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Lisa Brown Jasa

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

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Assessing ‘98, planning for ‘99

About 90% of the state’s corn harvest is complete, with pockets in western Nebraska where more than half of the acres haven’t been harvested yet due to the late freeze and wet conditions. Soybean and sorghum harvest are reported to be more than 95% complete statewide. Dryland yields were good to excellent in many areas with irrigated yields being more variable, but still good. In usually dry areas of western Nebraska, corn yields of 250 bushels per acre were reported.

This year’s weather patterns were quite favorable for row crops as well as for a variety of pathogens. In many areas yield potential was high but actual yield was limited by several factors, including disease.

“In a normal year with a more typical weather pattern, the weather may favor one group of pathogens over another,” said Jim Stack, Extension Pathologist at the South Central Research and Extension Center. “Unfortunately, this year there was some discreet time favorable to each pathogen group.”

Counties that rarely see gray leaf spot had it in abundance this year. In other counties, incidence was greatly increased.

“This was an unusual year for these diseases,” Stack said. “I wouldn’t make big management decisions about gray leaf spot based on what happened this year. In nine out of ten years you wouldn’t have it like this.”

Anthracnose and gray leaf spot posed some of the largest problems in corn with foliar diseases exceeding the damage thresholds for both sorghum and corn. In soybeans, sclerotinia and other diseases also were a problem.

Disease problems may continue through the winter as plant pathologists are already identifying pathogens such as blue eye mold in recently stored grain. What looked like good grain going into storage may have already been colonized by pathogens. It will be especially important this year to monitor grain storage moisture and temperature to avoid losses.

There were pockets of significant insect damage this year but

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Can’t wait to hear

Please complete and return the survey in the Oct. 16 Crop Watch. Your response can really help us determine what kind of information you want.

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Getting the latest yield data

Getting ready to buy your seed for 1999, but wondering how some specific hybrids or varieties fared under this year’s conditions? Are Bt corn and Roundup Ready soybeans performing as well as other hybrids?

Check out unbiased University of Nebraska field trial results on the Web or in publications available from your local Cooperative Extension Office. With the Web version, you can click on the crop and county for which you want results. See http://ianrwww.unl.edu/ianr/agronomy/varitest2.htm
Agronomy Highlights

“New Ways of Doing Business” will be the theme of this year’s Agronomy Highlights. The conference, which is free, will be held at the Cornhusker Hotel, 333 S. 13th St., Lincoln, Nebr. on Dec. 15.

The day begins with refreshments at 8:15 a.m. and continues with presentations from 8:40 to 2:40, followed by an open question and answer time. Presentations involving research, teaching and extension activities in agronomy will be highlighted, as well as poster presentations and demonstrations.

Topics will include: agroecological zones of Nebraska; health of Nebraska soils; Grazing Livestock Systems — a new intercisciplinary undergraduate major; reducing crop production costs; what an agronomist needs to know about using livestock manure; developing new soybean varieties and marketing them; feasibility of 300 bushel corn; and grazing maize.

Preregistrations with names of those who will be attending are required by Dec. 8 for the meeting and a complimentary noon meal. To preregister call JoAnn Collins at (402) 472-2811 or write: Agronomy Department, Box 830915, University of Nebraska, Lincoln, Nebr., 68583-0915.

In previous years CCA Continuing Education Units were issued for Agronomy Highlights and an application for credit this year has been submitted.

Top rural communities

The Nebraska Rural Development Commission is seeking nominations for the 1998 Nebraska Outstanding 100 and Top 10 Rural Development Initiatives and programs.

For a nomination form, contact Doug Gibbs, (877) 814-4707, or Marilyn Schlake, (800) 328-2851, or visit the Web at www.ianr.unl.edu/rural/bits.htm for a copy of the nomination form. The deadline for submission is Dec. 15.

Focus on wheat scab

A $3.5 million national research initiative to solve fusarium head blight in wheat and barley will soon be underway, involving dozens of crop scientists in 20 states.

Fusarium head blight, commonly called scab, is a fungal disease that attacks wheat and barley. No wheat and barley varieties are immune to the fungus, which is responsible for almost 470 million bushels of wheat lost in the United States in 1998.

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overall insect damage was lower than usual, especially pressure from European corn borers. Bean leaf beetles were more numerous than usual this year and their range continues to expand as areas of soybean production expand.

