



Farm Views

Chemigation Training Scheduled March 21

Chemigation is the process whereby fertilizers and/or pesticides are applied to land or crops through an irrigation distribution system.

Site Permits

Nebraska's chemigation law requires that each chemigation injection location be issued a permit (open discharge systems are exempt because there is no physical connection back to the water source). Permits are issued by the Natural Resources District (NRD) after the site has been inspected and found to meet the safety equipment requirements. Chemigation site permits must be renewed annually with the NRD.

State law prescribes the safety equipment that must be in place and functioning at each site, including: An anti back-flow device (check valve) on the main irrigation supply pipe. Behind (upstream from) the mainline check valve, the system must be equipped with a sump and automatic low-pressure drain to intercept any seepage that might get past the check valve and conduct it safely away from the well. Each system must also be equipped with an inspection port that allows inspection of the check valve and low pressure drain. Finally, there must be a vacuum breaker that allows air into the system after the pump stops. This is necessary for proper functioning of the low-pressure drain. Often, the vacuum breaker can be easily removed serving as the inspection port.

The injection system must be equipped with an interlock that will shut down the injection pump in the event the main water pump stops. There must also be a check valve to prevent water in the irrigation system from

flowing back through the injection line into the chemical storage tank in the event the injector pump stops working while there is water in the system.

Applicator Certification

In addition to requiring a permit for the site, the applicator must be certified as a chemigator by attending a training session and passing a written examination covering safety issues, equipment calibration and the chemigation law. Every chemigator must be recertified every four years.

Lancaster County Extension will conduct chemigation training on March 21 beginning at 1 p.m. at the Lancaster Extension Education Center, 444 Cherrycreek Road, Lincoln. This training session is intended for initial certification or recertification of chemigators. Initial certification is \$15 and renewal is \$10.

Producers seeking initial certification or who need to be recertified, are encouraged to preregister for the training session. To preregister, obtain an application form from the Lancaster County Extension office, 444 Cherrycreek Road, Lincoln, NE 68528 or call 441-7180.

People paying the fee for initial certification will receive a packet of written training materials by return mail. All chemigators are encouraged to study the materials prior to attending the training session. Bring study packets to the training session as these will be referenced.

All individuals are encouraged to bring a calculator and pencil to the training/testing session. (TD)

2002 Master Conservationist Award Nominations due April 1

Sponsored by the Omaha World-Herald and the University of Nebraska Institute of Agriculture and Natural Resources, the Master Conservationist program was established in 1983 to recognize those who have excelled in soil and water conservation. Award categories include production agriculture, residential, community and youth.

For guidelines, applications



or more information, contact Dick Fleming, Institute of Agriculture & Natural Resources at 472-8742 or email rfleming1@unl.edu.

Award recipients will be recognized during a special presentation at the Nebraska Association of Resource Districts annual banquet Sept. 23, at the Kearney Holiday Inn, and will be featured in the Omaha World-Herald on Sept. 22.

Deadline for nominations is April 1. (GB)

Managing Grass Pastures in Eastern Nebraska

Forage Species Selection

Forage grasses fall into two general classes, cool-season and warm-season grasses. Each class of grass has distinctive growth characteristics and can provide season-long forage production if used in a rotational grazing system.

In eastern Nebraska, cool-season grass pastures are the most common. Cool-season grasses begin growth in early spring and often produce 70 to 80 percent of their total annual forage production by July 1. They are largely unproductive during the hot summer months unless irrigated. If moisture is available in the fall, they grow again until freezing temperatures bring on dormancy. When planting a cool-season pasture, it is wise to plant a mixture of species as each has slightly different growth habits. This will extend the grazing time and prolong the productivity of the pasture. Inclusion of legumes in the mix is also a good idea. One recommended cool-season grass mix is a combination of three pounds orchardgrass, four pounds smooth bromegrass, one pound red clover and one pound grazing-type alfalfa. For horse hay or pasture, include one to two pounds of Timothy in the mix.

Warm-season grasses start growth about a month later in the spring than cool-season grasses and grow slowly until soil temperatures exceed 65 degrees F and air temperatures exceed 80 degrees F. As a result, in a purely warm-season pasture, spring soil moisture is conserved and used from June 1 to September 1 when forage growth is most rapid. Most warm-season grasses become dormant in September and provide no new forage production for fall grazing.

