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## CropWatch No. 94-6, April 29, 1994

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# CROP WATCH

University of Nebraska Cooperative Extension  
Institute of Agriculture and Natural Resources

No. 94-6  
April 29, 1994

## Potential for water shortage is real

Below normal spring precipitation and concern about a continued dry spell led to this season's first meeting of the state Water Availability and Outlook Subcommittee Tuesday afternoon.

The subcommittee of the Climate Assessment Response Committee (CARC) is chaired by Don Wilhite, UNL professor of Agricultural Meteorology, and includes representatives of the Nebraska Department of Water

Resources, Natural Resources Commission, UNL Department of Agricultural Meteorology, UNL Conservation and Survey Division, the National Weather Service, and the U.S. Geological Survey. CARC replaced the governor's Drought Assessment and Response Team (DART) in 1993.

Concern has been increasing about how the lack of precipitation could affect Nebraska interests if it continues through the summer.

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*If this trend continues, serious water deficiencies may become prevalent by mid-July.*

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Issues addressed during the meeting are discussed below.

Ample surface water is available across the state because of two consecutive years of above normal precipitation. No water restrictions are expected for surface irrigators this growing season. Water levels in major reservoirs supplying water to Nebraska irrigators are at or above their 10-year averages.

Of particular concern are water levels within those Wyoming reservoirs which service Nebraska irrigators. Levels were at 51% of approved capacity as of March 31 compared to 32% on March 31 last year. Although

*(Continued on page 43)*

## Chinch bug numbers low; alfalfa weevils begin feeding

Recent surveys in southeast Nebraska and northeast Kansas found very low numbers of chinch bugs. Growers should not expect widespread, significant problems from in these areas this season. It is possible that a few isolated hot spots could develop, however, so scout corn and sorghum fields, particularly when nearby wheat begins maturing later this year.

Alfalfa weevil feeding is likely occurring throughout much of Nebraska as the growing degree day accumulations would indicate that we have had egg hatch across all the state. Weevil infestations have generally been reported as low in both Oklahoma and Kansas. This may or may not be the case here in Nebraska. Begin scouting alfalfa fields now for the presence of weevil larvae and feeding damage.

Those of you who had fields flooded last season may be wondering whether soil insecticides are necessary this year. If the field did not have corn or flowering weeds growing on it during July and August, it is very unlikely that corn rootworm beetles migrated into the field to lay eggs. It is possible that cutworms, wireworms, or other seed/seedling destroyers could be a problem in these fields, however, so the best advice is to scout the fields before planting and after plant emergence. Make treatment decisions only after pests are observed and numbers justify treatment costs.

Pale western cutworms are causing significant damage to wheat in the southern Panhandle at this time. Scout wheat for feeding damage and cutworms.

Steve Danielson  
Extension Entomologist

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# Evaluating starter fertilizer applications

Producers remembering the cool weather conditions in 1992 and 1993 are asking whether starter fertilizers would be beneficial in 1994. Rates, placement, and kinds of starter fertilizer are being evaluated. There is no one answer that fits all.

First, a starter fertilizer is defined as "the placement of a small quantity of fertilizer nutrients in a concentrated band beside the seed at planting time." A broadcast fertilizer application, even though it contains phosphorus, is not a starter. The main reason for using a starter fertilizer on corn or grain sorghum is to stimulate early growth.

Band placement of a phosphorus fertilizer is an excellent way to correct a phosphorus deficiency in soils that are less than 16 ppm Bray P<sub>1</sub>. On these low phosphorus soils, early growth response is likely and a yield increase is possible. For soils that test above 15 ppm phosphorus, a growth response is likely;

however, a yield increase would not be expected in most years, except in very sandy soils where a nitrogen-sulfur starter may be beneficial.

There are many kinds of starter fertilizer. Liquid and dry formulations are considered to be equally effective. Starter fertilizers commonly have a 1:3 ratio of N:P<sub>2</sub>O<sub>5</sub>. This is a good ratio for soils low in phosphorus.

For soils medium to high in soil phosphorus (16-45 ppm), a starter may increase early growth, but the ratio of N:P<sub>2</sub>O<sub>5</sub> can be changed. For fine textured soils (loams, silt loams, silty clay loams, and silty clays) a 1:2 or 1:1 ratio of N:P<sub>2</sub>O<sub>5</sub> will be effective and less expensive than a 1:3 N:P<sub>2</sub>O<sub>5</sub> starter.

For sandy soils high in phosphorus, a starter with a 1:1 or 2:1 ratio of N:P<sub>2</sub>O<sub>5</sub> would be a good choice. Also, on very sandy soils low in organic matter, adding sulfur often will improve early growth.

