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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 90-5] [April 20, 1990]

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**INSECT
PLANT DISEASE
WEED SCIENCE**

NEWS

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No. 90-5

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WEED SCIENCE

Where Do the New Shattercane Herbicides Fit In?

Over the past two years you may have seen two new shattercane control herbicides on field tours in your area. These herbicides offer promising new tools for shattercane control in corn. Two companies have independently developed sulfonylurea herbicides that are very close to registration for use in corn. Ciba Geigy manufactures Beacon herbicide and Dupont, Accent. A Section 18 label for Beacon was forwarded to the EPA for review in early January. However, we have just received word that this request was denied. It is likely that both herbicides will receive full registrations for the 1991 growing season.

Beacon and Accent herbicides are intended to be applied postemergence over-the-top of 4-to 20-inch corn. Both herbicides provide excellent shattercane control. The greatest shattercane infestations occur where corn is grown continuously and where insecticides are used for rootworm control. Many rumors are circulating about the potential for interactions between the sulfonylurea herbicides and insecticides commonly used for rootworm and corn borer control.

While relatively little data are available, and additional research is needed, several trends have been observed. In over half of the studies, Counter insecticide applied in-furrow or T-banded, followed by Accent or Beacon herbicide has resulted in significant corn injury. Yield reductions have ranged from less than 10% to as much as 25%. Several other studies with organophosphate insecticides have indicated that others also may increase the chances of corn injury. Because of the concern about adverse interactions with Counter, use of this insecticide was excluded on the Beacon Section 18 label submissions. This season, additional research will be conducted at the Mead and Clay Center Extension and Research Centers to better understand the compatibility of these promising new herbicides with insecticides commonly used by corn producers.

**Dave Mortensen, Asst. Professor, Agronomy-Weeds
Lance Meinke, Asst. Professor, Entomology**



Now's the Time for Thistle Control

Although musk and plumeless thistle may have been introduced into Nebraska as ornamental plants, both are considered noxious weeds by State law. Both weeds are commonly found in untilled areas such as CRP acres, pasture, rangeland, and rights of way along railroads and highways. Now is the perfect time to control these weeds because the plants are in the rosette stage and are most susceptible to herbicide treatments. Control with herbicides declines rapidly once the plants begin flower stalk elongation (bolting). Although later applications may visibly damage the plant, seed is still produced and will perpetuate the problem.

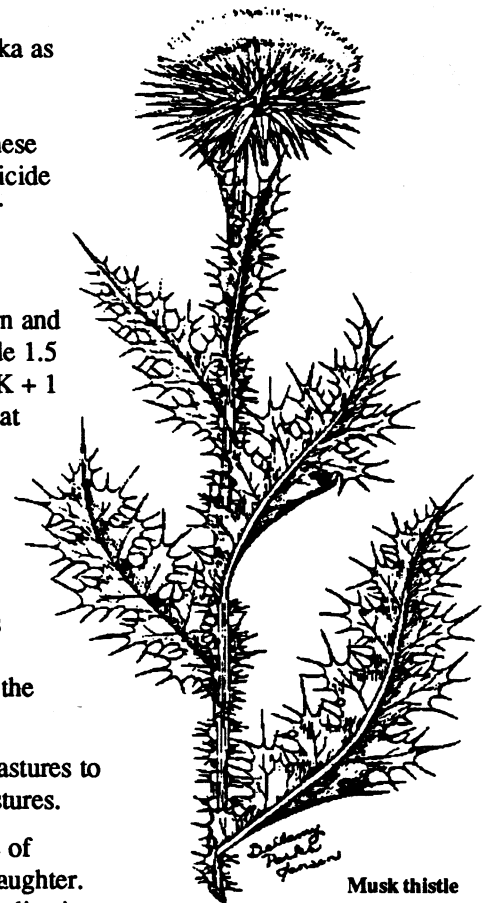
In eastern and southern Nebraska, apply treatments by late April. In northern and western Nebraska, apply treatments 10-14 days later. Effective treatments include 1.5 to 2 quarts 2,4-D, 1 quart 2,4-D + 0.5 pint Banvel, or 6 to 8 ounces of Tordon 22K + 1 quart of 2,4-D. (Rates for 2,4-D are based on four-pound formulations). Curtail at 2 to 4 pints also provides effective control of musk thistle and can be used on CRP acres and small grains. In noncrop areas, if applications are delayed and the plants have bolted, Telar at 0.5 to 1 ounce will provide effective control of musk thistle up to the early bud stage.

