ARDC Director’s Comments

Since I have been at the ARDC, there have been discussions relative to the quality of our potable water. I am sure everyone is familiar with the water quality issues related to the Department of Defense contaminants that are part of the EPA Superfund project. We have worked with the Army Corp of Engineers to move potable water wells out of these contaminant plumes. I was confident that we had adequate water quality and quantity until recently.

We are now experiencing high levels of nitrate in our potable water wells. We have our highest ground water nitrate levels on the north border of the ARDC. Nitrate levels decrease from north to south on the ARDC. Groundwater flows are to the south/southeast. Unfortunately all of our municipal wells are on the north side of the ARDC near the water mainline loop system and out of the DOD contaminant plumes.

As a result, we have entered into an agreement with the Nebraska Department of Health (consistent with their regulations) that allows us to operate our non-community water system at nitrate levels up to 20 ppm. Per regulation, the water in our municipal system should not be consumed by pregnant women and children under the age of 6 months. Bottled water will be available for those who cannot drink the water. Appropriate notices have been sent to those on the system and posted at drinking locations. It is important that employees and visitors to the ARDC understand these restrictions.

On a positive note, I would like to welcome Mark Steele to the ARDC. Mark is our new Research Data Specialist - GIS. Welcome Mark!

Upcoming Programs for Producers & Others

At the Saunders County Extension Office located at the ARDC August N. Christenson Research & Education Building unless otherwise noted...

**ARDC Director’s Comments**

**Upcoming Programs for Producers & Others**

- Irrigation and Energy Conservation Workshop
- Nebraska No-Till Conference
- Crop Scout Training for Producers & Others
- Pesticide Applicator Training
- Switchgrass Insect Research
- Stable Fly Research
- Corn Rootworm Research
- Beekeeping Research and Programs
- Get Your Green Thumb Ready!
- Master Gardener Training for Local Gardeners
- Uniformed Management Training
- Irrigation and Energy Conservation Workshop
- UNL Extension - Know how. Know now.
- ARDC Feature Unit - Entomology
- Department of Agriculture and Natural Resources
- Agricultural Research & Education Center
- Apiculture Lab Provides Apiculture Laboratory Information
- Corn Disease Management Workshop
- UNL Extension in Saunders County
- UNL Department of Entomology
- Stable Fly Research
- Corn Rootworm Research
- Switchgrass Insect Research
- Beekeeping Research and Programs
- Get Your Green Thumb Ready!
- Master Gardener Training for Local Gardeners
- Uniformed Management Training
- Irrigation and Energy Conservation Workshop
- Pesticide Applicator Training
- Sprayer Technology for Growers
- Switchgrass (Panica virgatum) is native to the North American Great Plains. Historically, this prairie grass has been used primarily as a warm-season forage and as a component in prairie restoration plantings. In 2000, the Department of Energy's Bioenergy Feedstock Development Program identified switchgrass as a potential biofuel crop. While no switchgrass cultivars have yet been specifically developed for use as a biomass energy crop, research at the USDA Grain, Forage, and Bioenergy Research Unit in Lincoln, Nebraska is currently assessing the genetic potential and economics of growing switchgrass for biofuel production.

Essential to the goal of optimizing switchgrass as a biomass energy crop, is a comprehensive knowledge of potentially important arthropods. On-going entomological research efforts at the ARDC are working to identify the insects and mites associated with switchgrass, investigate their biology, seasonal abundance, and injury potential, and develop management alternatives for potential pests. Special attention is being directed at identifying natural enemies which may play an important role in regulating pest populations, and on locating insect-resistant germplasm.

Beginning in 2007, soil, foliar, and airborne arthropods were collected every 2 weeks throughout the growing season from two switchgrass stands at the ARDC. The first stand, planted in 1998, provided established switchgrass plots, while the second, planted in 2006, offered a newly seeded stand for comparison. A third stand was sampled at Nine-Mile Prairie in Lancaster County, Nebraska to document the arthropod complex in switchgrass under minimal management conditions. Pitfall traps and soil cores were used to sample surface and soil dwelling insects, while sticky traps and vacuum samples collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preliminary findings indicate that weevils, leaf beetles, leafhoppers, and chinch bugs collected leaf-feeding and flying insects. Preci...
inflicting painful bites. Stable flies need one and sometimes two bloodmeals each day to develop their eggs. Unlike mosquitoes where only the females bloodfeed, both male and female stable flies require blood to reproduce. Stable fly maggots live in fermenting or decomposing vegetative material such as silage, spoiled grain and hay or straw mixed with animal wastes. Historically, stable flies have been primarily associated with confined livestock in the barnyard environment. However, improved sanitation by the removal or covering of potential developmental sites has greatly reduced their numbers in confined livestock operations. Over the past 20 years, livestock producers have switched from feeding pastured cattle small square bales to large round bales during the winter. Cattle can waste up to 50% of the hay at large round bale feeding areas. This waste hay combined with manure and urine provides an ideal habitat for stable fly maggots. With the expansion of the stable fly habitat to pastures, their economic impact on livestock producers has increased to an estimated $1 billion per year. This does not include their impact on companion animals and human recreation.