Potassium is not a required nutrient in a starter fertilizer for most Nebraska soils unless the soil test for potassium is 150 ppm or less. Zinc can be added to a starter fertilizer when the DTPA test for zinc is 0.8 ppm or less.

More information on starter fertilizers is available in NebGuide G77-361, *Using Starter Fertilizers for Corn, Grain Sorghum, and Soybeans*.

Ed Penas  
Extension Soils Specialist

## Cleaning, disposing of contaminated gloves

After using gloves which have become contaminated with pesticides, wash your gloved hands with soap and water, then put the gloves into a plastic bag until they can be washed more thoroughly. Don't leave used gloves on the floor of your pick-up truck or in places where family members might touch them.

It may be a good idea to replace gloves regularly, depending on your exposure situation. Dispose of gloves as you would empty containers or bags. Cut them up so no one will ever use them again if they are discarded with your trash.

Rose Marie Tondl  
Extension Clothing Specialist



## CROP WATCH

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Lisa Brown Jasa, Editor

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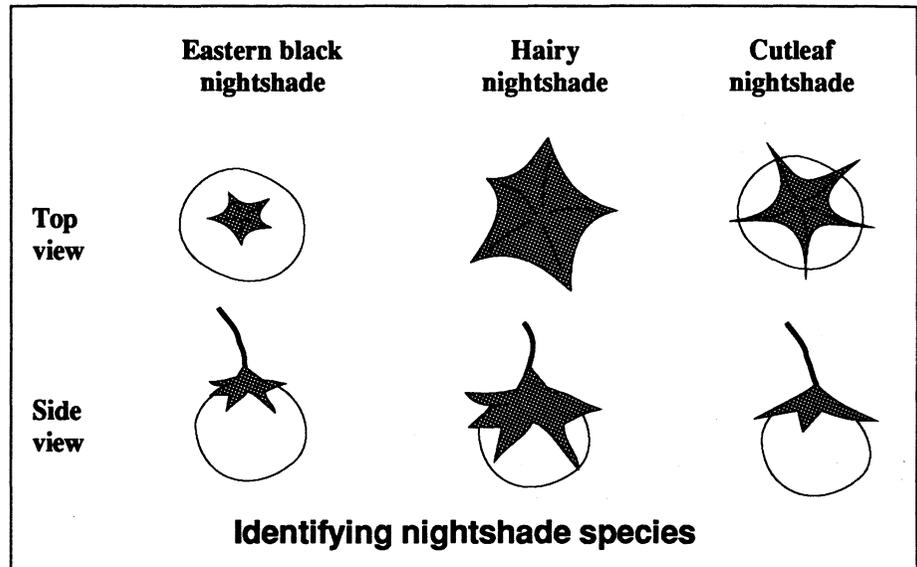
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# Nightshade identification key to control

Nightshades are common agricultural weeds in North America. In Nebraska, nightshades are a major weed in sugarbeets, soybeans, dry beans and potatoes. Weed manuals and many other published reports use a rather broad definition of black nightshade to refer to several nightshade species. Characteristics used to identify nightshade species vary with environmental conditions.

Characteristics such as leaf shape and the presence or absence of hair will vary within one species from one location to another. Because of the variability in leaves, most botanists have relied on flower and fruit characteristics to identify nightshade species. In Nebraska, three nightshade species can be found competing with crops: hairy nightshade, eastern black nightshade, and cutleaf nightshade.

In 1990 and 1991 dry edible bean processors from across Nebraska were asked to save a representative sample of nightshade berries from beans delivered to their facilities. Nightshade was collected from 57 growers in 1990 and 40 growers in 1991. In 1990, 7% of the nightshade berries collected were from eastern black nightshade and 93% were from hairy nightshade. Hairy nightshade berries were collected from all the dry bean growing regions of the state while eastern black nightshade was collected from Champion, Imperial, Grant, and Bridgeport. In 1991, all the nightshade berries collected were from hairy nightshade. Fourteen percent of the nightshade seed collected in 1990 and 12% in 1991 germinated, emerged, and produced mature plants which could be identified. Data collected for 1990 and 1991 suggests that hairy nightshade has adapted and can be found in all the dry edible bean growing regions and



has been observed as far west as Bridgeport.

Hairy nightshade leaves are covered with fine hairs which give the leaf a silvery gray color and may be "sticky" to the touch. Hairy nightshade berries are green with half of the berry covered by a calyx.