Grazing restrictions vary with the herbicide and type of livestock. With 2,4-D, there are no restrictions on meat animal grazing. Lactating dairy animals should not be grazed on treated areas for seven days after application. However, certain manufacturers and formulations have more restrictive guidelines. Check the product label.

In the case of Tordon, do not move grazing livestock from Tordon treated pastures to broadleaf crop areas without first allowing seven days grazing on nontreated pastures.

With Banvel, the grazing restrictions vary with the application rate and type of livestock. Meat animals should be removed from treated areas 30 days before slaughter. For dairy animals, the grazing restrictions are seven days for a 1-pint-per-acre application and 21 days for a 1-quart-per-acre application. Do not harvest hay for dairy animals within 37 days of a 1-pint-per-acre application and within 51 days of a 1-quart-per-acre application. There is no restriction on hay fed to meat animals. When Banvel is used with 2,4-D, grazing restrictions are the same as for Banvel alone.

With Crossbow, lactating dairy animals should not graze treated areas for one year after treatment. Livestock should be removed from treated areas three days before slaughter. Do not make hay from treated areas for one year after treatment.



Musk thistle

Bob Stougaard and Alex Martin

The itinerary has been set for the 1990 Nebraska Weed Tour. The tour will begin in eastern Nebraska. The proposed itinerary is:

Schedule Set for 1990 Weeds Tour

June 19	9:00 a.m. 2:00 p.m. 6:30 p.m.	Lincoln - 84th and Havelock Ave. Mead - ARDC Concord - Northeast REC
June 20	12:30 p.m.	Clay Center - South Central REC
June 21	8:00 a.m. 3:30 p.m.(MDT)	North Platte - West Central REC Scottsbluff - Panhandle REC

Bob Stougaard and Alex Martin

PLANT DISEASE

Disease Update: Soilborne Wheat Mosaic Found

Soilborne wheat mosaic virus was confirmed in a sample of irrigated wheat from Perkins County. Soilborne wheat mosaic has been found in west central Nebraska before, but the disease is not common there. This disease is the most prevalent wheat disease in south central and southeastern Nebraska.

Growers with fields suspected of having soilborne wheat mosaic may want to take a sample to their local extension office for diagnosis. Any positive fields should not be planted this fall to a soilborne susceptible wheat cultivar. If the field has been in continuous wheat for more than three years, it should be rotated to another crop. If it has not been in continuous wheat for that long and is going to be planted to wheat this fall, then growers in the eastern third of Nebraska should consider a soilborne resistant cultivar.

The recent wet weather was ideal for the development of **tan spot** and **Septoria leaf blotch**. Symptoms of these two leaf-spotting diseases are difficult to distinguish early in the season so any suspect samples should be taken to the local extension office for diagnosis. Young tan spot lesions are initially small, dark-brown spots with tan centers. These later enlarge becoming roughly circular tan spots surrounded by a yellow halo. Severely infected wheat will

take on a yellow cast. Septoria leaf blotch appears as tan blotches on leaves. It also causes considerable yellowing of young wheat plants. Another way to distinguish the two diseases is to examine the straw and the older leaves. Tan spot produces black, raised fruiting bodies on the straw that feel like coarse sand paper to the touch. Septoria produces similar fruiting structures on the straw and on the older leaves, but they are not as prominent or as rough to the touch. With Septoria, the structures appear as fine black dots on the lesions of older leaves and probably represent infection that occurred last fall. Although these leaf-spotting diseases can cause considerable yellowing of wheat in the tillering and jointing stages, their greatest effect on yield is when the flag and flag-1 leaves are infected.

