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INSECT, PLANT DISEASE, & WEED SCIENCE NEWS [No. 92-15] [July 31,1992]

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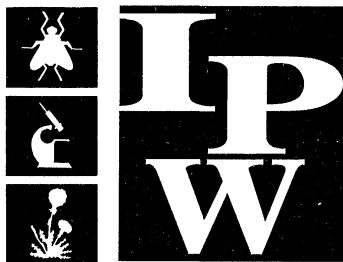
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Plant Disease

Corn rust likely to increase, but probably won't limit yield

Common rust is now widespread and prevalent in most corn production areas of Nebraska. Although not a serious problem on corn, growers and consultants may be concerned because it is appearing earlier than normal.

Common rust is caused by the fungus *Puccinia sorghi*. The disease is easily recognized as small pustules (called sori) on any above-ground plant parts. These pustules are found primarily on both leaf surfaces, in contrast to those of a

similar disease seen less frequently called southern rust. The southern rust fungus produces most pustules on the upper leaf surfaces. Common rust pustules are initially cinnamon brown in color and become dark brown to black as they age. Spores are released from mature sori and re-infect the same plant or are carried by wind currents to other plants.

Cool temperatures and high relative humidity favor rust development and spread. Thus, the past several weeks have been ideal for this disease. If the current rainy patterns continue, rust will become more evident but should not be yield limiting.

David S. Wysong
Extension Plant Pathologist

In south central Nebraska: Maize chlorotic mottle virus confirmed

I have recently received several samples of corn exhibiting symptoms of virus infection from Franklin, Gosper and Phelps counties. The bright greenish-yellow mottling was typical of that produced by maize chlorotic mottle virus (one of the necessary virus components of corn lethal necrosis).

Confirmation tests subsequently carried out by Stan Jensen and Les Lane, UNL plant pathologists, were positive for MCMV. The severity of the symptom expression and the widespread

geographic distribution of the samples submitted along with the mid-season occurrence would suggest that maize chlorotic mottle may be severe this year.

For more information about this disease, see *IPW News* No. 91-20 (Aug. 16, 1991) and No. 91-24 (Oct. 11, 1991) as well as a South Central Research and Extension Publication (UNL-SCREC-91/3: November 1991) which is available from my office.

Ben Douppnik, Jr.
Extension Plant Pathologist

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Plant Disease Clinic weekly update

Last week the UNL Plant Disease Diagnostic Clinic in Lincoln evaluated 45 crop and horticultural samples. Following is a breakdown by category:

Trees accounted for most of the samples with there being nine evergreen and eleven shade tree

Extension releases new agricultural publications

The following new or revised publications have been released by the University of Nebraska Cooperative Extension. most are available at your local Extension office or can be ordered by writing Bulletins, 105 ACB, PO Box 830918, University of Nebraska, Lincoln, NE 68583-0918. Nebraska residents can order one copy of up to 10 NebGuides free. When ordering more NebGuides than that, cost is 25 cents each. (NebGuides are denoted by a G preceding the order number.) Shipping, handling and state and local sales tax will be added when ordering from the Bulletin office in Lincoln. Prices for other publications, such as Extension Circulars (ECs) are listed below.

G1103 White Mold of Dry Beans. This NebGuide discusses one of the most significant diseases of dry beans in Nebraska and describes how to identify symptoms, the life cycle of the disease on beans and how to control it.

G892 Mixing Quality Pig Feed. Feed ingredients represent over 60 percent of the total cost of farrow-finish pork production. This NebGuide addresses quality control issues, feed mixing and laboratory use recommendations and lists commercial analytical laboratories serving Nebraska.

samples; diagnoses included: iron chlorosis of pin oak, *Cytospora* canker of Austree, *Phomopsis* blight of cedar, witches broom on cedar, spider mites on spruce (three samples were referred to the Department of Entomolgy for evaluation), and a variety of environmental causes on ash, red oak, scotch pine, birch, and sugar maple.