No matter the species or forage type, (warm- or cool-season), forage quality is highly correlated to maturity, with immature growth stages providing highest nutritional quality. Forage quality (both energy and protein) drop rapidly once seedstalks develop.

If only cool-season grass pastures are to be used, extra management is required to ensure adequate forage for season-long grazing. Forage production and quality can be optimized by splitting the pasture into paddocks then grazing in a rotation allowing time for regrowth to occur between grazing periods.

If one does not plan to supplement grass production with hay or grain during the slow growth period in the summer months (summer slump), the stocking rate must be matched to the season-long forage production of the pasture. When matching the stocking rate to the season-long forage production, cool-season grass will out-grow forage utilization by the animals during the rapid

Grazing Fescue Requires Care

Tall fescue is a great pasture grass and is becoming more abundant in pastures with better moisture. But it can contain some toxins to livestock.

Tall fescue is a high yielding and persistent cool-season grass. Compared to other grasses, fescue grows especially well in the fall so producers often use it for winter grazing. Fescue has an important problem. Much of it has an internal fungus, or endophyte, that produces chemical alkaloids that help the plant resist insects and diseases, which is good. However, tall fescue also adversely affects body temperature regulation, blood flow and feed intake in livestock.

This can cause serious problems for animals grazing tall fescue. Horses can be very sensitive. Mares can abort or have stillborn foals, or they may fail to produce milk. In cattle, we often see rough hair coats and more time spent standing in water

or shade during summer due to high body temperatures. Feed intake, weight gain and milk production can be much lower than normal and cows often have difficulty conceiving. In winter, a condition called 'fescue foot' can cause animals to lose hooves, ears or tail switches due to poor blood circulation during cold weather.

Most fescue in our region is infected, except for fields planted recently with 'endophyte free' seed. So if you are using infected fescue, graze non-fescue pastures during summer or breeding season and keep pregnant mares off fescue entirely. Adding legumes to fescue pasture and using supplemental feed can also help.

Tall fescue is a great grass that has one very big problem. If you learn how to use it while diminishing its problem, it might become a valuable part of your grazing resource. (TD)

Source: Bruce Anderson, Extension Forage Specialist, UNL

growth period in the spring. Frequent rotation from paddock to paddock in the spring will help keep the grasses in immature growth stages thus preserving palatability and forage quality into the summer months.

Forage that is stockpiled for later grazing during the rapid growth stage in the spring, can then be utilized during the summer months. Rotation times can be lengthened once growth begins to slow in the hotter months, but one should not graze the grasses so short that there is insufficient photosynthesis to support a healthy root system. A good rule of thumb for cool-season grasses during the summer months is to turn animals in to graze when there is 12 inches of top growth and rotate to a new paddock when six inches of growth remain.

Alternatively, when managing an all cool-season pasture system. One could harvest one or more paddocks in the spring as hay prior to seedstalk elongation to balance forage production with utilization. This will result in excellent quality hay that can then be fed to animals as necessary to help carry them through the summer forage production slump. If not needed during the summer, this hay can be fed during the winter season or sold.

Forage production can be leveled out and rotation management simplified, if some of the paddocks in a rotation are planted to warm-season grasses.

Switchgrass is a warm-season grass that, in a pure stand, can provide excellent forage production for beef animals. Before seedstalks

develop, forage quality is high and palatability is good. After seedheads emerge, nutrient levels become low and switchgrass becomes unacceptable pasture. One should begin grazing Switchgrass when it becomes ready to graze, regardless of how much grazing potential remains on cool-season paddocks. One option is to begin grazing when switchgrass is eight to ten inches tall. Graze to keep plant height between eight and 16 inches for six to eight weeks, then remove livestock for 30 to 45 days. Any regrowth can then be grazed to a stubble height no shorter than eight inches. Usually it is better to stock switchgrass too heavily and move the animals to other paddocks sooner than to stock lightly and have abundant seedhead development.

Switchgrass is often included in warm-season grass mixtures, but is less palatable than many other species and is generally under-utilized in a mixed warm-season pasture. Switchgrass does not make good horse pasture because of poor acceptance.

If Switchgrass is not used, a mixture of warm-season grasses is recommended. One such mixture that is recommended for Lancaster and surrounding counties includes three pounds Big bluestem, two pounds Indiangrass, 1.5 pounds Sideoats grama, half a pound Blue grama, and 0.3 pounds Sand lovegrass.

Fertility

The two primary nutrients of concern for pastures in

see GRASS PASTURES on page 11