CropWatch No. 95-8, May 5, 1995

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

Follow this and additional works at: http://digitalcommons.unl.edu/cropwatch

Part of the Agriculture Commons

http://digitalcommons.unl.edu/cropwatch/85

This Article is brought to you for free and open access by the Extension at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Crop Watch by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
Rains test patience

April's record-breaking showers won't be giving way to sunshine this week, if the 6-10 day forecast holds true. UNL agronomists, however, are encouraging Nebraska farmers to tap their reserve of patience and wait before deciding whether to change production strategies significantly.

Farmers shouldn't be too eager to get out in the field early because of the potential for soil compaction problems. A one-day delay in planting may cost less in the long run than getting out too early and compacting the soil, which may decrease yields for several years and require expensive deep tillage to only partially correct the problem.

(Continued on page 50)

Starter fertilizer may improve late planting odds

Using starter fertilizers may be especially beneficial this spring when planting or emergence is delayed by rain and cool temperatures and a quick start is helpful.

Starter fertilizers — placing small quantities of nutrients in a concentrated zone near the seed at planting — can be very beneficial. (Broadcast application of N-P-K fertilizer before planting, although called "starter" by some producers, is not considered a starter.)

One benefit of starter fertilizer often is an increase in early growth and crop uniformity. More rapid early growth can allow earlier cultivation and hilling, allowing earlier irrigation for furrow-irrigated crops. However, early season growth response does not necessarily result in increased grain yield. University of Nebraska research has found that corn yield increases attributed to starter fertilizer occur mainly on sandy soils or soils low in phosphorus, although an early season growth response is common on most soils. On sandy soils with medium or high phosphorus levels, yield is often increased by using starter fertilizers containing nitrogen and sulfur.

Another benefit of starter fertilizer use is the potential to effectively deliver small rates of nutrients, such as zinc, when soil concentrations of these nutrients are deficient. Where soil tests call for low rates of banded fertilizers, such as 20 lb/acre of phosphate, or 2 lb/acre zinc, starter placement is the most effective means of application.

The amount of starter fertilizer which can be safely used depends

(Continued on page 51)

Alfalfa weevil causing early economic damage

Buffalo and Phelps counties last week reported economic damage from alfalfa weevils. Larvae were quite small (probably first and second instars), but present in high enough numbers to justify treatment in the relatively short alfalfa. Gage County also reported light damage and low weevil numbers.

Wet, warm conditions will promote the increase of a fungus disease that eventually will eliminate the weevils from some fields. Therefore, early treatments are not always wise and may be unnecessary if weevil numbers have not reached threshold levels.

Steve Danielson
Extension Entomologist
Rains
(Continued from page 49)

Tracks in the soil created by tillage or planting operations, the seed opener or packer wheels can all contribute to compaction affecting plant development.

To determine if the soil is right for planting, pick up a fistful of soil that is 3-6 inches below the soil surface, work it in your hand to form a ball, then drop it on a hard surface. If the soil ball does not break or crack, it is definitely too wet to plant.

Compaction can cause irregular and delayed seedling emergence, spotty plant stands, darkened seedling color, and poor seedling vigor.

For those producers, mostly in south central Nebraska, who did get their corn planted and are now worrying about potential damage from the cool, wet conditions, agronomists note that the early-planted corn appears to be holding its own. Modern genetics, breeding and seed treatments have improved seedling survival under such conditions.

Roger Elmore, Extension Crops Specialist, South Central District
Alice Jones, Extension Specialist
Soil Erosion Control/Conservation
Todd Peterson, Extension Cropping Specialist, Northeast and Southeast Districts

Be alert to spring black stem on first cutting of alfalfa

The persistent cool wet weather creates ideal conditions for spring black disease on first cutting alfalfa. This month small black spots may develop on leaves, petioles and stems of new shoots. The leaf lesions are irregular, and enlarge and merge until much of the leaflet is covered. Infected leaves yellow and drop from the plant. Up to two-thirds of the leaves may be lost before harvest when spring black stem is severe. Lesions on stems and petioles turn black. As stem lesions enlarge and merge, most of the stem becomes black. If the stem is girdled by the advancing lesions, it will die.

