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CropWatch No. 95-18, Aug. 4, 1995

Lisa Brown Jasa

University of Nebraska-Lincoln, ljasa@unlnotes.unl.edu

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CROP WATCH

University of Nebraska Cooperative Extension
Institute of Agriculture and Natural Resources

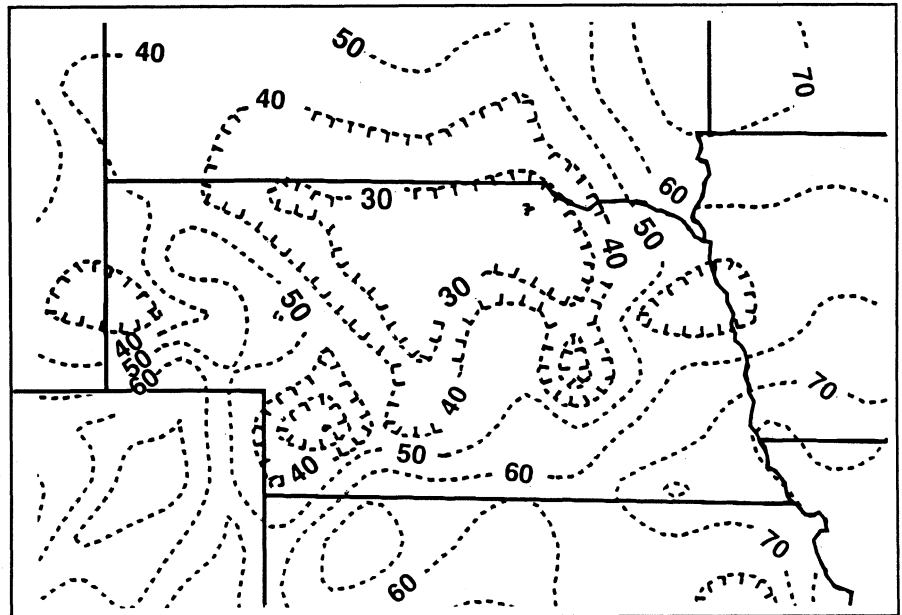
No. 95-18
Aug. 4, 1995

Soil moisture limited; dryland corn suffers

Limited subsoil moisture, disease and insect pressures are continuing to stress this year's corn crop, causing special concerns for dryland producers in western and northeastern Nebraska. State soil moisture statistics for a six-foot depth indicate that levels across much of the state are at 30-50% of capacity. In addition, existing moisture is likely to be at the bottom of the soil profile. Corn already under stress may not have developed roots deep enough to reach the water. Nebraska's subsoil moisture situation appears to be among the worst in the region.

On Monday the Nebraska Agricultural Statistics Service estimated subsoil moisture in the state to be 44% short to very short and 56% adequate. This is slightly down from last week when it reported 28% short to very short and 70% adequate moisture. The crop, both irrigated and dryland, continues to be one to three weeks

(Continued on page 132)



Percent of soil moisture capacity for a six-foot depth, compiled July 31 based on data from automated weather stations across the state. Areas below 50% are considered to be under stress. Numbers can vary 10-15%.

Test soil, irrigate to ensure adequate subsoil moisture

In many years early August is when producers decide when to apply the last irrigation of the season. This year is different; much of our corn crop is at the critical reproduction stage and the weather conditions have caused high evapotranspiration demand. It is critical that the corn crop have adequate moisture during the silking, pollination, and blister

kernel stages. Soybeans will need favorable moisture as they complete flowering and move into the bean fill stage. This moisture must be provided by stored soil moisture, irrigation or rainfall. Most of the state has not received enough rainfall and irrigation, where possible, may be needed.

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Irrigate

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It is important to monitor soil moisture conditions as irrigation decisions are made. Use a soil probe and the guidelines in *Estimating Soil Moisture by Appearance and Feel* (G84-690) to determine the soil moisture status. Most crop consultants are monitoring soil moisture during their weekly field visits. The soil moisture status along with the crop water use estimates from the network of automated weather stations can be used to project irrigation needs (See below). Keep in mind the current growth status of the crop and the crop water needs; most of our crops are later than normal.

If weather conditions moderate and fields don't receive significant rainfall, we are still some time away from deciding when to apply the last irrigation. The critical factor at this point is to meet the water needs of the crop.