Wheat leaf rust is being reported in central Kansas, but has not been observed yet in Nebraska. If the wet weather continues, growers should begin scouting fields in early May to monitor leaf rust development.

Kansas also is reporting the presence of **wheat streak mosaic** which has not been cited yet in Nebraska. As temperatures moderate in the coming weeks, however, this disease will certainly make its entrance.

John E. Watkins

Evergreens Showing Signs of Winter Desiccation

A number of pine and juniper samples showing symptoms typical of winter desiccation have been examined in the Plant Disease Diagnostic Clinic. Although this is a widespread and common problem, it is not serious in most cases.

Winter desiccation symptoms on pine include the uniform browning of needle tips throughout a tree. Occasionally, only one side of a tree may be affected. If the needles are laid back, they all have about the same amount of tip browning. Junipers with winter desiccation damage fail to green up as they should. Branch tips may be brittle and brown. The damage can be scattered or general over the whole tree.

Winter desiccation damage occurs when the foliage loses moisture which is not adequately replaced. This can happen easily on a bright, warm, windy winter day. The foliage is losing moisture, but the roots are inactive in frozen or dry soils.

In most cases, only the needles are damaged. In severe cases, there may be branch dieback and bud death. Check the buds by cutting into them lengthwise. Evidence of green tissue is a good sign. New growth will improve the tree's appearance. Damaged needles will not recover, however. Brown buds indicate death of that branch. Wait a few weeks to see how extensive the damage is. Some trees can suffer dieback and still recover further back on the branch.

Not all trees are affected in the same way. Genetic variability, site variability, and overall health are all factors. I have noticed that young or recently planted trees are more likely to show damage than established trees. Also, spruce and concolor firs are more likely to be damaged than pines and junipers. Weak, stressed, or exposed trees are more seriously damaged than healthy, protected trees.

Luanne V. Coziahr

Send Fresh Samples For Disease Testing

The Plant Disease Diagnostic Clinic now can test for several diseases caused by viruses. ELISA test kits bought from Agdia, Inc. have arrived, and we are ready to give them a try. These kits will be used to confirm virus diagnoses when appropriate and on a trial basis. Tests currently available are:

- Tomato Spotted Wilt Virus
 - Lettuce strain
 - Impatiens strain
- Pelargonium Flower Break Virus
- Potyvirus Group Test — able to detect viruses belonging to the potyvirus group (for example, Maize Dwarf Mosaic Virus, Soybean Mosaic Virus)

Fresh plant material is needed for these tests. Whole plant samples shipped promptly generally arrive in suitable condition. Place a bag over the roots and soil to keep them together and pack the plants carefully to avoid unnecessary damage. Select plants that show representative symptoms but are still living. If at all possible, also include a well-marked healthy plant.

Luanne V. Coziahr

New Publications Announced

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

G78-406 Fertilizing Grass Pastures and Haylands. Managing nitrogen, using phosphorus and information on other nutrients for grass pastures and haylands.

G90-973 Oil Additives to Reduce Grain Dust. Treating grains with oil additives can effectively reduce dust concentration in commercial grain handling facilities. This NebGuide discusses types of oils commonly used and recommended application practices.

G77-357 Selecting Alfalfa Varieties for Nebraska. Yield potential, pest resistance and seed price all should be considered in selecting alfalfa varieties in Nebraska.

G89-955 Nozzles -- Selection and Sizing. Covers nozzle description, recommended uses and orifice sizing for farm sprayers.

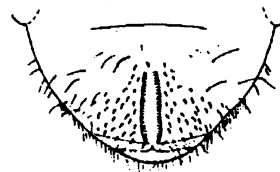
These publications and many more are available free or at a nominal charge at your local Extension office.