Diagnoses for soybeans (six samples) included *Phytophthora* root rot, environmental causes, and chemical burning. We had one sample of popcorn sent in for nematode analysis which was diagnosed with very high amounts of needle nematode (*Longidorus* spp.). Other notable samples include: leaf spot/melting out and rust on turf, *Phoma* stem canker on

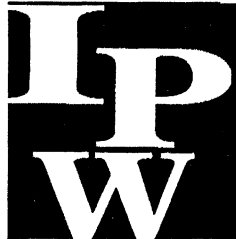
vinca, and scab on flowering crab. We have evaluated 594 samples so far this year.

Diane Merrell
Extension Assistant, Lincoln

Plant Disease Clinic to be closed Aug. 8-12

The Plant Disease Diagnostic Clinic will be closed Aug. 8-12. Our staff will be attending the American Phytopathological Society (APS) meetings in Portland, OR, at this time. Please send your samples by Aug. 4 or after Aug. 12 so they will not disintegrate before one of our specialists has a chance to examine them.

David S. Wysong
Extension Plant Pathologist



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Lisa Brown Jasa, Editor

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High moisture, low temperatures contribute to below normal degree day accumulations

Nebraska precipitation has gone from arid like conditions in April and May, to monsoon like conditions in June and July. In April and May, most of the state experienced 75% or less of normal precipitation, with areas west of North Platte averaging less than 30% of normal (Table 1). However, unusually wet conditions in July allowed almost every location in the state to experience at least normal precipitation and some to record 300% to 400% of normal rainfall. Normal July precipitation averages about 2.00 inches across the Panhandle to 3.50 inches in the extreme eastern sections of the state.

The ample moisture has improved soil moisture conditions under dryland crops. As of July 24, the Nebraska Agricultural Statistics division was reporting that the state average topsoil conditions were 1% short, 68% adequate, and 31% surplus. Subsoil moisture was rated as 2% short, 94% adequate, and 4% surplus. Soil moisture models developed by the High Plains Climate Center indicate an average moisture deficiency of 1 to 4 inches in a six-foot profile for the dryland cropping regions of the state. This corresponds to moisture conditions at 80% to 95% of field capacity. While the moisture has been beneficial in many areas, the excessive rain has caused crop losses due to flooding and hail damage. Crops also are experiencing environmental problems from high moisture and low sunshine, such as leaf yellowing, silting of roots, and slower than normal growth.

The wet conditions have also led to below normal temperatures and accumulated growing degree day (GDD) units. The cool weather coupled with a late May frost and widespread hail damage have increased concern about crop maturity before the fall frost. For crops not affected by the May freeze, phenology data indicates corn, soybean, and sorghum are running 10 to 14 days behind normal growth. If normal temperatures are experienced for the remainder of the season, models estimate maturity for soybeans between Sept. 5 and 12, with corn and sorghum estimated to mature between

(Continued on page 4)

Table 1. Precipitation as a percent of normal for selected sites in Nebraska

Station	4/1 - 6/1	4/1 - 7/26	6/27 - 7/26
	%	%	%
Shelton	26	78	142
Central City	124	158	242
Lincoln	64	87	174
Mead	46	82	204
Rising City	64	142	272
Tarnov	49	72	161
Dickens	38	76	154
Champion	17	96	218
Curtis	46	77	136
Grant	15	84	158
McCook	30	64	104
North Platte	37	68	109
Red Cloud	58	102	225
Clay Center	45	108	238
Beatrice	168	200	334

Table 2. Average freeze dates

Station	Temperature (Degrees Fahrenheit)	
	32	28
Ainsworth	10/08	10/18
Gothenburg	10/03	10/15
Hastings	10/14	10/24
Mitchell	09/24	10/05
Ogallala	09/30	10/04
Tecumseh	10/06	10/15
Wakefield	09/29	10/05

Table 3. GDD units accumulated and GDD units which will accumulate if normal temperatures persist for the period.