Early cutting is the recommended control if spring black stem is prevalent on the lower portion of the plants. In May scout fields weekly to determine the extent of disease development. Decide whether to cut early based on the results of scouting fields and weather forecasts. Don't delay the decision to cut early, otherwise most of the leaves may have been lost by harvest.

John E. Watkins
Extension Plant Pathologist
Significant catches of black cutworm moths continued last week in eastern Nebraska in Richardson, Johnson, Gage, Nuckolls, Burt, and Knox counties.

Growers are encouraged to scout their emerging row crops for damaged plants and the cutworms that caused the damage. Damage will primarily be evidenced by cut or wilting plants with feeding damage at or just below the soil line. If damage is found, take stand and damaged plant counts in at least four locations across the field. Cutworms tend to hide under debris or clods during the day, so some careful investigating may be necessary to be sure that the damage is caused by cutworms.

Preemergence or planting-time insecticide treatments are not suggested for cutworms since these applications would be a waste in most fields. (Most fields do not have economic infestations of cutworms in any one season.) We suggest scouting the fields and making treatments postemergence only when justified by the presence of damage and cutworms. Treatment is suggested when 5% of corn plants or 20% of soybean or sorghum plants are cut by cutworms before the cutworms are one inch in length. For listings of registered insecticides to control cutworms in these crops, refer to Insect Management Guide for Nebraska Corn and Sorghum (EC94-1509) and Insect Management Guide for Nebraska Alfalfa, Soybeans, Wheat, Range, and Pasture (EC95-1511).

Black cutworm moth captures April 23-30. Black indicates counties with significant captures (eight or more moths captured over a two-night period).

Table 1. The amount of N, K, and S which can be safely applied per acre for corn and grain sorghum in 30-inch rows.

<table>
<thead>
<tr>
<th>Placement</th>
<th>Sandy Soils</th>
<th>Non-Sandy Soils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt index (lb/acre)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With the seed**</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>1/4 to 1/2 in. from seed</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>1 in. from the seed</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>2 in. from the seed</td>
<td>20+</td>
<td>40+</td>
</tr>
</tbody>
</table>

* A relative estimate of salt index extrapolated to lbs/acre of fertilizer nutrients. The amount for soybeans is 1/2 of these values.

** Starter containing ammonium thiosulfate should not be applied with the seed.
Consider soil water when selecting alternative dryland crops

Dryland farmers in the semi-arid central Great Plains are looking for alternative crops to complement their traditional winter wheat-fallow rotations without significantly increasing production risk. A study at the High Plains Agricultural Laboratory near Sidney evaluated which alternative spring-planted dryland crops had desirable soil water-yield relationships. Crops exhibiting a strong correlation between grain yield and soil water at planting could be used in a flexible cropping system to intensify cropping frequency while minimizing drought risk.

In the 1992-93 study, a lateral-move irrigation system was used to establish low, medium, and high soil water levels at planting. The soil was a Keith silt loam with pH of 7.3 to 7.7 and organic matter of 1.7 to 1.2% respectively. Five spring-planted crops (corn, Pioneer '3790'; pinto bean, 'Othello'; proso millet, 'Sunup'; grain sorghum, DeKalb 'X-218'; and sunflower, Dahlgren '707') were no-till seeded in winter wheat stubble. Weeds were controlled by hand hoeing. Growing season temperatures and precipitation are presented in Figure 1.

Grain yields of the short-duration crops such as pinto bean and proso millet appeared to consistently respond well to increasing soil water at planting. The long-duration crops such as com, grain sorghum, and sunflower did not appear to consistently respond to increasing soil water at planting with increased grain yields. The correlation of grain yield to soil water at planting appeared to decrease as the days from planting to harvest increased (Fig. 2). Perhaps for short-duration crops, there might still be a substantial amount of initial soil water available to the crop at flowering — typically the critical period of water requirement. For long-duration crops, however, much of the initial soil water may be used in stover production and not available for grain development. The long-duration crops also are more likely to suffer from adverse weather such as hail and early freeze.