DeLynn Hay, Extension Water Resources Specialist
Norm Klocke, Extension Agricultural Engineer
West Central District

Get your own stats

To check on daily precipitation and evapotranspiration amounts for your area, contact your Extension agent (some counties offer daily reports) or contact the UNL Department of Agricultural Meteorology for help accessing information generated daily from the weather stations. Individuals wanting to access the information through their computer and a modem can call 402-472-6615 to enter the system. Help files are available online. For additional assistance, the department has prepared a one-page handout on using the system. Contact UNL Agricultural Meteorology, 236 L.W. Chase Hall, Lincoln, NE 68583-0728, call (402) 472-3679 or fax (402) 472-6614.

Subsoil moisture (Continued from page 131)

behind average maturity for this time of year.

Even with the record-breaking hot spells in July, the average temperature for the month is expected to be only slightly above normal. May and June averages were below normal and forecasts for August through October indicate continued below normal temperatures.

While precipitation in some areas of the state this week was beneficial, corn is currently using .25 to .33 inch of moisture daily. Irrigators should be not be lulled into a sense of security based on topsoil moisture since subsoil moisture throughout much of the state continues to be significantly below normal.

While it's estimated that approximately two-thirds of the state's 5.2 million acres of corn is irrigated, significant rains will be needed in the next few weeks for much of the state's dryland crop to make adequate yields. In the northeastern part of the state, dryland corn is showing significant stress.

Al Dutcher
State Climatologist
Agricultural Meteorology
Paul Hay
Extension Educator, Gage County
Charles Shapiro
Extension Soils Specialist
Bill Kranz
Extension Agricultural Engineer



CROPWATCH

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Lisa Brown Jasa, Editor

For more information about a particular subject, write the authors at the addresses below:

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

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

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

UNL Department of Agricultural Meteorology
236 L.W. Chase Hall
Lincoln, NE 68583-0728

Choose wheat seed carefully to avoid future disease problems

With the high incidence of head and leaf diseases in eastern and south central Nebraska, growers should be cautious about using their own wheat for seeding this fall. Growers in these areas may want to obtain seed from western Nebraska where disease incidence was light and yields and test weights were good. Although certified seed is a fairly good guarantee of high seed quality, it is not always necessary to use certified seed each year. If certified seed is not used then take these precautions:

- Don't use seed from fields with scab, loose smut, bunt or Septoria glume blotch.
 - Have the germination checked.
 - Treat the seed with a seed treatment fungicide.
 - Increase the seeding rate if you still have doubts about the quality or you don't have answers to any of the above.
- When choosing wheat varieties, select those that compliment each other in maturity, yield and disease resistance. There is no perfect variety but there is a range of

disease resistance or tolerance among varieties. For example, 'Alliance' is susceptible to leaf rust but has some tolerance to wheat streak mosaic. The reverse is true for 'Arapahoe'. 'Longhorn', 'Redland' and 'Vista' are moderately resistant or tolerant to both diseases. Resistance to disease does not always guarantee good yields but it is insurance against disease losses. Disease outbreaks are difficult to predict, so planning ahead may pay off in the long run.

John E. Watkins
Extension Plant Pathologist

Phytophthora root and stem rot identified in soybeans

The Plant and Pest Diagnostic Clinic received some soybean samples late last week that showed the classical symptoms of Phytophthora root and stem rot. The cool, wet spring may have set the stage for the disease, but the more recent hot, dry weather almost certainly promoted its obvious above-ground symptoms.

On older plants, symptoms consist of yellowing between veins and along margins of lower leaves. Upper leaves become chlorotic, and then the plant wilts completely. Wilted and/or dead leaves commonly remain attached. A dark brown discoloration often progresses from the soil line up the stem to include the lower three to five branches (nodes). Affected plants usually occur in groups in a row rather than singly.

While nothing can be done to minimize this year's problem, growers need to scout their fields and recognize the disease for what it is, rather than thinking it is something else. Appropriate management strategies can then be followed the next time soybeans are planted into those fields. Strategies include crop rotation, reducing compaction, improving drainage, use of certified seed of a Phytophthora resistant or tolerant cultivar, and applying metalaxyl as a seed (Apron®) or soil treatment (Ridomil®) at planting.