Looking forward

When Extension specialists were asked what they might recommend for next year based on this year, diversification of seed selection and use of resistant hybrids and varieties were top on the list. Yield data from UNL field trials are available in publications from your local Extension Office or on the web at http://ianrwww.unl.edu/ianr/agronomy/varietest2.htm

“It’s always important to plant a lot of different varieties or hybrids because we never know what Mother Nature is going to throw at us,” said Bob Klein, Extension Cropping Systems Specialist. “When selecting, use different genotypes and avoid planting hybrids that are too closely related.”

Lenis Nelson, UNL Extension agronomist, agreed, adding “Producers should select seed carefully, but nothing is a magic bullet for all situations.” Diversification helps spread the risk from specific disease or insect outbreaks.

In several areas, genetically engineered crops were the top producers, providing both yield and crop protection and lessening fears that yield drag was inherent with the new resistant hybrids.

It’s important not to rely on these crops too much, Klein added, and to continue using rotation and other cultural practices to limit pests and the potential for developing pest resistance.

Noting the unusual circumstances this year, Stack said, “I would not encourage tillage to control gray leaf spot based on this year, but I would encourage the use of tolerant hybrids.”

Wheat scab

(Continued from page 222)

States from 1991 through 1997, valued between $1.3 billion to $2.6 billion, according to a North Dakota State University study.

The Initiative’s work will be funded by the U.S. Agriculture Department’s Agricultural Research Service (ARS), although much of the work will be done at land-grant universities in scab-threatened areas.

“... this represents an unprecedented partnership between ARS, the land-grant universities, and the private sector,” says Stephen Baenziger, UNL professor and wheat breeder, who is involved with the initiative.

Following are the U.S. Wheat and Barley Scab Initiative’s research program areas:

1. Variety development and coordinated screening nurseries
2. Epidemiology (how scab develops, spreads) and disease management
3. Food safety, toxicology, and utilization
4. Biotechnology
5. Germplasm introduction and evaluation
6. Chemical and biological control

Corn harvest sets a record; all major crop numbers up

Nebraska’s corn production, as of November 1, is forecast at 1.24 billion bushels. Production, if realized, would be a record high and 8% more than last year and 4% above the previous record set in 1996. Acreage for harvest as grain, at 8.55 million acres, is unchanged from last month and 2% below last year. Yield, at a record high 145 bushels per acre, is 13 bushels above last year and nearly 19 bushels above the 10-year average. With harvest 83% complete by November 1, both dryland and irrigated yields were averaging above previously forecast levels.

Irrigated corn production is forecast at 874 million bushels, just below the record set in 1996. Irrigated corn acres for grain, at 5.5 million acres, is 1% below 1997. Yield, at 158.9 bushels per acre, is over 2 bushels above the previous high set in 1996 (156.5 bu/ ac).

Dryland corn production, forecast at 366 million bushels, is up 14% above the previous record set in 1994. Dryland acreage for grain, at 3.05 million, is 3% below a year ago. Yield, at 120 bushels per acre is a new record high, breaking the 117.2 bushel yield set in 1994. Dryland yield is up 2 bushels from last month and 22 bushels above 1997.

Sorghum grain production is forecast at 68.6 million bushels, 12% above the 1997 crop. Acreage for grain harvest remained unchanged at 700,000 acres, 13% below last year. Yield, at 98 bushels per acre, is 16 bushels above last year.

Soybean production is forecast at a record high 165 million bushels. Acreage for harvest at 3.75 million acres is also a record. A record high pod count offset an abnormally low pod weight to produce the yield forecast of 44 bushels per acre, 3.5 bushels above last year.

Sugar beet production of 913,000 tons is down 10% from 1997.

Nebraska Agricultural Statistics Service
Weed control in '98 and next year

Post harvest provides an excellent opportunity for assessing this year’s weed control efforts as well as previewing new directions in herbicide technology which may be incorporated next season. While this year was not without its challenges, a review of our observations may help us avoid similar problems in the future.

With respect to herbicide efficacy and weed control, 1998 was a good year. Many new products were available and generally worked well. Roundup Ready soybeans were planted on a record number of acres and results were generally good across central and eastern Nebraska. There were some cases of velvetleaf and waterhemp surviving Roundup applications, yet Roundup performed very well in the midst of extremely high expectations. Weed competition in some areas was very tough, and most herbicides looked very good. For the most part, many growers have probably already decided what worked well for them and what did not.

