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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 91-3] [March 29, 1991]

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Insect Science Plant Disease Weed Science NEWS

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

No. 91-3 **March 29, 1991**

In This Issue

PLANT DISEASE

Wheat Stands Good; Begin Scouting for Crown Rot

This is a good time to begin checking for crown rot in wheat. With the recent moisture and warmer temperatures, the winter wheat will be showing some dramatic changes in color and growth. We have received only a couple reports of stand problems. In general, the wheat that I have seen has good color, and I did not notice any serious stand problems. Usually, if we are going to have problems with crown rot, they will begin appearing in early April.

Checking to determine the extent of crown injury is fairly straight forward. Dig several plants, both healthy and sick. Clean the soil from the roots and slice through the crowns with a knife. If the crowns are healthy, they will appear white; if they are infected, they will appear brown. The extent of crown necrosis will often be the deciding factor in determining if the plant will live or continue declining.

Some growers are too quick to destroy wheat fields with marginal stands. If the stand is questionable, before destroying it, try to determine the cause and to estimate the extent of damage. Check the condition of crowns and roots.

In eastern Nebraska look for chinch bug, Hessian fly, soilborne wheat mosaic, or other evidence of possible causes. In addition to the disease and insect problems, wheat this time of year often takes on a chlorotic appearance due to cold soils restricting nitrogen uptake. Plants also may appear purple in response to cool temperatures.

After having dealt with early season wheat problems for many years, my advice to growers is to check the wheat closely, be patient, and get help if you think there is a problem.

John Watkins

Pre-plant Testing for Corn Nematode May Help

We received several calls last week concerning the value of pre-plant soil sampling of corn fields to assess the potential for later-developing nematode problems. In theory, this is a good idea; in practice it has some pitfalls. However, it may be better than doing nothing — and could begin to build an information on suspect fields as an aid in deciding whether control methods are justified.

Probably the best time to assay for plant nematodes is during the growing season. More consistent and informative results are obtained when fields are sampled from about a month after planting until the plants begin to dry down in the fall. Soil sampling in the absence of live plants (during the dormant season) may lead to more erratic results because of generally lower nematode populations, nematode dispersal into deeper soil levels, and nematode life stages less easily recovered from the soil.

Even with these shortcomings, pre-season results can be meaningful. For instance, information on overwintering survival of particular kinds of nematodes (needle or sting) and their population levels might identify the need for a planting time nematicide application. Pre-season results could also serve as a benchmark against which the results of mid-season assays could be compared. In this way, changes in population levels could be monitored and significant increases detected.

Pre-plant soil sampling should be done when the ground is in good working condition — neither bone dry nor too wet. A soil probe or pointed shovel, a mixing bucket, and small plastic bags or moisture-proof boxes are the only items needed. Collect a number of subsamples to represent a land mass (15 or 20 subsamples for areas up to an acre in size).

A subsample consists of a vertical column of soil 8 to 10 inches deep. Subsamples should be collected randomly within the "suspect" area. Composite these subsamples into the bucket, mix well, and remove a single handful (no more than a pint) and place in the plastic bag or moisture-proof box. Clearly mark the container with a field and/or location identifier. If more than one part of the field is sampled, make sure all your sample numbers correspond to location identifiers on a field map or sketch.

Soil samples for nematode analysis should be sent to the Plant Disease Diagnostic Clinic, 448 Plant Sciences Hall, University of Nebraska, Lincoln 68583-0722, with the following information: grower's (and/or sender's) name and address, date of collection, soil texture, type and topography, last year's crop, condition or symptoms seen on last year's crop, soil insecticides used on last year's crop, and the crop to be planted this year.

David Wysong

For Your Information

The following new or revised publications were recently released by the University of Nebraska Department of Agricultural Communications. Contact your local Extension office for a copy.

G90-1001 Spray Drift of Pesticides. This NebGuide discusses conditions that cause particle drift, and methods private and commercial applicators may employ to reduce drift potential from pesticide spray applications.