The USDA-Agricultural Research Service (ARS) Agroecosystem Management Research Unit, in collaboration with the Department of Entomology, has been conducting research on stable flies at the ARDC for nearly 30 years. This facility offers unique opportunities to study stable fly development, migration and feeding in a diverse agricultural environment. Current research focuses on characterizing winter hay feeding sites in the pastures, quantifying stable fly development in those sites and developing cultural, physical and chemical control technologies to eliminate stable fly larvae. Related research involves monitoring adult stable fly movement after emerging from developmental sites to search for blood meals. This information is important to determine how large an area must be included in a control program to reduce stable fly numbers. Weather parameters (temperature and precipitation) are used to develop models to predict stable fly population dynamics. Information from such models can be used to alert producers of the impending need to implement control procedures.

Researchers have estimated that as many as a million stable flies can develop and emerge from a winter hay feeding circle. Given that producers will frequently locate three to five feeders in a pasture, these sites can be tremendously productive. Most of the flies emerge from these sites from mid-June through early-July. Few flies emerge after this time. Generally, flies can develop and emerge from a winter hay feeding circle. Given that producers will frequently locate three to five feeders in a pasture, these sites can be tremendously productive. Most of the flies emerge from these sites from mid-June through early-July. Few flies emerge after this time. Generally, flies can develop and emerge from a winter hay feeding circle.

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Extended Visions

January/February 2008

Midwest, especially in situations where corn is planted in the same field for two or more consecutive years. Corn rootworm larvae feed on corn roots which can cause substantial damage to corn plants and reduce grain yield. Research on the biology, ecology, and management of corn rootworms has been conducted at the ARDC Insect Field Laboratory since the mid-1960s. The main goals of ongoing research are 1) to increase our understanding of the biology and behavior of rootworm species, and 2) to develop and evaluate alternative corn rootworm management techniques and strategies. Many recent experiments have been conducted to evaluate new rootworm management technologies (e.g., seed treatments, and Bt corn hybrids) that are being developed by industry. Results of ARDC efficacy and yield trials are annually made available to the public through the Department of Entomology website (http://entomology.unl.edu) and are used to develop and support insect management recommendations in field corn.

Department of Entomology faculty are also actively working with growers, industry, and regulatory organizations to develop effective but practical resistance management strategies that are required by the U.S. Environmental Protection Agency (EPA) when new transgenic corn hybrids are registered. Growers are currently required to plant a refuge (i.e., corn hybrid that does not express the rootworm-resistant Bt protein) adjacent to rootworm-protected corn. The refuge is part of the required resistance management plan which has been designed to produce beetles that have not been exposed to Bt. Beetles emerging from the refuge can then be available to mate with beetles that survive from Bt corn to slow the potential evolution of resistance to the Bt event. To develop an effective refuge system, new information on rootworm biology is needed in relation to Bt hybrids and other management technologies. Therefore, field experiments are being conducted at the ARDC to increase our understanding of rootworm age specific mortality, mating behavior, and female ability to reproduce after feeding on various Bt transgenic events. The long-term goal is to work with industry and the EPA to provide growers with a suite of viable rootworm management tactics (growers can then adopt the tactics that best fit their needs) and to facilitate their use within an IPM framework in combinations that are sustainable over time.

UPCOMING PROGRAMS - Cont. from P. 1

February

4-5 NSFGRP Consultations 8:00-5:00
14-15 NSFGRP Consultations 8:00-5:00
14-15 NSFGPP On-Farm Research Update 8:00-5:00
16 Private Pesticide Applicator Training 1:00-3:00
16 Private Pesticide Applicator Training 1:00-9:30 pm at the Wahoo Sale Barn
17 Field Scout Training for Pest Managers 8:00-5:00
18 NSFGPP Consultations 8:00-5:00
19 Nebraska No-Till Conference 10:00-2:00
20 Alfalfa Management for Farmers 10:00-2:00
20 Nebraska No-Till Conference 10:00-2:00
21 Alfalfa Management for Farmers 10:00-2:00
22 NSFGPP Consultations 8:00-5:00
23 Unit Managers Meeting 1:00-3:00
24 Unit Managers Meeting 1:00-3:00
24-25 Private Pesticide Applicator Training 1:00-9:30 pm
25 Corn Disease Management 9:30-1:00
26 Unit Managers Meeting 1:00-3:00
26 All Facilities Safety Training 12:00-2:00