In some fields, soybean leaf curling and crinkling was noticed. Herbicides could not be pinpointed as the culprit and it was later discovered in the Plant and Pest Diagnostic Clinic that these symptoms were from thrips, which serve as a vector for a virus that resulted in random acres of distorted soybean leaves. No ill effect on yield has been reported from these occurrences.

Early precipitation preventing growers from making postemergence herbicide applications in a timely manner was a major problem this year. This resulted in applications made to larger weeds, reducing herbicide efficacy in some cases. Those growers having effective preemergence treatments were not as affected.

Herbicide injury was very infrequent with the only consistency stemming from applications made during the bout of cold temperatures in June. These cool temperatures reduced the ability of the crop to metabolize the herbicide, resulting in some injury. Many growers found themselves pushing the limits of crop growth stage to make postemergence applications during this period, result in some corn injury. During this period growers also noticed gray blotches on corn leaves resulting from cold temperature injury. These leaf symptoms were temporary and caused no real plant injury. Also worthy of noting was injury due to drift. Most notably was drift of growth regulators such as Banvel or 2,4-D on soybeans, resulting in curled and crinkled leaves.

As for the future, it may seem difficult to speculate what the herbicide industry is going to do. Rest assured, at least for the next few years, technology will continue to explore the herbicide resistant crop (HRC) market. There are many reasons for this focus of technology. Quite simply, HRC’s work very well. They allow producers to use an increased herbicide rate resulting in better weed control and no crop injury. HRC’s also provide more flexibility in weed management. And finally, the industry is driven in this direction because it is much less expensive to develop HRC’s for a given herbicide than to develop and market a new chemical. Bottom line, expect to see many more advances in transgenic crops in the upcoming years.

Bruce Anderson
Extension Forage Specialist

Jeff Rawlinson
Extension Assistant
Weed Science

Alex Martin
Extension Weed Scientist

Use soil tests to improve alfalfa production in '99

Alfalfa production and profits can increase if you soil test and maybe even fertilize yet this fall.

Alfalfa needs more nutrients than most other crops we grow. For example, an average ton of alfalfa hay will contain about 50 pounds of nitrogen, 12 pounds of phosphate, 50 pounds of potash, and 4 pounds of sulfur.

Well-nodulated alfalfa plants get most of their nitrogen from the air. That means we should not need to fertilize with nitrogen. All other nutrients must come from the soil or from fertilizer.

Fortunately, many Nebraska soils can provide large quantities of nutrients needed for alfalfa. Most soils, however, cannot provide all the nutrients needed for top yields. so fertilizer is needed.

Soil tests can assess how much nutrition your soil can provide and how much fertilizer is needed.

Before soils freeze, collect samples from existing alfalfa fields and from fields you expect to plant to alfalfa next year. A lab should analyze the samples at a minimum for soil pH and phosphorus. If your soil is light textured or eroded or highly weathered, also test for potassium and sulfur. Then use the results of these soil tests, with your extension educator and fertilizer dealer, to develop a profitable fertility program for next year. Better alfalfa profits will be the result.
Insect courses offer practical, in-depth content

Three UNL entomology courses are being offered by distance during the spring 1999 semester. They are: The Good, the Bad and the Bugly, Pest Wars: Biological Control of Insect Pests, and Host Plant Resistance.

Farmers, pesticide applicators, crop consultants, co-ops, county extension educators, vocational agricultural instructors, science teachers and college students will all find these courses helpful.

These courses focus on practical information for people who want to learn at home. Students can take the course noncredit (CCA CEU's pending) or for college credit.

All three courses will be available over the internet and video-tapes of the lectures will be sent weekly. To register, call 1-800-755-7765. Additional information is available at http://www.ianr.unl.edu/ianr/entomol/courses/courses.htm

The Good, the Bad and the Bugly

The Good, the Bad and the Bugly is an eight-week course that presents the basics of entomology and pest management. It covers insect biology and identification, particularly as these specifics pertain to practical questions. The pest management portion addresses the theory and practice of pest management, including management tactics, sampling, thresholds, pesticide properties, biological control, and environmental risk.

Following the course, participants will be able to:

1) recognize major insect groups and understand the basics of insect biology;
2) understand the principles of insect pest management;
3) recognize the tactics involved in modern insect management, including advantages and limitations to specific methods; and
4) recognize and use modern management programs, including sampling, thresholds, and multiple tactics.

Cost is $300 for a noncredit registration plus $25 for materials. Individuals who can download handouts from the Internet do not need to pay a materials fee.

