now being found in Keith County near Paxton and Ogallala. This pest is now distributed across the Panhandle and into west central Nebraska. Growers with wheat in these areas should be scouting for the aphid and signs of its damage on a regular schedule. Be prepared to treat when treatment guidelines are reached. **Alfalfa weevil** larvae can be found in much of southern Nebraska, although infestation levels continue to be low. Scout alfalfa fields weekly, using the stem count method as described in issue 90-5 of the IPW News (April 20, 1990). **White grub** larvae and **wireworms** were observed in high numbers in a field that was being prepared for planting in Richardson County. In some cases, growers should be prepared to treat with a soil insecticide, in addition to a planter box seed treatment, to reduce losses due to seed and seedling destroying insects. **Greenbugs** have been observed on barley in Clay County and the presence of winged individuals would indicate that they have just recently moved into the area. Small grain producers in southern Nebraska should be scouting their fields for this pest and be prepared to treat if necessary.

Steve Danielson

Bluegrass Billbugs Hide Below Surface; Destroy Turf Roots

Bluegrass billbugs are elliptical-shaped snout beetles commonly found in lawns throughout Nebraska. Adult weevils are black and about 1/4 to 1/2 inch long. They are slow-moving insects and will frequently play "possum" when disturbed. At this time of year, billbugs may be observed walking on sidewalks or drives near infested turf. Larvae are legless grubs with white bodies and brown heads. When fully developed, grubs are about 1/4 inch and infest the crown or root zone of the turf, usually just below the thatch layer.

Billbugs overwinter as adults near the soil surface in and around the turf area. They become active in early to mid-April, depending on the soil temperature. Eggs are deposited in the stems of bluegrass near the crown. Upon hatching, the small larvae (or grubs) enter the grass stems where they feed for several weeks, causing infested shoots to yellow and die. As larvae outgrow the stems, they move down and continue feeding on the root system of the plant. In areas where billbug larvae are abundant, root systems can be completely destroyed, causing the grass to turn brown and die. Billbug-damaged turf is characterized by grass stems separating easily from the crown of the plant. Pupation occurs in mid-July with adults emerging about two to three weeks later. There is only a single generation of billbugs each year in Nebraska.

The most reliable and effective method for controlling billbugs is an insecticide application in early to mid-May to kill the overwintered adults before they deposit their eggs. Treatment is suggested when one adult billbug is found per one square foot of turf. Once eggs are deposited or larvae have moved into stems and the root zone, they are difficult to control with insecticides. At this time it is usually better to stimulate vigorous re-growth by fertilization and watering rather than attempting control with insecticides.

Insecticides suggested for adult billbug control include: bendiocarb (Ficam, Turcam), carbaryl (Sevin), chlorpyrifos (Dursban), ethoprop (Mocap), isofenphos (Oftanol) and isazofos (Triumph). Before applying the insecticide, mow the turf area and remove the clippings. Irrigate lightly after application to wash the insecticide off grass blades and onto the soil surface where billbug adults hide.

Fred Baxendale

New Publications Describe Substitutes for Synthetic Insecticides

The University of Illinois Cooperative Extension Service recently published four Extension Circulars as part of a new series "Alternatives in Insect Management."

The publications are: Microbial Insecticides, Circular #1295; Botanical Insecticides and Insecticidal Soaps, Circular #1296; Insect Attractants and Traps, Circular #1297; and Beneficial Insects and Mites, Circular #1298. They contain a great deal of useful information concerning alternatives to synthetic insecticides. The publications relate to all phases of insect management (crop, urban, etc.) and include basic biological information related to each topic as well as specific examples of potential applications and lists of commercial suppliers.

The circulars may be ordered from the Office of Agricultural Communications and Education, University of Illinois, 69-T-1 Mumford Hall, 1301 Gregory Drive, Urbana IL 61801, (217)-333-2007. Circular #1295 costs $1; the others cost $2 each. Quantity discounts are available. Make checks payable to "University of Illinois."

Bob Wright

Spring Temperatures Initiate Elm Leaf Beetle Activity in Homes

There have been numerous complaints recently of elm leaf beetles in homes. This annual event results from the beetles' habit of seeking winter shelter in attics, basements, crawl spaces, window wells and just about any other place that promises protection from the elements. Now that it's spring, they are trying to get back outside. The easiest thing to do would be to help them on their way by leaving the windows open. The trouble with that is more pests might come in than would leave. The best remedy in the home is the vacuum cleaner. The second best remedy is a household insecticide containing pyrethrins and piperonyl butoxide. To avoid, or at least reduce, this problem next fall, exclude the beetles with good caulking and screening.

Ackland Jones

Diazinon 14% Granular Gets Restricted Use Label

A new pesticide label recently released by the Environmental Protection Agency on Diazinon 14% granular insecticide makes it a restricted use pesticide. The restricted use pesticide designation came about because of potential bird and aquatic organism toxicity.

The pesticide label changes will appear on products for shipment after Aug. 22, 1990. Existing supplies can continue to be used according to old labels until used up. The Diazinon label changes do not effect the 2% and 5% homeowner formulations of Diazinon or the other professional formulations (AG500 and 4E). We would recommend following the new restrictions and adopting these procedures even though not legally required to do so until Aug. 22.

Specifically, the directions for using Diazinon 14G on lawns have been deleted. That means that there is no longer any permissible use for Diazinon 14G on turfgrass. The use of Diazinon on sod farms and golf courses was prohibited several years ago. The newly restricted label extends that prohibition to all turfgrass for this 14G formulation.

