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Native Versus Non-Native Plant Species

There is much talk and consternation these days about the worth of native plants in relationship to non-native or exotic species. This has become a rather emotional issue with certain groups claiming there is no appropriate place for non-native species in North America. This point of view is rather narrow since basically all the economically important plants cultivated and used to feed the U.S. population are not native species. To remove the emotional connotations from this controversy let us define the terms. According to the Dictionary of Botany, native species are individuals or groups of plants that were not introduced into a geographical area (ecosystem, habitat, or vegetation zone) by mankind. The keyword in that definition is area. What is the natural area of plant distribution? Plants normally have natural areas of distribution based on climatic and edaphic factors. Most plants native to North America, for example, are not located everywhere in North America. They are confined to certain natural areas based primarily on the above mentioned factors. Non-native species are individuals or groups of plants that have moved into an area inadvertently or overtly with the assistance of humans. These exotics can exhibit unique biological characteristics such as rapid and early growth, high reproductive rates, and lack of natural control mechanisms such as insects or diseases that affords it competitive advantages over native species. Non-native species usually gain access to ecosystems by disturbances such as drought, flood, fire, or by human influences such as plant introduction, over grazing, fire suppression, cultivation, or other land disturbance activities. Plant introductions have resulted from a variety of human activities such as animal importation, impurities in crop seed, soil on nursery stock, ship ballast, and deliberate release of cultivated varieties or ornamentals. Many of these exotic species originate in Europe or Eurasia.

The point is that many exotic species have been introduced to this country and have become established in certain locations utilizing their competitive advantage or man's poor management decisions. Exotic species can either become invasive species or find a place producing forage, food, fiber, or aesthetics for our society. Plants, whether they are native or introduced, do not have any motives or political affiliations. Their only purpose is to grow and reproduce. Some individuals are foolish enough to think they can turn back the clock and have ecosystems the way they were several hundred years ago. The country has been extensively colonized since the Pilgrims landed! Wishing for pristine and pure ecosystems is folly. Get back to reality and work with the situation we are faced with today. Try to limit new introductions (do not demand the new wonder plant that is guaranteed to grow faster, produce more, etc.), maintain management techniques that will limit exotic growth and reproduction, and do not encourage utilization of introduced ornamental species in your landscape. These are some of the ways the average person can help to reduce the spread of introduced species. However, admit that the use of introduced species is widely accepted in our agronomic and horticultural industries. The US agricultural economy is totally dependent on plant species introduced to this country.

Seed Smut of Switchgrass

Seed smut of switchgrass, caused by the fungus *Tilletia maclaganii*, is a progressive disease that can severely reduce seed yield in switchgrass seed production fields. The fungus apparently lives indefinitely in the crown of living infected plants and can only be controlled at that point by destruction of the infected stand. However, survival time of the fungus in the field without a living host is unknown. The fungus has remained viable for up to two years in test tubes containing a moist, steam sterilized soil kept at room temperature. In similar laboratory experiments no fungus could be recovered from test tubes that were not kept in a moist state. Thus, moisture within the system seems to be essential to the survival of the fungal pathogen. The objective of this study was to determine how long *T. maclaganii*

can survive in a field setting after the infected stand of switchgrass is destroyed. A small isolated field of Blackwell switchgrass that had produced smutted panicles for several years was utilized. Meter square plots were prepared in the heavily smutted field on June 12, 2001. The four plots were tilled several times to prepare the seedbed for the new planting of Blackwell switchgrass. The individual plots were seeded on June 13, 2001 with Blackwell switchgrass and the remainder of the field was sprayed with glyphosate to kill the infected switchgrass plants. In 2002 four additional one meter square plots were seeded to Blackwell switchgrass in the same field. Newly seeded plots were irrigated as needed until the stands were established. Plants resulting from the 2001 planting produced no smutted panicles in 2001. Similarly in 2002 no smutted panicles occurred in any of the plantings. Therefore, it appears that planting new switchgrass seed in a heavily infested area may not create newly infected plants. Thus, it would appear that the smut fungus died out in the soil prior to reinfecting new plants.

The Biology and Control of Seed Smut in Switchgrass is a cooperative study between the PMC and Dr. Don Stuteville, Forage Crop Pathologist at Kansas State University.

Medicine Wheel

"Medicine wheels" have been located in many different parts of western North America. The name "medicine wheel" came from the early settlers who identified the rock rows radiating from the center with the spokes of their wagon wheels. Since American Indians were not aware of wheeled vehicles before European influence they would not have named these artifacts wheels. A closer interpretation of the original meaning would be "Medicine Circles." Some original medicine wheels have been estimated to be more than 2,000 years old. Most medicine wheels have at least four rows of rock radiating from the center. However, some circles have been found with as many as 32 rows, these have proven to be very accurate calendars. They served two main purposes. One was to keep track of the seasons. Second, they served as a resource to instruct tribal members in spiritual beliefs.

Each tribe had its own specific interpretation of the various aspects of the medicine wheels. There were also many common points that they agreed upon. Each circle was divided into quarters with each quadrant symbolizing distinct traits, seasons, and times of the day.

1) East is the color yellow, signifying wisdom, clarity and physical aspects. It symbolizes spring and dawn.
2) South is either the color green or red, signifying trust, love and emotions. It symbolizes summer and day.
3) West is either the color blue or black, signifying intellect, experience and logical thinking. It symbolizes autumn and dusk.
4) North is the color white, signifying purity, cleansing, and spirituality. It symbolizes winter and night.

To display this cultural aspect of Indian heritage to the general public a medicine wheel has been constructed alongside a walking path at the PMC headquarters. The circle is 30 feet in diameter with an under lining of weed barrier fabric. The medicine wheel constructed here has 4 rows of rock radiating from its center. Each row aligned with one of the major compass points. Rocks have been strategically placed on the fabric and foliage from native plants has been spread as mulch to cover the weed barrier. Eventually native perennial wildflowers will be planted inside the wheel. The color of the flowers will be coordinated with the traditional color of the quadrant.

A brochure explaining the historical and cultural significance of the medicine wheels is being produced. The meaning of each rock, the quadrant symbolism and color significance will also be explained.

PPFA Meeting in Pittsburg

There is still time to register for the Plains and Prairie Forestry Association annual meeting being held this year at Pittsburg State University in Pittsburg, KS. The meeting this year will be held in conjunction with the National Black Walnut Council. Registration forms and an agenda can be accessed on the internet by going to the Nebraska Forest Service website: www.nfs.unl.edu. The PPFA Newsletter for May 2003 is available on the NFS website under the “Forestry Organizations and Resources” link. The May Newsletter can be downloaded as a pdf file from the Internet. It is in the May 2003 Newsletter that information about the meeting can be located. Registration by July 11th can save you or your agency $20.00 and will be money well spent. The meeting begins July 27th and will adjourn on Wednesday the 30th at 12:00 noon. There are plenty of accommodations available in Pittsburg so book a dorm or motel room today.