Station	Accumulated	Accumulation given;	Accumulation given;
	5/15 - 7/26	normal conditions	normal conditions
		7/26 - 10/1	7/26 - 10/15
Scottsbluff	1159	1114	1250
Sidney	1146	1031	1272
Ainsworth	1091	1207	1332
Halsey	1073	1242	1363
Concord	1213	1220	1367
Gibbon	1208	1277	1424
Lexington	1230	1264	1417
Mead	1326	1296	1437
McCook	1225	1310	1487
Red Cloud	1380	1315	1479
Beatrice	1349	1242	1363

High moisture *(Continued from page 3)*

Sept. 15 and 22. Table 2 lists the average freeze dates for temperatures of 28°F and 32°F. Producers can expect an average frost date of 32°F on Sept. 24 in the Mitchell area to Oct 14 or later in the eastern and southern sections of the State. Correspondingly, western areas can expect an 28°F freeze by Oct. 5, while eastern sections and southern sections average around Oct. 24.

The major concern for frost damage is to replanted fields. Table 3 shows the amount of GDD units accumulated since May 15, along with the GDD units which

will accumulate through Oct. 1 and Oct. 15 if normal temperatures are experienced for the remainder of the growing season. Corn varieties generally require 2400 to 2800 GDD units to reach maturity, Soybeans require 2100 to 2400 GDD units, and sorghum 1900 to 2400 GDD units. Table 3 indicates that producers who planted long season varieties in May, along with replanted fields in western sections of the state will be most susceptible to freeze damage this fall. If temperatures remain normal, GDD accumulations from May 15

through Oct. 15 will range from 2400 in the western panhandle to 2800 in the southern and eastern sections of the state. To escape crop losses due to a fall freeze, temperatures across Nebraska will have to average 3°F to 5°F above normal for the remainder of the growing season. In addition, a later than normal frost must occur to spare many Nebraska producers from yield losses this growing season.

Al Dutcher
State Climatologist, UNL

Grants available for sustainable agriculture

Producers interested in sustainable agriculture, including pest management possibilities, may be interested in a new grant program available in Nebraska.

The North Central Region of the Sustainable Agriculture Research and Education Program will

be awarding about \$100,000 in mini grants to help farmers and ranchers in the 12-state region change from conventional to sustainable agriculture systems. Application deadline is Sept. 4.

Grant application forms are available from the North Central

Region Sustainable Agriculture Research and Education Office, 207 Agriculture Hall, University of Nebraska, Lincoln, NE 68583-0704.

Steven Waller, Regional Coordinator
Sustainable Agriculture
Research and Education Program

Insect Science

Control flies before they ruin county fair fun

Plan now to control fly problems at county fairs. One or two days before the fair starts, spray livestock buildings, barns, and sheds with a residual insecticide. Do not contaminate feed or water. Recommended sprays include Atroban, Ectiban, or Permethrin II (synthetic pyrethroid products) and Baytex. Methoxychlor, or Rabon (organophosphates). Sprays applied to ceilings and walls, to the point of run-off are effective for one to two weeks. Insecticidal baits should NOT be used anywhere on the fairgrounds. Weeds and tall grasses should be mowed to eliminate resting areas for flies.

If flies become a problem in livestock facilities after animals are present, Vapona, Dibrom, or insecticides containing pyrethrins can be applied using a small, portable fogger or mister. This should be done in the morning before people arrive. Show animals can be treated with insecticide wipes (containing Atroban, Ectiban, Methoxychlor, Permethrin II or Rabon). Read the label for mixing instructions.

Odors from food stands and food-handling establishments are particularly attractive to flies. Laws restrict the type of control measures that can be used in these

areas. Sticky fly ribbons (containing no insecticide) can be hung in food stands. Use garbage cans with tight-fitting lids where people are present. During the fair, after the foodstand closes for the night, aerosol sprays containing pyrethrins can be used according to the manufacturer's directions. Food, utensils, and handling surfaces should be covered with a nonabsorbent material, such as plastic, before applications. Finally, fair officials should have manure and garbage removed daily.

Jack Campbell
UNL Entomologist