Cost is $353.25 for three UNL undergraduate credits, and a $25 materials fee (total $378.25);

Cost is $467.75 for three graduate UNL credits and a $25 materials fee (total $492.75), plus a $25 UNL Graduate College admission fee.

Biological Control of Pests

Students enrolled in Biological Control of Pests, Entomology 496B/896B, will learn ways to use biological controls to manage insect, weed, and plant disease pests. This accelerated eight-week course blends theory and application in a thorough survey of biological control practices.

Content will cover:

1) concept of biological control and the history of its use;
2) organisms used in biological control, such as parasitic wasps, predatory beetles, bacterial pathogens, and herbivorous fish;
3) how to introduce, augment, and conserve natural enemies of the pest you’re trying to control;
4) latest methods for monitoring and evaluating biological programs;
5) the role of government in biological control; and
6) how biological control fits into Integrated Pest Management.

Specifics about course content are available on the web site.

To enroll for credit you’ll need 12 hours of biological science courses at the college level, or the instructor’s permission. Contact Steve Danielson, course instructor, at (402)472-8693 for permission.

The noncredit registration fee is $295. The noncredit registration fee for those taking the course for CCA CEUs, which are pending, is $350.

For those taking the course for three hours of undergraduate college credit, cost is $353.25. Tuition for three hours of graduate credit is $467.25, plus a $25 UNL Graduate College admission fee if needed. If you enroll for college credit you also can receive CCA CEUs.

Students are required to buy the textbook, Biological Control, by Roy G. Van Driesche and Thomas S. Bellows Jr. It is available through the University Bookstore for $74.95 plus tax and shipping. You can order the textbook via Visa, MasterCard, or check by calling the bookstore at (402) 472-7300.

Host Plant Resistance

This eight-week course, Entomology 496D/896D, will cover:

1) how plants can defend themselves naturally;
2) how insects have adapted to overcome these mechanisms through coevolution;
3) how to screen and breed for insect resistance;
4) the relationship of plant resistance to insects in an integrated pest management (IPM) system;
5) the major sources of genes for resistance: native genes and transgenes; and
6) how to compare the development of insect resistance with plant pathogen resistance and herbicide tolerance.

The course textbook is Host Plant Resistance to Insects by N. Panda and G.S. Khush. It can be ordered from University Bookstore using Visa, Mastercard, or check by calling the bookstore at (402) 472-7300.

Bob Wright, Extension Entomologist SCREC, Clay Center
Soils and irrigation — study at home this winter to increase your bottom line

If you want to learn more about how soils influence crop production or how to better manage your irrigation system, two University of Nebraska Cooperative Extension home study courses are available this spring.

The Soils and Irrigation Management home study courses each offer a textbook and quizzes that can be taken at home and submitted to participating Extension educators for grading. Cost for each is $60. Certified Crop Consultant credits are available for each: 10 for the soils course and 13 for the irrigation course.

Written by UNL Extension specialists and educators, these courses provide in-depth information on each of the subjects in a practical setting. To register for either course, contact your nearest Cooperative Extension Office.

Soils Home Study Course

This is an introductory course designed to meet the needs of agricultural producers, crop consultants, fertilizer dealers, and other agribusiness people in making management decisions regarding soils and fertilizer. Lessons cover physical properties and development of soils, nitrogen management, soil pH, organic matter, phosphorus and potassium, micro nutrients, soil testing, and the scientific basis for making fertilizer recommendations.

Following the Soils Home Study Course, participants will:
1) better understand how soil fertility affects crop production;
2) take more accurate soil samples;
3) save money by applying nutrients when it’s most cost effective and they are least apt to be lost;
4) understand why recommendations from different labs vary and how to select the best recommendation for individual management plans; and
5) select the best fertilizer for individual needs.

Irrigation Management Home Study Course

This is a comprehensive course covering irrigation management, crop water use, flow measurement, basic water calculations, irrigation efficiencies, sprinkler irrigation basics and energy costs for irrigation pumping.

This is the second level of the Cooperative Extension distance irrigation curriculum. The first level is in a publication, Managing Irrigation and Nitrogen to Protect Water Quality (EC98-786), which is available at Cooperative Extension offices. This course builds on that publication, providing more depth on irrigation management. A third curriculum level is being developed.

Following this course, participants will be able to: reduce irrigation application amounts and increase uniformity of application, thereby reducing deep percolation and runoff. The end result can be reduced irrigation costs, increased efficiency, increased yields and reduced surface and groundwater contamination.

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