Farmers in the semi-arid central Great Plains often say that if they have moist soil 3 feet deep, they feel confident in planting dryland corn. Many farmers also believe proso millet requires just one good rain after planting to yield well. This study suggests that for long-duration crops like corn, grain sorghum, and sunflower other factors like growing season precipitation, especially near flowering, might be more important in determining success than soil water at planting.

(Continued on page 53)
Water quality affects herbicide success

The quality of spray water can influence herbicide performance. Minerals, clay, and organic matter in water used as a carrier can reduce the effectiveness of herbicides. Clay and organic matter contained in pond water, but rarely found in well water, can reduce the performance of many postemergence herbicides. The mineral content and pH of water can influence herbicide performance, particularly Roundup.

Well water in Nebraska is often high in calcium and magnesium with a pH well above 7.0. These conditions are especially detrimental to Roundup performance, however most other postemergence herbicides would not be seriously affected. Measures used to counter the negative effect of hard water on Roundup performance include reducing the carrier volume to 10 gallons per acre or less and adding ammonium sulfate to the spray mixture. Reducing the carrier volume simply reduces the amount of mineral available to react with the Roundup. Ammonium sulfate prevents minerals in the water from reacting with Roundup and forming less active salts of Roundup. Adding ammonium sulfate can improve Roundup activity even with water free of minerals. This latter effect of the ammonium ion is independent of water quality and occurs with a number of other postemergence herbicides including Basagran, Blazer, Classic, Cobra, Pinnacle, and Pursuit.

Herbicide mixture compatibility and ease of mixing are influenced by water quality and temperature. Herbicide formulations contain ingredients to counter the adverse effect of hard water on herbicide mixing and compatibility. Mixing and compatibility problems are greater in cold water than warm water. Allowing well water to warm in a holding tank before mixing with herbicides will reduce compatibility problems. Always follow the label directions for mixing herbicides to minimize compatibility problems.

John McNamara, Extension Asst., Weed Science
Alex Martin, Extension Weeds Specialist

Dryland (Continued from page 52)

Is. In other words, farmers who decide to plant corn, grain sorghum, or sunflower after winter wheat must hope the growing season is kind to them because grain yield potential can not be reliably estimated at planting. Conversely, grain yield potential for short-duration crops can be roughly estimated based on soil water at planting. Management decisions such as crop to be planted and production inputs may be made with at least some reasonable expectation of outcome.

Producers should remember that these conclusions are based on a limited data set during which no severe drought conditions occurred. Therefore, the above discussion is probably best limited to situations of moderate to ample soil water conditions at planting.

Drew Lyon, Ext. Dryland Cropping Systems Specialist
Francis Boa, Field Officer, Ghena Grains Development Project
Timothy Arkebauer, Assistant Professor, Agronomy

Are non-traditional fertilizers worth it?

Fertilizer prices are higher this year and this usually contributes to non-conventional and non-traditional fertilizer products looking particularly inviting. The sales pitch for some of these products and programs can sound good, almost too good, as in these examples:

- This product prevents the loss of N from nitrogen solutions.
- This product will release all of the nutrients that are tied up in the soil.
- This phosphorus product is 100 percent available and stays available to the plant longer than conventional phosphorus sources.
- This product is so new that the University doesn't know about it or understand it, or, The University will not test it.
- This product is all natural and therefore will not harm the environment but will stimulate the soil microorganisms.
- This product acts as a nitrification inhibitor for ammonia and/or nitrogen solutions.
- These nutrients in this N-P-K fertilizer solution are more available than nutrients from conventional fertilizer sources.

Many non-conventional or non-traditional products and programs will not be backed up by field data or the data may be from another state and probably not from a land grant university. Testimonials are in abundance but there is little factual data.