INSECT SCIENCE

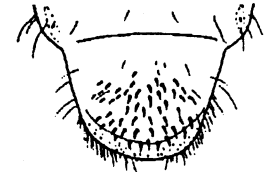
Watch for White Grubs During Corn Planting

When land is being prepared for planting field corn, white grubs may be brought to the surface. White grubs have a C-shaped, milky-white body, a brown head, and may be from 1/2 to 1 inch long. White grubs can damage corn by feeding on the roots. If many white grubs feed on a seedling, they can kill the plant. However, before using an insecticide at planting for white grub control, identify which white grub species is present.

In Nebraska there are two major types of white grubs found damaging field crops: the annual white grub (*Cyclocephala* spp.) and the May or June beetle larva (*Phyllophaga* spp.). They differ greatly in their life cycles and damage potential. The annual white grub takes one year to complete its life cycle and completes most of its feeding during the late summer and early fall of the previous year. It becomes active in late April or early May as the soil warms. It feeds a little and then transforms to an adult in mid-May. Unless present in extremely high numbers, they rarely cause enough



Phyllophaga



Cyclocephala

Spine pattern underside of the tail end of the white grub.

damage to warrant treatment with a soil insecticide at planting. The May or June beetle takes two to three years to complete its life cycle and feeds heavily on plant roots in early spring and summer. If many are present, they may cause economic damage. The two white grubs can be distinguished by the pattern of spines on the underside of the tail end of the white grub. (See diagram...) The annual white grub has no particular pattern to these spines, but the May or June beetle larva has two rows of spines down the mid-line of the abdomen.

Counter 15G, Lorsban 15G, Thimet 20G, and Aastar 15G, applied at planting, will control white grubs in corn. (See EC 90-1509, "Insect Management Guide for Corn and Sorghum", for information on rates, placement and other labelled products). Low to moderate numbers of other seedling pests (seed corn beetle, seed corn maggot, wireworms) can be controlled by use of a planter box treatment of diazinon or lindane.

Bob Wright

Correction

We incorrectly reported that Thiodan insecticide is no longer registered for use in wheat on page 17 of the April 6 issue (90-3) of IPW News. Thiodan 3EC and 50WP are registered for use on wheat to control the army cutworm.

Steve Danielson

Alfalfa Weevils Entering Eastern Nebraska

Small larvae of the alfalfa weevil can be found in alfalfa fields in eastern Nebraska. These insects are causing very little damage to the foliage and infestation levels are low. Larger numbers of alfalfa weevil larvae are being observed in Kansas, Missouri, and Oklahoma, however, and we expect Nebraska infestation levels to increase as temperatures warm and the alfalfa grows taller.

Alfalfa growers are encouraged to begin scouting procedures once alfalfa grows to 6 inches. To scout for the alfalfa weevil, carefully collect 50 stems at random from across the field and place them in a bucket. Shake the stems vigorously against the sides of the bucket to dislodge the larvae from the stem tips. Count the number of larvae in the bottom of the bucket and measure the length of the stems. Compare the average number of larvae per stem (divide the total number of larvae you counted by 50) to the stem length on the charts below to determine the recommended action. Each chart has been developed for a different alfalfa hay value (i.e. \$35, \$70, and \$105 per ton). Use the chart that