RB 312 Soybean Chlorosis Studies on High pH Bottomland Soils. This publication includes research results on soybean chlorosis studies.

G77-361 Using Starter Fertilizers for Corn, Grain Sorghum, and Soybeans. Starter fertilizer may increase early growth of corn and grain sorghum. Grain yield increases from starter nutrients are most likely on low phosphorus soils and some sandy soils.

IPW News

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Lisa Brown Jasa, Editor

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Catch Diplodia Tip Blight Early

Diplodia tip blight is a common disease of older Austrian pines in Nebraska. Ponderosa, Scots, and mugo pines also can be infected. Trees with repeated infections can become disfigured and eventually die. Fortunately, Diplodia tip blight can be effectively managed with fungicides and the time to apply those fungicides is approaching.

A close examination of the tree will allow for confident evaluation of the presence and extent of Diplodia tip blight. Disease symptoms include the browning and dying of branch tips. Infected branch tips will reveal stunted shoot tips with short, brown needles. Carefully pull a short, brown needle out of the fascicle sheath at the base of the needle. If Diplodia tip blight is present, there will be small, black fruiting bodies at the needle base. These can be easily seen with the naked eye and are rough to touch (like sand paper). Also, examine fallen cones. Infected cones will have the same black, fruiting bodies on the scales.

New shoots are highly susceptible to Diplodia tip blight infection for a two-week period that begins when the buds open. Research has shown that applying fungicides the third week of April and again the first week of May will provide adequate control most years. Fungicide applications after mid-May are ineffective.

Bordeaux mixture, fixed copper fungicides such as basic copper sulfate and Tenn-cop 5E are labeled for use on pines to control Diplodia tip blight. Thorough coverage of the tree is required for good results. Large trees may require that the treatment be applied by a commercial tree service firm. After the fungicide has dried onto the tree needles, treatment will not be adversely affected by rain. Once this disease is under control, it may not be necessary to spray every year.

Pruning infected branches and tips will improve the general appearance of the tree but does little for the reduction of disease development. Infected seed cones are the major source of inoculum and may remain on the tree for several years. The spores are spread primarily by rain splash. Younger trees which are not bearing cones are not usually infected with Diplodia tip blight unless they are planted near older infected trees.

Luanne Coziahr

INSECT SCIENCE

Pounce and Ambush Approved for Cutworms

The Nebraska Department of Agriculture has temporarily made two more insecticides available for control of army cutworms in wheat. Pounce and Ambush both contain permethrin as the active ingredient. These products were effective in controlling army cutworms in Kansas and Oklahoma earlier this year, according to Extension entomologists there.

Permethrin can be applied at the rate of 0.1 lb AI/Acre, which is 4 fl oz/Acre of Pounce 3.2EC or 6.4 fl oz/Acre of Ambush. According to the supplemental label which must be in the possession of the applicator when the products are used, the applications can be made by ground or air prior to the boot stage of wheat development.

No more than two applications can be made this season and cutting or grazing is not allowed within seven days of application. No applications can be made within 500 feet of any lake, wetland, or flowing river or stream. Do not apply these products when the wind speed is greater than 10 mph and do not apply them through irrigation systems.

For more instructions and restrictions, refer to the federal product label and the supplemental label.

We expect that the army cutworm problem may continue in Nebraska for a few more weeks at least. The cutworms will continue to feed and cause damage until they are approximately one and one-half inches long. It is expected that Pounce and Ambush will be legally available to control army cutworms in wheat for the next few weeks, however, a negative ruling by the EPA could end this use at any time.

Some problems with the army cutworm have also been noticed in alfalfa. Several effective insecticides are labeled for this use, including Sevin, Lorsban, Pounce, and Ambush. Alfalfa growers with new stands should be scouting those fields regularly to determine whether a problem exists. Established alfalfa stands can tolerate much more cutworm feeding than new stands and are less likely to require insecticide treatment.

