Sundancer is the product of a long-standing partnership between UNL faculty and staff, the United States Golf Association, and the Native Turfgrass Group.

There’s a new turfgrass in town or will be soon at many golf courses, athletic fields, parks and home landscapes. The University of Nebraska recently introduced the release of its newest seeded buffalograss cultivar, Sundancer. The announcement was made during the Northern Seed Trade Association (NSTA) and Field Seed Trade meeting at the ARDC this summer.

While the University of Nebraska buffalograss breeding team includes UNL faculty and staff, the team partners with the United States Golf Association partnership and with the Native Turfgrass Group. These partnerships have brought forth significant improvements in production, management and varieties of turfgrass over the last 30 years. The release of UNL’s Sundancer variety is the latest outcome of these entities working together.

According to UNL researcher Keenan Amundsen, UNL’s breeding program for improved seeded buffalograss seeks to develop new turfgrass varieties that are well-adapted to Nebraska conditions.

- **Sundancer**
  - 4 to 5 pounds
  - Roots selected for turf quality and production characteristics

**Sundancer Buffalograss**

Introducing Sundancer Buffalograss

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**The Plant Doctors**

Studying Plant Diseases and Health Issues, Providing Diagnosis

Sometimes identifying plant health threats is relatively obvious when the unwanted visitors are clearly visible. Other telltale signs of damage may also be present, such as chewing patterns on leaves that are characteristic of specific insect infestations. But other times, the threat is not as easily observable until damage is present. Viruses, bacteria, fungi, and other microorganisms trigger diseases that can cause accelerated or sudden plant mortality and in the case of crop production, severe yield losses.

Climate, light, water, soil condition, seed variety, prior infestations, production practices, and other environmental factors meld together to generate the breeding grounds for the latest crop/plant threat “de jour.” So there is a constant need to identify and understand the connection between these factors and pathogens that cause disease and how our important field crops and urban plants grow and are affected by disease.

Just like a physician providing a diagnosis and treatment plan for a human patient, plant pathologists identify the causal agents of plant disease and research how to effectively manage them. The mission of the UNL Department of Plant Pathology is to provide solutions to significant plant disease, develop new knowledge of plant-pathogenic and plant-associated microorganisms, and provide quality, relevant education to mitigate their impact.

The UNL Department of Plant Pathology has a long tradition of providing crucial research in combatting plant disease and supporting growth of healthy plants and sustainable agricultural systems. The research and outreach provided by the department plays a vital role economically and environmentally for many Nebraskans, whether it is in a crop field, a home garden, an orchard or golf course. The department’s efforts are essential in securing global food production now and in the future.
Protecting Small Grains

The UNL wheat and small grains pathology program conducts research that assists growers in avoiding them on what diseases are occurring in the region and ways to fight those diseases. This year’s mix of diseases observed in Nebraska included wheat rust, wheat aphids, wheat curl mite, Cephalosporium leaf blight, Fusarium crown and root rot, Septoria leaf blight, and Head blight (FHB) which provides a double hit for growers. FHB, otherwise known as “scl”, causes damaged kernels and yield losses. But an FHB infection also increases the likelihood of mycotoxins harmful to livestock and humans contaminating the grains. Fields containing corn or wheat residue that provide an ideal breeding ground for FHB. The FHB fungus overwinters on these residues in the spring. Spores are released from the residues and infect wheat heads during flowering. FHB is favored by prolonged wet and warm weather before and during flowering and can inflict damage to small grains in a matter of days, especially in fields with a history of FHB.

What’s Wrong With This Plant?

Unusually dry plants do getirk. When diseases show up in the landscape or field, UNL has many resources to assist in diagnosing the problem and how to treat it.

Located in the UNL’s Cropwatch website. Visit the website at cropwatch.unl.edu and select “Plant Diseases” to help identify your problem and determine appropriate recommendations.

Plant parasitic nematodes are small worm-like animals that feed on soybeans and corn. There are over a dozen different species that are common in Nebraska corn fields. Multiple species may exist in a corn field. Some are harmful to corn, while others are not. It is important to know what on nematode species exist and how many.

With soybean cyst nematodes, the parasitism can’t be seen in the field on the crop. They can be transferred via equipment, runoff water, wind, wildlife, and movement of soil. Soybean cyst nematodes can be introduced in seed. They are non-infested seed in Nebraska and in soybean producing states all across the country. A gradual increase in SCN populations have been seen in Nebraska over the last several years.