Before trying one of these "Good Buy's", study the relative costs. For example, some of the

(Continued on page 53)
Bean rust threatens 1995 crop

All major pinto and great northern varieties available for commercial planting in Nebraska and Colorado are susceptible to rust strains collected from the region during recent years. Exceptions include the new Nebraska release pinto Chase and light red kidney varieties. Rust reactions of other market classes such as navy, small white and black should be closely monitored during 1995 and may require fungicide protection. In addition, since there are numerous rust strains and each bean variety has a different level of susceptibility, planting two or three proven varieties of a market class could reduce uniform susceptibility throughout your fields.

Control options

The initial appearance of rust on the High Plains occurs on volunteer beans in late May to early June, and on new crop beans in mid to late July. Wind currents spread rust spores from these initial infection points to other plants and fields. The rate and extent of secondary spread are dependent on the volume of spores, varietal susceptibility, and area weather conditions. A five-stage disease risk model, developed by researchers at Colorado State University, incorporates information on the previous season’s rust pressure and evidence of rust overwintering (volunteer bean infection), varietal susceptibility, rainfall and temperature conditions during volunteer bean plant emergence, rainfall and temperature conditions during new crop bean growth, and stage of plant development when initial infection occurs.

Sanitation and destruction of volunteer bean seed and plants in the fall after harvest and in early spring before crop emergence is vital, and effectively reduces risk of early-season disease. In Colorado, researchers observed the highest incidence of rust and bacterial diseases on volunteer bean plants growing within winter wheat fields that were minimum-till planted onto old bean ground. Disease control should start with incorporation of bean debris into the soil in early spring and practicing early season weed control in rotation crops such as winter wheat, corn and sugar beets to kill volunteer beans and prevent rust and bacterial diseases such as bacterial brown spot from spreading into the new bean crop. This practice will break the cycle of infection from last fall’s contaminated debris to this spring’s volunteers, and then to new crop bean plants.

One to three timely sprays of a protectant fungicide such as chlorothalonil (e.g. Bravo 720, 14-day preharvest interval) or maneb (e.g. Maneb 75DF, 30-day preharvest interval) have provided effective and economical returns to growers when moderate to severe rust pressure threatens susceptible varieties up until 21 days before cropping. Rust protection and crop response were improved when multiple sprays of Bravo were applied on a 7-10 day schedule during the critical plant development stages of flowering and pod set/fill. Infection was reduced by 38-78%, yield was increased by 65-187%, seed size was increased by 6-12%, and net returns of $37-65/acre were recorded for $15/cwt beans during 1991 to 1994 in research plots and commercial pinto bean fields in Colorado. A systemic fungicide, propiconazole (e.g. Tilt, 28-day preharvest interval), may be labeled for use in this region during 1995; check with local chemical suppliers on registration status and availability.

Plan IPM strategies

Be proactive and prepared to implement a rust control program if needed. Work with your consultant, bean elevator personnel, chemical supplier and university faculty to design an integrated pest management program to reduce disease pressure (by crop rotation, sanitation, varietal choice) and apply appropriate fungicides at labeled rates and schedules if rust becomes a threat. University personnel will distribute additional information on bean rust in an updated extension publication.

A proactive and aggressive integrated pest management strategy can help you produce an economical and high quality crop of beans, even if the variety is susceptible to rust.

H.F. Schwartz, Extension Plant Pathologist, Colorado State University
Jim Steadman, Professor, Plant Pathology
E.D. Kerr, Extension Plant Pathologist, West Central District
D.T. Lindgren, Extension Horticulturist, West Central District

Non-traditional
(Continued from page 53)

high quality liquid solutions are actually quality products, but their cost may be two or three times that of conventional fertilizer when both products will produce the same yield.

When in doubt, ask. Land grant universities have researched many non-conventional and non-traditional products. Results are available from Extension educators and Extension agronomists.

Ken Frank
Extension Agronomist
Pest management training offered

Field crop scout training sessions have been scheduled for May 16 in Kearney, May 17 in North Platte, and May 22 in Columbus.