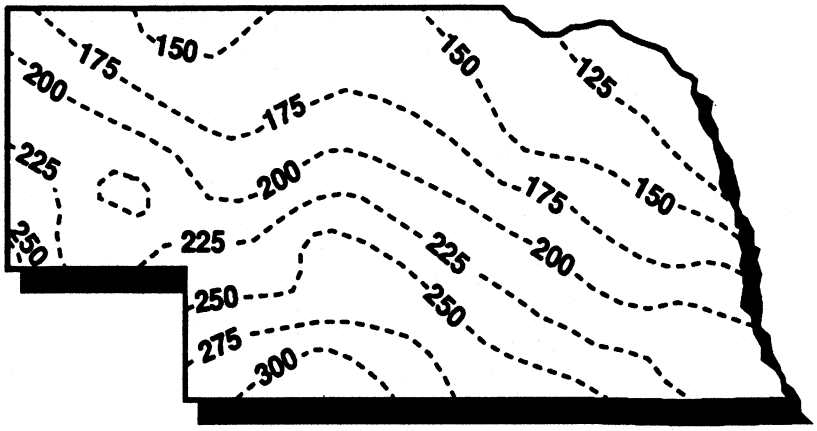
Steve Danielson

Accumulated Degree Days Predict Weevil Growth

Charts Aid in Determining Response to Weevils

No reports of alfalfa weevil activity were received from Nebraska counties as of March 25. Alfalfa growers are encouraged to begin scouting once alfalfa is6 inches tall and degree day accumulations reach 300 in their area. (See map)

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.



Accumulated degree days, base 48, for predicting alfalfa weevil development.

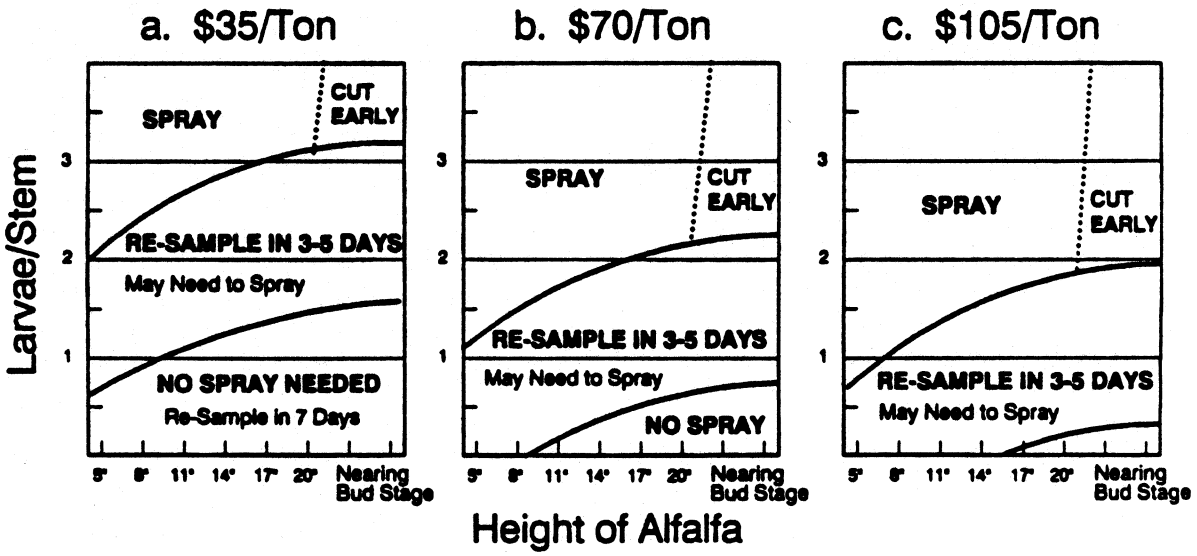
Each chart has been developed for a different alfalfa hay value (i.e. $35, $70, and $105 per ton). Use the chart that corresponds most closely to the price you expect to obtain for your hay if you market it. If alfalfa prices are between these values, use your judgement and interpolate between the lines on the charts.