The first step to managing SCN is to determine where samples are from in a field. Trees and roads can be used to determine soil core samples from a field. A soil sample submitted to UNL’s Plant and Pest Diagnostic Clinic can identify SCN populations in a field. Soil samples are collected at any time, although full samples are most conclusive since SCN numbers are highest near spring emergence when soils are above 40°F. Two 8-inch long soil cores collected from the side of the old crop row if soybeans have been grown in a field. If an SCN infection is not properly managed, numbers increase so much that it will no longer be profitable to grow soybeans in that field. This is one reason why growers may switch to corn for many years. Two types of rotation are needed in controlling the SCN population – rotation to a non-host crop and rotation to resistant varieties and cultivars. Non-host crops and resistant varieties should not be grown in the same group three years after the rotation plan - when coming back into a field that has cyst nematodes.

Soybean cyst nematode research is ongoing at the ARDC. The soybean cyst nematode variety evaluation program includes a non-infested test site at the ARDC. As a part of the integrated management program, soybean farmers select resistant varieties for their infested fields. A program funding provided by the Nebraska Soybean Board provides data to farmers with the selection process. The SCN variety evaluation program utilizes infested seed and SCN populations in Nebraska at the ARDC. Having a consistent non-infested site at the ARDC. A gradual increase in SCN populations have been seen in Nebraska over the last several years.

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Long-time Employees Retire with Combined 82 Years Service at ARDC

Long-time employees, John Kirchmann and Dick Meyer, recently retired after a combined 82 years of service at the ARDC. John Kirchmann began his career at the ARDC in 1973 and retired from his position as an ag research technician with the ARDC farm operations unit. He worked primarily with planting and haying operations, and as one could imagine, has seen tremendous changes in crop production over the years. Dick Meyer started with the University in 1972 with the intent to “only work for a couple of years.” Forty-two years later, he retired from serving as the feedmill manager located at the ARDC. Meyer ensured that feedstuffs were provided for over 6,500 domestic farm animals used for research and teaching at the ARDC, as well as for livestock on campus and other University locations.

Learning on the Greens

Did you know UNL offers a turfgrass and land management major? You could be responsible for managing the health and appearance of athletic fields, golf courses, parks, and home and commercial lawns and grounds. Learn more at: caenx.unl.edu/majors.

A Bird’s Eye View

Participants at UNL Extension’s Crop Management Diagnostic Clinic focusing on precision agriculture learned about evaluating crop stress with aerial sensing platforms. A highlight of the training was seeing unmanned aerial vehicles (UAVs) in action and learning how they might be utilized in crop production.

Calendar of Events

**OCTOBER**

31  Husker Beef Nutrition Conference
   This conference focuses on the impacts and options for managing beef cattle, as well as the latest updates on UNL research.

**NOVEMBER**

5  Introduction to Unmanned Aircraft Systems: An Extension Inservice Opportunity

6  Watersheds, Wells, and Onsite Wastewater Training

12  4-H Council

17  Extension Board

**DECEMBER**

2  LTAP Erosion Control and Sediment Inspector Certification
   See what else is on the calendar, visit ardc.unl.edu.

The latest in turfgrass research was highlighted at the Nebraska Turf Association (NTA) turf field day. The event provided an opportunity for over 220 attendees to visit with UNL specialists and exhibitors while seeing research studies up close, learning about new cultivars, and participating in weed, buffalo grass and golf tours.

Protecting Small Grains - Continued from page 3 considered. Wegulo recommends an integrated approach which combines resistant/tolerant cultivars with fungicide application. Selecting the correct fungicide at the right time is essential in controlling FHB. In Nebraska, two fungicides, Prosero (prothioconazole + tebuconazole) and Caramba (metaloxazole) effectively suppress FHB, but don’t completely control the disease. Fungicides need to be applied at early flowering to maximize their effectiveness.

Resistance screening is a collaborative project between the wheat patholgy program and the wheat breeding program. Each year several thousand breeding lines are screened for resistance to stem rust and FHB. Stem rust screening involves raising inoculum (spores) in the greenhouse, using it to inoculate breeding lines in the greenhouse and field, followed by visual assessment of disease. To screen for resistance to FHB, corn kernel inoculum is prepared in the lab and greenhouse and then spread by hand to the ground in the field several weeks before flowering. In addition, a spore suspension prepared in the lab from cultures of the FHB fungus is sprayed in the field during flowering. A misting system ensures there is enough moisture for FHB to develop on the wheat heads. Most FHB infections occur during flowering, therefore misting starts before flowering and continues through the flowering period. Wheat heads are assessed for FHB incidence and severity in the field or, more commonly, they are collected and frozen for later assessment in the lab.

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