Some adjustments associated with vegetable use also were made on the pesticide label. The label for melons now specifies honeydew melons, cantaloupes, watermelons and others. Dried beans and peas have been deleted from the label. The product cannot be used on commercially grown potatoes which will be hand-harvested. Exposure to workers in this situation was not tested. The aerial application of Diazinon 14G is permitted only to sweet corn and field corn. The re-entry statement has been revised to a 24-hour re-entry interval.

Larry Schulze
Extension Pesticide Coordinator

WEED SCIENCE

Combine Chemical and Biological Methods for Long-term Musk Thistle Control

Biological control of musk thistle can be combined with chemical controls. Research has shown 2,4-D to be compatible with *Rhinocylus conicus* weevils if the herbicide application is properly timed. Trumble and Kok (Protection Ecology 2:57-64, 1980) reported that weevils could tolerate at least 40 times the recommended application rate of 2,4-D (1.5 lb/A). Weevils were not affected by direct spraying with 2,4-D or exposure to 2,4-D residues on musk thistle rosettes. 2,4-D did not affect weevil survival, reproduction, or egg viability. However, weevils need flowering musk thistles to complete their life cycle. Lack of sufficient flowering thistles would force the egg-laying females to abandon the site. It is important to plan for a favorable weevil habitat without abandoning successful control practices during the seven to 10 years from initial release to final equilibrium between the thistles and weevils.

Introducing Adult Weevil Populations

Weevil adults can be introduced to thistle infestations twice a year. In the spring, the weevils are collected early while feeding on thistles and transported to new sites to allow females to lay eggs. The weevils also can be collected in the seed heads in July when they have reached the late pupal or early adult stage of development. The heads are then transported to the release site to allow the new adults to overwinter. This second method has the risk of introducing a new species of thistle to an area since thistle seeds may be introduced with the weevils. If this method is to be used, the thistle species at the introduction site should be the same as the species at the collection site.

Adult weevils are dark brown with small yellow spots on their backs. They overwinter as adults and are generally first seen on thistles in early May.

After feeding and mating on thistles, the females lay eggs on the bracts of developing flower heads and, if insect density is high, occasionally on stems. Eggs are laid from late May through June. The eggs are covered with a light brown substance that darkens as it dries. The females lay most of their eggs on terminal musk thistle heads. However, as weevil populations increase, the other flower heads begin to receive more eggs. Each female lays 100 to 150 eggs over a 15- to 20-day period.

The larvae hatch from the eggs and bore into the base of the flower (receptacle) or into the stem. Larval feeding in the receptacle prevents the development of some or all of the seed within the head.

At a certain stage of development, the larvae stop feeding and pupate within a hard brown chamber in the receptacle. The pupa is a resting stage before transforming to the adult. It has rudimentary wings unlike the larvae. In a few days the final change from pupa to adult takes place. The new adults leave the heads beginning in July to find overwintering sites and become dormant until the next spring.

During early stages of colony establishment, insect numbers are concentrated in the terminal head and terminals of upper branches. Some late flowering, small heads that are low on the plant will probably escape infestation, resulting in limited seed production even after insects are established. Generally, six to eight years are required for weevil populations to build up before appreciable reduction of musk thistle seed production can be observed. After this time thistle populations should decline as the thistle seed supply in the soil is depleted. A decline in thistle populations is not likely for seven to 10 years after the initial release.

Establishing a Colony Site

R. conicus releases should be made in an area that will not be grazed during the weevil's egg-laying period. Although livestock generally will not feed on musk thistle, their presence causes the weevils to leave the area. In a new release site in a larger pasture a small fenced area of an acre or so with a musk thistle population of one to two thousand plants is desirable. Because *R. conicus* weevils are good fliers, a continuous link of plants between plant concentrations is not needed for the colony to expand.

The fenced release site should not be mowed or sprayed for at least two years or preferably longer. Cut thistles will dry in a few days, and all weevils in the plant will be killed. The most vulnerable period of the weevil's life is the larval stage within the developing seed head. Severe moisture stress to the plant will cause larvae death. Therefore, release sites should have good soil moisture and high water-holding capacity.

Weevils will migrate outward from the original release site. A gradual expansion of the unsprayed and unmowed area should be planned to accommodate the weevil population explosion which occurs three to six years after release. Monitoring the population annually will indicate when to expand the habitat. Monitoring also will expose adversities that may threaten a successful establishment, such as plants beginning to suffer moisture deficiency, presence of livestock, or change of field conditions.

All indications are that *R. conicus* and herbicides for musk thistle control are compatible and can be integrated into an effective control program for minimum seed production. This strategy should satisfy landowners and regulatory agencies while allowing for the advantages of both chemical and biological control.

Fred Roeth, Extension Weeds Specialist

Buctril Registered for Seedling Alfalfa

Buctril is registered for control of certain broadleaf weeds in seedling alfalfa. It is incorrectly listed for use on established alfalfa in the extension herbicide guide, EC89-130 Herbicide Use in Nebraska.

Alex Martin and Bob Stougaard

IPW News Contributors

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Department of Entomology, 202 Plant Industry Bldg., UNL, Lincoln, NE 68583-0816.

Fred Baxendale	Jack Campbell	Steve Danielson
Art Hagen	Gary Hein	Keith Jarvi
Ackland Jones	Jim Kalisch	Leroy Peters
Ron Seymour	John Witkowski	Bob Wright

Department of Plant Pathology, 406 Plant Science Bldg., UNL, Lincoln, NE 68583-0722.

Luanne Coziahr	Ben Doupnik	Eric Kerr
John Watkins	David Wysong	

Weed Science, Department of Agronomy, 279 Plant Science Bldg., UNL, Lincoln, NE 68583-0915.

Alex Martin	Bob Stougaard