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 the insecticide application and harvest is not imminent.

For more 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 control, is discussed in detail in EC91-1511, 1991 *Insect Management Guide for Alfalfa, Soybeans, Wheat, Range, and Pasture.* Both publications are available from your local Extension office.

Steve Danielson

Alfalfa Weevil Stem Count Method



WEED SCIENCE

Weed Control Essential to Successful No-Till

For no-till to be successful, weeds established prior to planting and weeds that emerge later must be controlled. The following strategies will help you effectively control weeds under a no-till crop production system.

The Planting Time Strategy

"Burndown" is one approach to no-till weed control used at planting time. A standard preemergence residual herbicide is applied in combination with a nonselective, foliar applied herbicide, such as Gramoxone Super or Roundup. The nonselective herbicide controls weeds present at planting and the residual herbicides provide weed control for the rest of the season.

The advantage is that a single herbicide application controls the weeds. The disadvantages are the added cost of this herbicide, erratic weed control if the weeds are excessively tall, and depleted soil moisture caused by early weed growth.

The Early Preplant Strategy

Early weed growth can be controlled successfully by applying an early preplant (EPP) herbicide. Ideally, an EPP herbicide is applied before weed seeds germinate. If weeds are already established, most EPP treatments include a triazine herbicide, such as Atrazine, Bladex, Lexone or Sencor, which have some effect on foliage. This effect can be greatly increased by adding either 2,4-D, crop oil concentrate, or 28% UAN solutions. If the weeds are taller than three or four inches, include a nonselective herbicide such as Roundup or Gramoxone Super.

Early Preplant Plus Pre-emergence or Postemergence Strategy

EPP treatments can be applied 10 to 15 days before planting corn. An EPP herbicide application, which includes both a grass and broadleaf herbicide, will normally provide season-long weed control. However, an additional herbicide treatment may be needed at planting time if the initial application is 20 to 30 days ahead of planting, or if the soil is disturbed significantly during planting.

No-till planters equipped with fluted coulters disturb the herbicide barrier in the row, which can result in "weed escapes." An extreme case can occur with the ridge plant system where the herbicide is removed along with the top 1.5 inches of soil. In this situation, apply either a preemergence or postemergence herbicide over the row.

Soybean and grain sorghum planting usually follow corn by 10 to 30 days. EPP treatments in these crops are usually applied 20 to 40 days before planting. An EPP herbicide application will seldom provide season-long control.

A split application, with one portion of the herbicide applied EPP and the other at planting time, helps maintain control. Another strategy is to apply an EPP treatment and follow up with a postemergence herbicide program. Not only is the operation spread out over an extended period, but you can choose a specific herbicide for a developing weed problem.

The early preplant strategy has several advantages. Because weeds are not established, early season weed control is usually more consistent, soil moisture is conserved, and the expense of the burndown herbicide is eliminated. The main disadvantage is that EPP applications will fail if rainfall does not activate the herbicide treatment. Also, if planting is delayed because of excessive rainfall, the herbicide may break down prior to planting and weeds can become established.

For late planted crops, sequential herbicide treatments are needed to maintain season-long control. This will require more time and labor than the burndown approach.

Bob Stougaard and Alex Martin

Compare Components in Combination Herbicides

The prepackaged herbicide picture continues to change. Evaluating weed control performance, crop safety, and carryover potential of combinations compared with tank mixtures is dependent on the amount of each component in the combination. Sometimes it is difficult to tell how much atrazine is contained in 3 quarts of Bicep or 3 quarts of Extrazine II.