David S. Wysong
Extension Plant Pathologist

Pesticide information available toll-free

The National Pesticide Telecommunications Network (NPTN) is available weekdays to provide science-based information on pesticide-related issues, including:

- pesticide product information
- pesticide poisoning recognition management
- toxicology and symptomatic reviews
- health and environmental effects and clean-up and disposal procedures.

To reach the Network, call the toll-free number, (800) 858-7378, between 8:30 a.m. and 6:30 p.m. Monday through Friday.

In addition NPTN information will soon be available electronically.

NPTN is now housed at Oregon State University.

Larry Schulze
Extension Pesticide Coordinator

Test for nutrients, correct deficiencies before establishing alfalfa this fall

Before establishing a new alfalfa seeding this fall or next spring, have the soil tested for pH, buffer pH, organic matter and the phosphorus and potassium indexes. On sandy soils, a sulfur test also may be needed. This soil test will alert you to potential nutrient deficiencies so they can be corrected before planting.

Lime

Soils in eastern Nebraska are likely to be acid and may require lime for top alfalfa production. A lime requirement is suggested when the pH falls below 6.2. Liming the acid top soil is important to establishing the new seeding. Once alfalfa roots reach the lime layer in the sub soil, the response from lime reduces. However, the depth to lime varies plus the effect of correcting the topsoil pH lasts for at least 8-10 years.

Phosphorus

If phosphorus is required, it is best to broadcast and incorporate the requirement amount of phosphorus prior to seeding.

Under dryland noncalcareous soils (soils with pH below 7.3 and no free lime), the suggested rate of phosphorus can be doubled or tripled and incorporated prior to seeding. This will supply phosphorus for at least three years.

On calcareous soils, it is best to incorporate the recommended rate prior to seeding and then topdress (broadcast) phosphorus each year.

For irrigated alfalfa, it is suggested that require phosphorus be applied prior to seeding and then topdressed annually with the same rate.

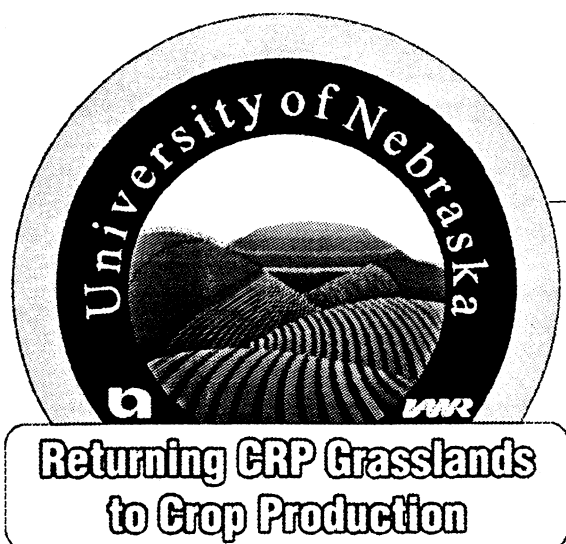
If for some reason needed phosphorus did not get applied

prior to seeding, topdressing will help. However, topdressing on a new seeding is not as efficient as incorporation with the soil. On sandy soils low in organic matter, sulfur may be needed every year or every other year for top production.

Under irrigation, analysis or the irrigation water is suggested because the irrigation water might contain sufficient sulfur and boron. The only place boron has been found to be deficient for alfalfa in Nebraska is on some sandy soils low in organic matter. If boron deficiency is expected, the soil should be tested for boron, or small strips at rates of 1 pound boron per acre could be tried. There is a fine line between boron toxicity and deficiency.

Ken Frank
Director

UNL Soil Testing Laboratory



Beginning next week **CropWatch** will feature stories on different aspects of returning CRP grasslands to crop production. The stories, written by UNL Extension specialists, will address CRP opportunities; crop selection and rotation, tillage and planting considerations; vegetation and weed management; insect and disease considerations; soil water and fertility.