Cutleaf nightshade leaves are deeply lobed and may have fine hairs. Berries are green and the calyx is spread on top of the berry.

Eastern black nightshade leaves are not covered with hair, are dark green, and may be reddish purple on the lower surface of seedling leaves. Berries are green to purple in color with the calyx covering only the top of the berry.

Nightshade seed germination will occur in May through September. Hairy nightshade plants emerging in early August can produce viable seed before a killing frost while eastern black nightshade normally requires a longer growing season and seedlings emerging in early August usually don't produce viable seeds. Nightshade seeds can remain viable in the soil for extended periods with seeds buried 8 inches in the soil profile still germinating after

30 years. Hairy nightshade is a prolific seed producer. A single plant can produce over 45,000 seeds while 10 plants per foot of crop row may produce over 100,000 seeds.

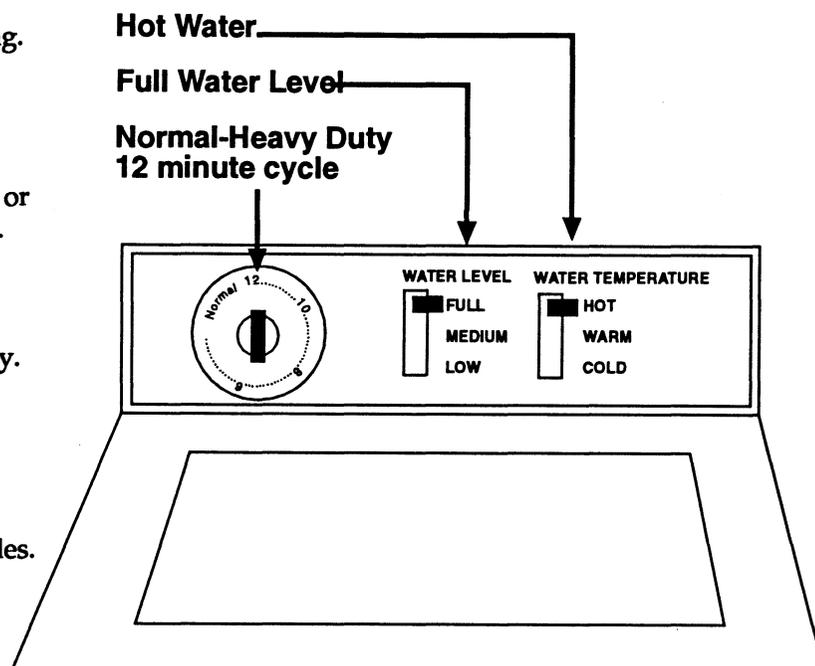
Besides being poisonous, the berries present additional problems with harvest and crop quality. Nightshades are frost tolerant and, therefore, stay green into the harvest season. When nightshades are harvested with dry beans, the green foliage and juice from ruptured berries can foul combine harvesters and make harvesting impossible. The juice also can stain and cause soil particles to cling to the beans. Losses due to nightshade in dry beans can be very serious. The gummy juice of nightshade has been known to "glue" nightshade seed to the bean seed. This condition is sometimes referred to as "piggyback". Planting seed with "piggyback" nightshade is one way nightshade spreads. Berries and stained spots on the crop also can serve as centers for storage mold initiation.

**Robert Wilson**  
Extension Weed Specialist  
Panhandle Research and  
Extension Center, Scottsbluff

## Take special care laundering pesticide clothes

Follow these safety steps when laundering pesticide-contaminated clothing.

- Use soil/water repellent finish for work clothing.
- Read the pesticide label for information.
- Wear rubber gloves when handling clothing.
- Pre-rinse clothing by:
  - 1) presoaking in a suitable container;
  - 2) agitating in an automatic washing machine; or
  - 3) spraying or hosing the garment(s) outdoors.
- Always pretreat.
- Set washing machine for hot water, full water level, normal 12-minute cycle.
- Rewash clothing two or three times, if necessary.
- Use more detergent than recommended on the detergent label.
- Wash a few contaminated garments at a time.
- Wash separately from family laundry.
- Launder clothing daily; don't wear the same clothes several days in a row while applying pesticides.
- Rinse machine thoroughly afterward.
- Line dry garments outside.
- Discard clothing if thoroughly saturated or contaminated with highly toxic pesticides.



Rose Marie Tondl  
Extension Clothing Specialist

## Kansas crop, insect, disease update

Temperatures were well above normal again last week over all of Kansas, with rainfall ranging from 1.04 in the northeast to 0.5. Most of Kansas received less than one-half inch.

