

# Herbicide Application

Post-emergence herbicides are applied directly to the foliage of established, actively growing weeds. These herbicides kill weed species by interfering with their normal development through the disruption of biochemical processes within the plant. The effectiveness of post-emergence herbicides depends on having adequate contact with the shoots and leaves of the target plants. Herbicide application rates, the amount of active ingredient applied per acre, will vary according to the weed species and other factors including plant size and age, water stress, air temperature and relative humidity. Each of these factors can affect the amount of herbicide that enters the plant. Additives such as crop oil concentrates, surfactants and liquid fertilizer solutions can help increase herbicide uptake.

Post-emergence herbicides can be applied at any time during the growing season. However, the effectiveness of your herbicide application will decrease as weed species become larger and more established. Also, hot and dry conditions that create water stress within the plant can decrease herbicide effectiveness. Post-emergence herbicides are usually applied as directed sprays. When applied as a directed spray it is critical that you minimize contact of spray,

drift or mist with foliage, green bark or non-woody surface roots of desirable species. Some post-emergent herbicides, like Accord, Garlon 4 and Kerb 50-W can be applied as a broadcast application in conifer plantations. However, broadcast applications must be made after formation of final conifer resting buds in the fall or prior to initial bud swelling in the spring.

The proper calibration of your spray equipment is important to ensure an accurate and uniform herbicide application. Applying the right herbicide at the proper rate is important if you want to keep your costs down and avoid injury to the

trees on your acreage. Herbicides are especially dangerous when improperly handled, applied or disposed of. They can cause injury to desirable plants, wildlife and fish, and they can contaminate water supplies. Always read and follow the directions on the herbicide label and follow all precautionary statements. It is a violation of federal laws to use any pesticide in a way that is inconsistent with its label. The label will list the tree and shrub species on which it can be used, the weed species it will control, recommended application rates, timing of applications, disposal and other directions and precautions. (DJ)

## Controlling Dandelions

Herbicide applications before mid-April will only "burn" the leaves and weeds will grow back by Summer. As a general rule, treatments made at flowering or at the "puffball" stage are most effective in the spring, but not as effective as fall applications. Though control improves later in the spring, unfortunately so does the chance of off-site target damage to ornamentals,

gardens, etc. Amine forms of 2,4-D tend to be less volatile than ester forms thus reducing the chances for off-target damage. To further increase efficacy, apply so the product will dry on the leaf for 24 hours or more before a rain, do not mow immediately prior to application to maximize leaf area, and do not mow for three days following application to allow the products to translocate. (DJ)

## Urban Agriculture



# Maintain Drainfield for Long-Term Septic System Use

To ensure a septic system's drainfield will function properly for many years, homeowners should protect the drainfield from excess water and structural hazards, such as trees and driveways.

Excess water reduces the system's ability to percolate wastewater through the soil, which is necessary for treatment. Compacted soil and structural blockages, such as sidewalks or buildings, also hinder the system's ability to treat wastewater. In order to protect the drainfield, use these precautions:

- Divert runoff and water from roofs or downspouts away from the drainfield.
- Avoid placing underground sprinklers near the drainfield and use manually operated sprinklers in the area instead.
- Don't drive vehicles or agricultural equipment over the drainfield.
- Keep dog kennels and animal

confinement units away from the drainfield.

- Don't construct driveways, parking lots, sidewalks, patios or buildings over the septic tank or drainfield.
- Maintain setback distances when adding buildings or making improvements. A setback is the minimum distance required between the tank or drainfield and structures such as wells, foundations and surface water.
- Keep rodents and burrowing animals, such as rabbits or moles, away from the drainfield.
- Don't plant trees or deep-rooted plants within five feet of the drainfield.
- Plant grass over the drainfield and mow it frequently to encourage the grass's growth. (DJ)

SOURCES: Community and Residential Environment Team Water and Waste Group, Sharon Skipton, Wayne Woldt and Jan Hygnstrom, NU/IANR

## New Test For Lyme Disease

The Food and Drug Administration has cleared a simple, new blood test for Lyme disease that can be used in a doctor's office.

The test provides results in an hour at the point of care, compared to the standard laboratory tests which have to be performed in a lab, delaying test results. This means doctors will be able to make a probable diagnosis quicker and start treatment with antibiotics immediately.