Nebraska weather data*

<i>Base 50**</i>	<u>Growing degree days**</u>			<u>Evapotranspiration rates for corn</u>					
	<i>5/14</i> 50	<i>5/28</i> 50	<i>6/10</i> 50	<i>Emer</i> <i>date</i>	<i>Prior</i> <i>week</i>	<i>Prior 3</i> <i>days</i>	<i>7/30</i>	<i>Next</i> <i>3 days</i>	<i>Next</i> <i>Week</i>
Ainsworth	1287	1188	1034	5/25	0.38	0.41	0.42	0.39	0.36
Alliance	1060	985	877	5/25	0.40	0.46	0.43	0.42	0.39
Arthur	1167	1084	958	5/25	0.39	0.44	0.44	0.41	0.38
Beatrice	1511	1381	1179	5/25	0.29	0.30	0.31	0.33	0.34
Central City	1415	1295	1114	5/25	0.28	0.32	0.32	0.35	0.35
Clay Center	1421	1300	1116	5/25	0.32	0.35	0.34	0.36	0.36
Concord	1381	1254	1091	5/25	0.39	0.44	0.43	0.39	0.35
Curtis	1292	1191	1032	5/25	0.39	0.43	0.47	0.41	0.40
Elgin	1376	1261	1101	5/25	0.38	0.43	0.42	0.40	0.37
Gordon	1078	1000	890	5/25	0.38	0.42	0.37	0.40	0.37
Grant	1205	1113	969	5/25	0.39	0.44	0.44	0.43	0.41
Holdrege	1376	1261	1082	5/25	0.38	0.41	0.39	0.39	0.38
Lincoln	1596	1454	1248	5/25	0.33	0.35	0.35	0.35	0.35
McCook	1371	1257	1080	5/25	0.42	0.45	0.49	0.42	0.41
Mead	1510	1370	1170	5/25	0.34	0.36	0.35	0.35	0.34
North Platte	1259	1163	1009	5/25	0.34	0.36	0.35	0.35	0.34
O'Neill	1283	1176	1015	5/25	0.31	0.36	0.37	0.36	0.35
Ord	1352	1247	1086	5/25	0.37	0.44	0.47	0.40	0.37
Red Cloud	1459	1335	1140	5/25	0.39	0.41	0.43	0.40	0.38
Rising City	1451	1325	1140	5/25	0.36	0.39	0.38	0.38	0.37
Scottsbluff	1138	1062	942	5/25	0.36	0.38	0.35	0.40	0.40
Shelton	1405	1286	1110	5/25	0.27	0.29	0.29	0.33	0.35
Sidney	1074	1000	894	5/25	0.44	0.48	0.47	0.44	0.41
Tarnov	1384	1262	1088	5/25	0.34	0.38	0.40	0.37	0.36
West Point	1447	1312	1135	5/25	0.38	0.43	0.43	0.39	0.35

*Data compiled up to July 31, 1995

**Corn tasseling/silking normally begins at approximately: 1200 GDDs (short season); 1300 GDDs (mid season); or 1400 GDDs (long season)

**Base 50 is used for corn, sorghum and soybean production.

Precipitation (7-day summary ending July 30)

	7/24-7/30			9/1-7/30		
	Act.	Nrm.	%	Act.	Nrm.	%
Ainsworth	.28	.71	39	22.49	19.54	115
Alliance	.07	.49	14	15.12	14.67	103
Arthur	.64	.70	91	18.51	16.64	111
Beatrice	.47	.80	59	28.02	26.07	107
Central City	.01	.70	1	16.68	23.78	70
Clay Center	.08	.72	11	22.66	23.87	95
Concord	.00	.70	0	21.70	24.63	88
Curtis	.63	.70	90	13.10	18.42	71
Elgin	.04	.70	6	14.26	22.21	64
Gordon	.20	.68	29	18.43	16.09	115
Grant	.12	.63	19	16.05	16.93	95
Holdrege	.04	.77	5	19.60	22.14	89
Lincoln	.10	.70	14	21.98	24.73	89
McCook	.00	.70	0	14.98	18.13	83
Mead	.00	.77	0	19.84	30.46	65
North Platte	.47	.67	71	17.17	17.45	98
O'Neill	.16	.77	20	22.09	20.79	106
Ord	.00	.70	0	22.32	20.74	108
Red Cloud	.09	.77	12	22.32	23.01	97
Rising City	.00	.70	0	21.77	23.16	94
Scottsbluff	.04	.42	9	15.82	14.12	112
Shelton	.73	.63	116	21.08	21.98	96
Sidney	.28	.56	49	21.42	14.26	150
Tarnov	.16	.70	22	20.90	22.82	92