These day-long sessions are designed for beginning field crop scouts or other interested people, and provide basic information on identifying pests (insects, weeds, and plant diseases), crop development and disorders, and irrigation scheduling. Training includes lectures and laboratory sessions. We will apply for Certified Crop Advisor (CCA) credits for the training.

**May 16, Kearney,** Buffalo County Extension office; program starts at 8:30 a.m., $10 registration fee, includes lunch. Preregistration requested. Contact Ron Seymour, 308/532-3611, for more information about the Kearney and North Platte meetings.

**May 17, North Platte,** West Central Research and Extension Center; program starts at 8:30 a.m., $10 registration fee, includes lunch. Preregistration requested.

**May 22, Columbus,** Wunderlich's Restaurant, 304 23rd St. and East Hwy 30, program starts at 8:30 a.m., $10 registration fee includes lunch. For more information contact Keith Jarvi, 402/584-2853.

Additional training materials are available for individual study by people wanting information related to crop pest identification and scouting procedures. These include two videotapes and a reference manual. The videotapes cover pest and beneficial insect identification and scouting procedures — one in corn (26 minutes) and the other in soybeans and alfalfa (21 minutes). Each videotape (1/2 inch, VHS format) costs $29.95 plus sales tax; both videos may be ordered on one reel for $50, plus sales tax.

The Field Scout Manual covers all types of pests — insects and mites, weeds, and diseases — commonly found in major Nebraska field crops. Text and color photos provide information on identification, biology and scouting techniques. The cost is $28 plus sales tax.

To order these materials, send checks made payable to University of Nebraska to Communications and Information Technology, P.O. Box 830918, University of Nebraska-Lincoln, Lincoln, NE 68583-0918.

Bob Wright, Extension Entomologist, South Central District, Clay Center

Field re-entry periods lengthened

Many restricted entry intervals for pesticides have been modified recently due to the EPA's Worker Protection regulations. Gary Hein, Extension Entomologist at the Panhandle Research and Extension Center, compiled the following list of restricted entry intervals for commonly used insecticides in Nebraska crops. This information should be substituted for the lists in EC94-1509, Insect Management Guide for Nebraska Corn and Sorghum and EC95-1511, Insect Management Guide for Nebraska Alfalfa, Soybeans, Wheat, Range and Pasture. This information is subject to change; always refer to the label for the final word on pesticide use.

- **Ambush 2E**, 25W — 24 hours
- **Asana XL** — 12 hours
- **Comite 6.5EC** — 7 days
- **Counter 15G, 20CR** — 48 hours (72 hours*)
- **Cythion** — 12 hours
- **Dimethoate 400** — 48 hours
- **Dipel, all formulations** — 12 hours
- **Di-Syston 8EC, 15G** — 48 hours (72 hours*)
- **Diathonate II 20G, 15G, 4EC** — 48 hours (72 hours*)
- **Force 1.5G, 3G** — 48 hours
- **Fumadon 4F** — 48 hours — 14 days (corn, sunflowers, sorghum)
- **Guthion 3F, 50WP, 25** — 48 hours (72 hours*)
- **Imidan 70WP** — 24 hours
- **Karate** — 24 hours
- **Lannate LV, 90 SP** — 48-72 hours (depending on crop)
- **Larvin 3.2F** — 12 hours
- **Lorsban 4E** — 24 hours
- **15G** — 12 hours
- **Malathion ULV, 57EC** — 12 hours
- **Metasystox-R 2E** — 48 hours (72 hours*)
- **Parathion (ethyl and methyl)** — 72 hours (6 days for corn)
- **Penncap-M** — 48 hours
- **Pounce 3.2EC** — 24 hours
- **Sevin, all formulations** — 12 hours
- **Thimet 20G, 15G** — 48 hours (72 hours*)

*REI for areas with less than 25 inches of rainfall

Bob Wright
Extension Entomologist
South Central District