March

6 Sprayer Technology for Growers 8:00-5:00
14-15 Private Pesticide Applicator Training 1:00-9:30 pm
15 Unit Managers Meeting 1:00-3:00
16 Unit Managers Meeting 1:00-3:00
20 Nitrogen Management Training 7:00-9:00
26 All Facilities Safety Training 12:00-2:00

April

1 Private Pesticide Applicator Training 1:00-4:00
9 Unit Managers Meeting 1:00-3:00

Farmland Lease Arrangements for Tenants and Landlords

Feb. 18

* UNL Extension is offering a workshop to assist landowners, tenants and other agri-business professionals with issues related to farmland ownership management, and leasing arrangements. This program will also be held on February 8 in Seward.

Nebraska No-Till Conference

Feb 20 - ARDC and Feb 21 - Holdrege

* UNL Extension will give corn and soybean producers information on how to be successful with minimum and no-till at the Nebraska No-Till Conference. The conference will be held from 9:30-3:30 pm and producers will learn the benefits of no-till and how it can work for them. Speakers include no-till farmers, university specialists and industry representatives.

The agenda for the ARDC conference includes: "Three Farmers, Three No-Tillers, Three Different Stories." No-Tiller #1 = Story #1 - Duane Lange; No-Tiller #2 = Story #2 - Kees Thompson; No-Tiller #3 = Story #3 - Jerry Crew; Controlling Trees in No-Till - Lowell Sandell; and What I heard today and What I learned in 2007! - Paul Jasa.

The Holdrege agenda includes: Do You "C" What I "C" - Dwayne Beck; No-Tiller #1 = Story #1 - Keith Thompson; Rainfall Simulator Demonstration on Conventional and No-Till Soils - Dan Gillespie; No-Tiller #2 = Story #2 - Duane Lange; and Residue Management - Achieving Uniform Emergence - Paul Jasa. For more information or to register, call (402) 335-1373.

The free event is sponsored by UNL Extension in the university’s Institute of Agriculture and Natural Resources, Nebraska Soybean Board, Lower Platte North Natural Resources District, Tri-Basin Natural Resources District, Central Nebraska Public Power and Irrigation District, USDA Natural Resources Conservation Service, Farm Credit Services of America. John Deere Risk Protection and Ag Service Associates.

UPCOMING PROGRAMS - Cont. on P. 4

Alfalfa Management for Farmers

Presented by Bruce Anderson, UNL Extension Forage Specialist and Keith Jarvi, UNL Integrated Pest Management Extension Assistant. Determine the best strategies for your alfalfa operation. This session also includes insect problems in alfalfa, including identification of insects, scouting techniques, economic thresholds, and management options.

Sprayer Technology for Growers

March 6

Presented by: Robert Klein, UNL Extension Cropping Systems Specialist. The performance of a pesticide is highly dependent on the quality of the application. Many new developments have occurred in pesticide application equipment with post application pesticides and the development of herbicide resistant and tolerant crops. How the sprayer should be set up along with nozzle selection to maximize efficacy while managing spray drift, will be covered in this workshop.

NSFGPP On-Farm Research Update

March 11

Corn and soybean growers are invited to attend the Nebraska Soybean and Feed Grains Profitability Project on-farm research update March 11 at the ARDC.

The 9 a.m.-3 p.m. program will be at the August N. Christenson Research and Education Building. Producers will obtain valuable crop production-related information from on-farm research projects conducted on Nebraska farms by Nebraska farmers.

The Nebraska Soybean and Feed Grains Profitability Project is an on-farm research project designed to provide farm operators with an understanding of how to conduct crop research on their farms using their own machinery. Contracts are signed, statistically analyzed, and conducted for three years to assure reliable, useful information.
Registration is $25 for non-NSFGPP members and includes a copy of the annual on-farm research report, refreshments and noon luncheon. Pre-registration is encouraged by March 6. To register or for more information about the Nebraska Soybean and Feed Grains Profitability Project or how to conduct crop-related research on your farm, call (800) 529-8030 or visit http://on-farmresearch.unl.edu.