The test, the PreVue B. burgdorferi Antibody Detection Assay, is intended to be used as the first step in testing people suspected of having Lyme disease. Positive results must be confirmed with a Western blot test done by a laboratory. Two-stage testing is recommended by the Centers for Disease Control.

Lyme disease is a bacterial infection spread to humans primarily by tick bite. It is the most common insect-borne infectious disease in North America and is a significant public health concern. The infectious agent in the disease is the spirochete *Borrelia burgdorferi*.

Lyme disease may have many different manifestations. It starts with a large, red rash at the site of the tick bite. Then flu-like symptoms may set in. It may affect the nervous system, and in later stage, may be manifested by persistent arthritis.

Diagnosing Lyme disease can be challenging because the symptoms of flu, fatigue and joint pain are similar to those of a number of other conditions. (DJ)

## Lyme Disease and Tick Management

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Lyme disease is caused by a bacteria that is carried and transmitted through bites from several species of ticks. This disease was first recognized in 1976 and has now occurred in 47 states, including Nebraska. By 1993, Nebraska health officials reported 35 human cases: 11 of these cases were confirmed as having been contracted in Lancaster County.

Early signs of the disease include: a red rash which expands in concentric circles outward from the tick bite producing a "bull's-eye" effect. Later, flu-like symptoms occur which include headache, fever, chills, lethargy, and joint and muscle pain. In advanced untreated cases, there may be arthritis-like symptoms in the knees and shoulders and cardiac abnormalities. In most cases, antibiotics have shown to be an effective treatment of this disease, especially in early stages of the disease. There is no vaccine presently available for humans.

Lyme disease can also infect dogs, horses and cattle. In dogs, Lyme disease can cause fever, joint swelling, pain, arthritis, and lameness. Infected dogs may also exhibit a loss of appetite, depression and lethargy. This disease is rarely fatal in dogs, but it can be debilitating and antibiotic treatments can be long and expensive. A vaccine against Lyme disease for dogs is available from a veterinarian and is an initial series of two shots,

followed by a yearly booster shot.

The most common carriers of Lyme disease are the deer tick and the western black-legged tick, neither of which are found in Nebraska. We do not know for sure what tick is vectoring Lyme disease in Nebraska. Based on circumstantial evidence, it is believed that immature stages of lone star ticks are responsible for most of the cases of Lyme disease in Nebraska. The lone star tick is found primarily in the southeastern part of Nebraska, and this geographical region has the greatest numbers of Lyme disease cases and the greatest risk of contracting the disease. In addition, the white-tailed deer is a host for adult lone star ticks in the fall, and high populations of deer in southeast Nebraska may related to increases in tick populations in that area.

**Exposure to ticks can be reduced by employing the following practices:**

**1. Cultural.** Keep grassy and weedy areas trimmed to reduce harborage for tick hosts. Rodents are the reservoir hosts.

**2. Avoidance.** Whenever possible, stay out of tick-infested areas, grassy pastures, prairies, and wooded areas. Restrict movement of your dog.

**3. Proper Clothing.** When entering tick-infested areas, wear long-sleeved shirts and long trousers with tight-fitting cuffs. Wear light-colored clothing. Ticks are easier to see on a light background.



Lone Star tick, adult female

PHOTO: UNL Entomology Dept.

**4. Repellents.** Use an insect repellent containing the active ingredient diethyl toluamide (DEET). Apply to clothing and areas of exposed skin such as hands, wrists, ankles and neck. Protect dogs with flea and tick collars. Be sure to read and follow label directions.

**5. Inspection and Removal.** Inspection and removal of ticks reduces the risk of Lyme disease transmission. After crawling on a potential host, a tick may take up to a day to attach and feed, so you may be able to remove a tick before it has attached. In addition, the risk of disease transmission is related to the length of feeding so attached ticks should be removed promptly. Ticks tend to concentrate on the head, shoulders, neck and in ear canals. Remove embedded ticks with forceps, by gripping the tick carefully at the point of attachment and maintaining a firm pressure until the tick releases its grip. Care should be taken when removing a tick from pets or humans to insure that the entire tick is completely removed from the skin (the head often breaks off). After removal, wash the wound with soap and water

see TICK MANAGEMENT on p. 11