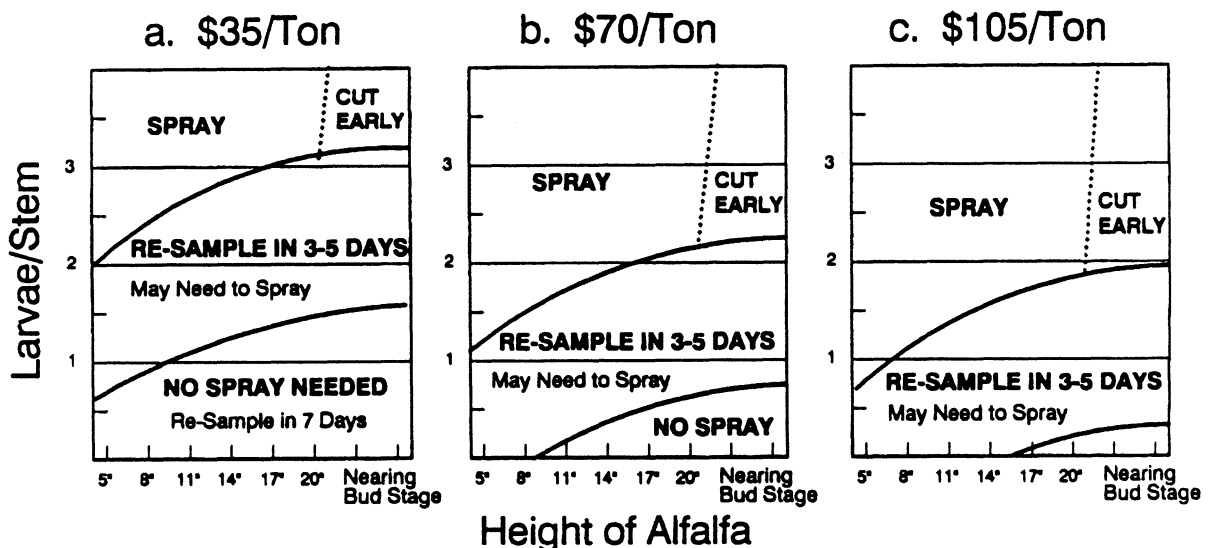
corresponds most closely to the price that you expect to get for your hay when and if you market it. If alfalfa prices are between these values, use your judgement and interpolate between the lines on the charts if you feel comfortable doing that.

Each field must be scouted separately because weevil infestations are not uniform from field to field. Do not treat a field unless the weevil infestation is high enough to justify the cost of insecticide application and harvest is not imminent.

For additional information about the biology, life cycle, and management of the alfalfa weevil, refer to NebGuide G73-30, "The Alfalfa Weevil". Alfalfa weevil management, including a list of insecticides registered for its control, is discussed in detail in EC90-1511, "1990 Insect Management Guide for Alfalfa, Soybeans, Wheat, Range, and Pasture". Both publications are available from your local University of Nebraska Cooperative Extension office.

Steve Danielson

Alfalfa Weevil Stem Count Method

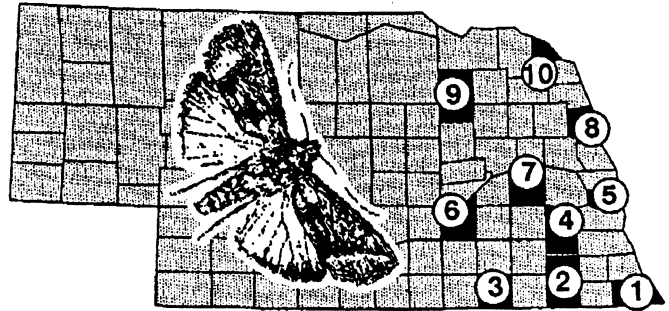


Black Cutworm Trapping Program Helps Predict Moth Migration

Recent mild weather and southerly winds have facilitated black cutworm moth migration into southeastern Nebraska. The black cutworm is not a primary pest of corn and sorghum, but occasionally it causes serious damage in some areas of eastern Nebraska. Thus, the moth migration is monitored annually to determine the potential for significant injury.

This year, pheromone traps have been installed in 10 counties across the eastern half of the state. (See map.) Only low numbers of moths have been captured, but the numbers are expected to increase in the next few weeks. When a trap captures eight or more moths in two nights, a **significant capture** has occurred. This indicates that moth numbers are high enough to warrant concern for cutworm injury later in the season. However, weather and field conditions subsequent to moth egg-laying activities play an important role in the development of black cutworms.

Prolonged mild, moist weather following peak moth flights is conducive to black cutworm outbreaks. Fields with



Counties where black cutworm pheromone traps have been installed.

substantial weed growth are at higher risk of infestation by black cutworms. If a significant capture has occurred and conditions are favorable for cutworm outbreaks, first cutting by black cutworms is expected about 300 growing degree days (GDD) (base 50°F) after the significant capture date. Such information can be used to alert growers to scout fields at the proper time.

Jim Kalisch

IPW News Contributors

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