The table on Page 18 lists the equivalent amount of each component contained in a gallon or pound of some common combination products. The totals don't always add up to 1 gallon or 1 pound of herbicide because the combination products may be more or less concentrated than the individual herbicides

Alex Martin and Bob Stougaard

Components in Individual Herbicides

Trade Name	*Equivalent Amount of Each Component In 1 Gallon or 1 Pound of Product*	*Manufacturer*
Betamix	4 qt Betanal + 4 qt Betanex	Nor-Am
Bicep 6E	3.3 pt Dual + 5.3 pt atrazine	Ciba-Geigy
Brominal 3+3	3 qt Brominal + 3 qt MCPA	Rhone-Poulenc
Bronate	2 qt Buctril + 2 qt MCPA	Rhone-Poulenc
Bronco	2.6 qt Lasso + 1.4 qt Roundup	Monsanto
Buctril + atrazine	2.0 qt Buctril + 2.0 qt atrazine 4L	Rhone-Poulenc
Bullet	2.5 qt Lasso MT + 1.5 qt atrazine	Monsanto
Cannon	2.5 qt Lasso EC + 0.5 qt trifluralin	Monsanto
Canopy 75 DF	0.86 lb Lexone DF + 0.43 lb Classic	DuPont
Commence	5.25 EC 3.0 qt Treflan + 4.5 pt Command	Elanco/FMC
Crossbow	1 qt Garlon + 2 qt 2,4-D	Dow
Curtail	2.0 qt 2,4-D amine + .38 lb ai clopyralid	Dow
Cycle	2.0 pt Dual + 2.0 qt cyanazine	Ciba-Geigy
Extrazine II 4-L	3 qt Bladex + 1.0 qt atrazine	DuPont
Fallow Master	1.5 qt Roundup + 0.6 qt Banvel	Monsanto
Freedom	2.67 qt Lasso EC + 0.33 qt trifluralin	Monsanto
Galaxy	3.0 qt Basagran + 1.3 qt Blazer	BASF
Gemini 60 DF	1.1 lb Lorox DF + 0.18 lb Classic	DuPont
Harmony Extra	0.67 lb Harmony + 0.33 lb Express	DuPont
Laddok	1.66 qt Basagran + 1.66 qt atrazine	BASF
Landmaster BW	1.2 qt Roundup + 1.9 qt 2,4-D	Monsanto
Landmaster II	1.2 qt Roundup + 1.0 qt 2,4-D amine	Monsanto
Lariat 4 F	2.5 qt Lasso EC + 1.5 qt atrazine	Monsanto
Lasso + atrazine	2.5 qt Lasso EC + 1.5 qt atrazine	Monsanto
Lorox Plus 60 DF	1.1 lb Lorox DF + 0.12 lb Classic	DuPont
Marksman	1.1 qt Banvel + 2.1 qt atrazine	Sandoz
Passport	2.4 qt Treflan + 0.8 pt Pursuit	Am. Cyanamid
Preview 75 DF	0.90 lb Lexone DF + 0.27 lb Classic	DuPont
Prozine 70 DF	0.35 qt Prowl + 0.35 qt atrazine	Am. Cyanamid
Pursuit Plus	2.8 qt Prowl + 0.8 pt Pursuit	Am. Cyanamid
Ramrod & atrazine	3 qt Ramrod + 1 qt atrazine	Monsanto
Rescue	4 qt Alanap-L + 4 oz 2,4-D	Uniroyal
Salute 4 EC	2.7 qt trifluralin + 1.3 qt Sencor	Mobay
Squadron 2.33 EC	2.0 qt Prowl + 1.75 pt Scepter	Am. Cyanamid
Sutazine	5.7 pt Sutan+ + 2.4 pt atrazine	ICI Americas
Trimec Super Brush Killer	4 parts 2,4-D + 4 parts 2,4-DP + 1 part Banvel	PBI-Gordon
Trimec Turf Herbicide	2,4-D, MCPP, Dicamba in 9:3:1 ratio	PBI-Gordon
Tri-Scept 3 E	2.6 qt trifluralin + 2.3 pt Scepter	Am. Cyanamid
Turbo 8 E	6.6 pt Dual + 1.45 qt Sencor	Mobay
Turflon D	2.0 qt 2,4-D ester + 1 qt Garlon	Dow