Crop Scout Training for Pest Managers March 17  
* UNL Extension’s Crop Scout Training for Pest Managers is targeted at agribusinesses and producers. The expertise of university and industry agricultural specialists is drawn upon to provide the latest, up-to-date, research-based information in crop production. Topics include growth staging, recognizing fertilizer deficiencies, major pest identification, understanding insect economic thresholds, handling soybean cyst nematode, and weed and disease identification and management. Continuing education credits for the Certified Crop Advisor program are available.

Those who register one week in advance of programs will receive a discount. Fees include lunch (unless otherwise noted), refreshment breaks and workshop materials. Fee for this workshop is $70 for those registering up to one week in advance and $80 thereafter.

Nitrogen Management Training March 20  
* All producers using fertilizer in the LPN-NRD must attend nitrogen certification at least once every four years. Training will be held at the ARDC on March 20. ❏

Plant Science Students Apply Skills By Growing Holiday Plants
by Students of the Mead Public High School Plant Science Class

The Mead High School’s Plant and Soil Science class grew Poinsettias during most of the fall semester. The students enrolled in this agriculture class monitored the plants closely for diseases or insects that might have cropped up or killed them. The class members are happy to say that “none were lost.”

The students were responsible for taking care of almost all phases of the poinsettia management, applying the plant science skills they learned in the class. Even though the school greenhouse is monitored to automatically adjust the temperature and has a watering system, it was the students who took care of the daily needs of the plants. The conditions in the greenhouse are controlled electronically by an environmental monitor, which adjusted the temperature as the plants developed and grew. Each student was responsible for the daily care of twenty plants. Upon arrival, the incoming plants were treated with fungicides by the students, who were dressed in protective safety gear. Integrated pest management was used and pesticides were applied thereafter only as needed. Sticky traps were set up to catch any wayward insects, and to give the class an early warning of any serious insect problems. The class members handwatered the poinsettias so they could better control watering. Over watering can lead to plant diseases such as root rot.

The students were also responsible to do the advertising for the sale of the plants. They designed posters and placed advertisements in the school newsletter. The class will host an evening open house to kick off the sale, which will be manned by the students. The sale will continue for two weeks thereafter. Customers who wish to purchase Poinsettias after the open house can purchase plants during the school day.

The plant colors ranged from red to pink to white and various mixed colors. Proceeds from the sale benefit horticulture and landscape projects and sustain the greenhouse maintenance fund.

D o you love working in the garden? Would you like to learn more about plant culture, insect and disease problems? Then why not consider becoming a Master Gardener? Anyone with an interest in plants or gardening is welcome. Master Gardeners volunteer pass along their horticulture knowledge to beginning gardeners and help them learn more about all aspects of horticulture, including growing flowers, vegetables, managing lawn, water gardening or choosing the right landscaping tree or shrub. They also have the opportunity to meet and learn from other Master Gardeners in the community, who share their love of gardening. Master Gardener Training for Saunders and surrounding counties will be on the following Thursdays from 9:00 a.m. - 4:00 p.m.: 2/28, 3/13, 3/20 and 3/27. Locations will be held at the UNL Extension office in Dodge County at 1206 W. 23rd Street in Fremont. The fee for Master Gardener training is $150. Request more information below. Or apply online at the following website: http://extensionhorticulture.unl.edu/MGWithl. For more information, contact Sarah Browning at (800) 830-4855.

Send me information about becoming a Master Gardener!
Return to: University of Nebraska- Lincoln Extension  
1206 West 23rd Street, Fremont, NE 68025 or call (800) 830-4855
Name_________________________  
Address_________________________  
City_________________________  
State_________________________  
Zip_________________________  
Phone_________________________  
E-mail Address_________________________  

Get Your Green Thumb Ready!
Creating a Horticulture Paradise Series
Feb. 19 - Container Gardening With Hypertufa, Kelly Feastan
Feb. 26 - Effective Control of Backyard Wildlife, Stephen Vantassel
March 4 - Earthkind Roses, LuAnne Langbee
March 11 - Diseases of Trees, Laurie Stepanek
March 18 - Small Fruit Selections for Eastern Nebraska, Vaughn Hammond
Time: 7-9 p.m.
Location: UNL Extension, 1206 W. 23rd Street, Fremont.
Pre-registration required for these free programs, but is not required. For more information contact Sarah Browning, (800) 830-4855.

Horticulture-Related Pesticide Safety Education Program
Horticulture-related Pesticide Safety Education Program will be held at the Extension Office in Dodge County (1206 W. 23rd Street, Fremont) starting at 9:00 a.m. Initial training will be held on February 5. Categories trained include: General, Ornamental &Turf, R-O-W, Fumigation, and Wildlife Damage. Recertification will be held on February 7. Preregistration required at http://pested.unl.edu. For more information contact Sarah Browning, (800) 836-4855.