Corn planting progressed well, with 30% of the state's corn acreage planted as of April 25. This compares to 10% at this time in 1993 and the average of 25%. Many fields in the southeastern area of the state are being replanted due to heavy rains the previous two weeks.

Statewide, wheat jointing progressed to 75% complete, ahead of 30% last year and 65% for the average for this date. Heading is beginning to occur in a few areas along the southern border. Condition of the wheat crop is rated 61%

good to excellent, 38% fair and 1% poor to very poor.

Oat planting is 99% complete, well ahead of 60% at this time in 1993 and the average of 90%.

### Insects and diseases

Overall, disease and insect infestations remain light. However, moderate infestations of Russian wheat aphids are reported in several counties in the southwestern district and it was suggested that producers in the western fourth of Kansas scout for this pest.

Limited field survey data from the past two weeks indicated that the alfalfa weevil population has been building up unusually slowly in alfalfa. Predominating cool weather seems to have delayed egg laying and hatch.

Wheat Streak Mosaic was the most serious disease of wheat reported during the past two weeks. Some fields in south central and southwest Kansas had incidence of 50% to 90%. Barley Yellow Dwarf and American Wheat Striate mosaic were also observed in a few fields.

Tan Spot was observed in central and western Kansas wheat for the first reports of the season. Select fields had high incidence and the disease appeared to be doing well initially.

Spring black stem of alfalfa was evident in the majority of fields visited. Some defoliation was noted where the disease was severe in south central Kansas.

Kansas Department of Agriculture  
Reports, April 22-25

## Plant, pest diagnostic clinic I.D.'s problems, provides aid

Got a crop pest problem you can't identify? First, explore the resources available at your local Cooperative Extension office. If they can't help, they will direct you to Extension's newly organized Plant and Pest Diagnostic Clinic. Professionals in the Departments of Plant Pathology, Entomology, Horticulture and Agronomy (Weed Science) will provide diagnostic services for an affordable fee.

A fee system was implemented in April to help recover costs associated with diagnosis, handling and postage. For a standard fee of \$5 you get prompt, accurate visual diagnosis of your pest problem, along with helpful information.

## Lawn nuisance invades field crops

Dandelions have long been a pest in many Nebraska lawns and recently have begun to invade many no-till and ridge-till fields across the state. The dandelion is a cool-season perennial that reproduces by the characteristic parachute-like seeds and shoots from root buds.

Treatment in fields to be planted to corn is best achieved with 1 quart of 2,4-D ester plus a 0.5 pint of Banvel when the weeds are in rosette stage. This usually would have occurred in early to mid April. Wait at least 14 days between application and planting.

Fields to be planted to soybeans or sorghum can be treated with 1 quart per acre 2,4-D ester as long as it's at least 30 days before planting.

**John W. McNamara**  
Extension Assistant  
Weed Science

Diagnosis requiring incubation, or virus or nematode assays costs more.

For more information on services, sample preparation and mailing, contact your local Extension office for a brochure. A Specimen Identification Form is also available to complete and include with your sample. For convenience, you may pre-pay for the service and order a number of forms directly from:

Plant & Pest Diagnostic Clinic  
448 Plant Sciences Bldg  
UNL  
Lincoln, NE 68583-0722

**Jim Kalisch**  
Extension Entomology  
Technologist

## Control moss in stock tanks

Algae in stock and nurse tanks can be a nuisance for both animal and spraying uses especially with hard water. Adding copper sulfate to the water will take care of the problem until the tank is refilled with fresh water. The process must then be repeated.

Dissolve 1 ounce of copper sulfate in 1 pt of water in a glass jar. Add 7.5 tablespoons of the prepared solution to each 1,000 gallons of water. An alternative for nurse tanks is to paint the entire tank black. This eliminates the sunlight requirement which prevents algae growth.

**John W. McNamara**  
Extension Assistant  
Weed Science

## Water deficit

*(Continued from page 39)*

these reservoirs have recovered substantially, they haven't recovered to the extent of watersheds in North Dakota and South Dakota.

Snowpack totals from the 1993-94 season have been miserably meager, with runoff into the reservoirs anticipated to be 50-70% of normal. Above normal temperatures during the 1994 growing season will place considerable demand on these reservoirs and water restrictions may need to be considered for next year.

Below normal precipitation over eastern Nebraska has led to average year to date precipitation deficits of 3 inches. There is substantial sub-soil moisture, but the surface layer is rapidly drying out. Precipitation since March 1 has been 60% of normal for southeast Nebraska. If this continues, serious water deficiencies may become prevalent by mid-July.

The lack of precipitation this spring has been accompanied by above normal temperatures, low relative humidities, and high winds. These factors lead to higher crop water demands and have the potential for increasing the severity of a dry period.

Similar dry conditions also are being reported in western Kansas and western Iowa, with dust storms reported in southwest Kansas last week.

The Water Subcommittee recommended that the governor call a full meeting of all CARC subcommittees in mid May. If dry conditions continue, items slated for consideration include steps for crop disaster relief, emergency grazing, and future water restrictions on surface irrigators. The emphasis of the meeting will be to initiate procedures that can address drought conditions.

**Al Dutcher**  
State Climatologist  
Agricultural Meteorology

## Use GDDs to track alfalfa weevil growth

Alfalfa weevils, like other insects, are cold-blooded and dependent on temperature accumulation for development. By accumulating growing degree days (see chart, page 44) from January 1, we can predict what development stage most weevils are in.

For each day, the maximum and minimum temperatures are averaged, then the base temperature (48 degrees Fahrenheit for the alfalfa weevil) is subtracted from the average. As of last week, GDD's (growing degree days) varied from 323 to 517 across Nebraska for base 48.

Weevil egg hatch is expected at 200, feeding at 300, larval feeding peaks at 600, and new adult numbers peak at 1100. Scouting should begin when feeding begins at about 300 accumulated growing degree days.

Steve Danielson  
Extension Entomologist

### Growing degree day accumulations

as of April 24

Accumulated from	Celsius		Fahrenheit		
	Base 0 <sup>1</sup>		Base 40 <sup>2</sup>	Base 48 <sup>3</sup>	
	3/1	4/1	3/1	4/1	1/1
Ainsworth	441	249	531	303	378
Alliance	458	257	564	318	398
Arthur	473	261	578	319	400
Beatrice	516	278	613	332	466
Central City	463	259	556	314	408
Clay Center	476	261	565	314	418
Concord	409	242	473	287	323
Curtis	500	266	617	325	465
Elgin	422	238	483	282	339
Gordon	418	247	504	306	317
Grant	485	258	602	320	433
Holdrege	506	267	614	321	463
Lincoln	528	286	623	343	465
McCook	533	274	664	341	517
Mead	469	256	562	311	420
North Platte	491	259	616	321	459
O'Neill	408	232	486	280	353
Ord	446	248	540	303	404
Red Cloud	529	286	638	346	480
Rising City	458	256	540	306	381
Scottsbluff	482	267	605	335	457
Shelton	486	269	587	329	429
Sidney	464	252	575	312	431
Tarnov	434	241	517	291	363
West Point	446	256	523	304	376

<sup>1</sup>Recent research on winter wheat development uses the 0 (32° F) base.

<sup>2</sup>Base 40 has traditionally been used to track winter wheat development.

<sup>3</sup>Base 48 is used to track alfalfa weevil development.

### Soil temperature\* summary

Seven-day summary ending April 24

	Fahrenheit				
	Ave	Norm	Hi/Day	Lo/Day	Last Reading
Ainsworth	64.5	56.0	71./7	61./2	70.8
Alliance	62.3	54.1	66./7	59./1	65.7
Arthur	61.4	54.3	66./7	59./1	65.5
Beatrice	59.1	59.5	62./2	56./5	60.9
Central City	56.2	59.1	61./7	54./4	61.1
Clay Center	56.4	58.8	60./7	53./5	60.3
Concord	54.5	57.3	61./7	51./3	60.8
Curtis	59.4	57.4	65./7	56./5	64.5
Elgin	55.8	56.8	62./7	52./4	62.3
Gordon	59.4	53.1	63./7	57./2	63.0
Grant	62.2	57.4	67./7	59./5	66.9
Holdrege	61.9	58.5	66./7	59./5	65.6
Lincoln	62.1	59.4	67./7	58./4	66.7
McCook	60.4	59.2	66./7	57./5	65.9
Mead	55.0	58.8	62./7	51./4	62.2
North Platte	61.7	56.6	68./7	57./5	67.7
O'Neill	55.7	56.3	62./7	53./3	61.7
Ord	61.7	57.3	68./7	59./5	68.5
Red Cloud	68.6	59.6	72./7	65./5	71.9
Rising City	63.0	58.4	69./7	58./4	69.4
Scottsbluff	61.9	55.1	66./7	58./1	65.9
Shelton	56.6	58.6	61./7	55./1	60.7
Sidney	60.2	53.9	64./7	57./1	64.1
Tarnov	56.5	57.2	63./7	53./4	62.5
West Point	53.5	57.6	59./7	51./4	59.3

\*At 4 inches