MOUNTRAIL COUNTY SOUTH COMPLEX
8103 61st St NW ; PO Box 40 Stanley, ND 58784

MOUNTRAIL COUNTY
AGRICULTURAL AGENCY & WEED CONTROL
Proudly Serving the People of Mountrail County Since 1909

Monitoring the Wind

Measure wind speed and monitor wind direction in the field before starting to spray. Continue monitoring throughout the application. Don't spray unless wind speed and direction favor on-target application.

It's also important to watch for temperature inversions. A temperature inversion occurs when a layer of warm air covers a layer of cooler air, effectively putting a lid on the surface-level air that prevents it from rising and mixing normally into the upper atmosphere. Gases trapped near the surface can't mix and dissipate, so they hover near the ground and often drift sideways.

Very low winds (0 to 3 mph) and temperatures close to the overnight low favor the formation of a temperature inversion. Do not apply any pesticides during these conditions.

The Nitrogen Balancing Act

Nitrogen deficiency negatively affects all plant functions and results in poor growth and fruiting. This deficiency can often be detected via the pale green or yellow-colored leaves due to the lack of nitrogen's impact on chlorophyll production.

Nitrogen levels that are too high also negatively affect the chemical balance of a plant. When there is an oversupply of nitrogen, the plant's response is to divert energy, carbohydrates, water, and minerals to metabolize it, thereby leading to weak plants, delayed fruiting, uneven ripening, and trace element deficiencies.

When it comes to nitrogen, growers face a balancing act – with real economic consequences. The quality of soil affects how well nutrients and water are retained. Nitrogen can quickly dissolve in water, and, as water drains, it may take the nitrogen along with it. This leaching of nitrogen can have
severe environmental effects, such as eutrophication, which is an accumulation of nutrients in a body of water, frequently caused by run-off, which results in a thick growth of algae and other organisms and a depletion of oxygen in the water.

With the propensity of nitrogen to run off, thereby polluting the air, water, and land in the process, smart nitrogen management can help reduce these threats and positively contribute to a grower's bottom line. Nitrogen fertilizers can be expensive and wasteful. Nitrogen loss means more pollution, lower yields, and higher costs to growers.

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The Difference Between Drift & Volatilization

Getting the most out of an herbicide application not only includes maximizing efficacy, but also minimizing damage caused by herbicides. Being aware of what can go wrong and how to avoid it can lead to effective, on-target herbicide applications and help growers have a successful growing season – without the distress and loss caused by applications gone awry.
Two threats to herbicide applications are drift and volatilization. While they may seem similar, they are quite unique and require different attention to ensure that neither occur.

Drift

Drift occurs during the herbicide application. It is the unintentional, off-target application of herbicides. This can lead to damage of surrounding crops as well as an ineffective herbicide application.

There are several factors that can lead to herbicide drift, including:

- Severe Temperatures: Ideal temperatures for herbicide-use range from 65 degrees F to 85 degrees F.
- High Wind Speeds: Herbicide labels specify optimal wind conditions for application. If a grower goes off-label, their risk of drift increases.
- Small Droplet Size: Smaller droplets are more likely to be carried away by the wind than larger droplets. Herbicide labels will also specify optimal droplet size to decrease drift.

Herbicides are most effective when applied in high humidity and with wind speeds of about 10 mph or less. Ensure that the application nozzles are on the correct setting to produce optimal droplet size to minimize drift. The position and height of the boom are also listed on the herbicide label. With the boom being closer to the crops, the distance the droplets can travel is reduced.

Volatilization

Volatilization is the movement of herbicide vapors through the air following an herbicide application. Similar to evaporation, volatilization occurs when the herbicide residue changes from a solid or liquid to a gas or vapor. Once vaporized, the vapors can be carried long distances by the wind, possibly damaging surrounding crops as well as causing an ineffective herbicide application.
The risk of volatilization increases when:

- Herbicides are applied to inert, non-absorbent surfaces like rocks or pavement,
- Temperatures are high,
- Humidity is severe and
- Herbicide formulations are potentially volatile.

Reducing the risk of volatilization is vital in order to have a successful herbicide application. Growers should be sure to avoid unfit conditions including high temperatures and humidity. Identifying if the target has a non-absorbent surface or if the herbicide formulations may be volatile can help growers make proactive decisions regarding tank mixers.

Herbicide specs are not one-size fits all. When it comes to avoiding drift and volatilization, herbicide labels are king. By following the label closely, growers will be able to maximize their herbicide applications and lower drift and volatilization.

CHS Agronomy

NOTICE TO LANDOWNERS

WEED SEASON IS FAST APPROACHING!

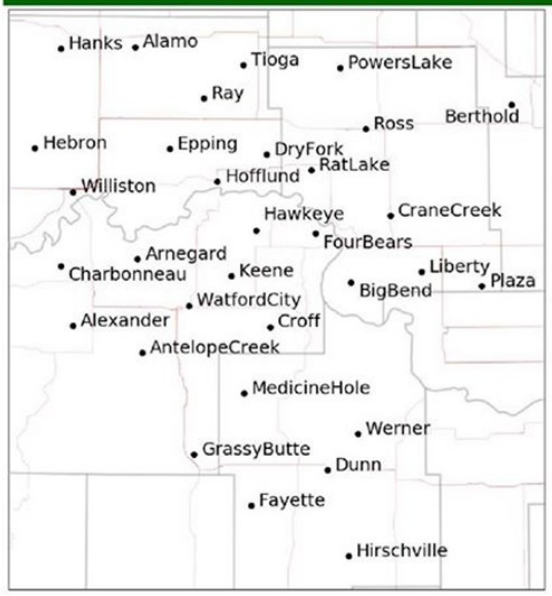
NOXIOUS WEED LAW STATES THAT LANDOWNERS ARE RESPONSIBLE FOR THE CONTROL OF NOXIOUS WEEDS ON THEIR LAND.

PLEASE NOTIFY THE MOUNTRAIL COUNTY WEED CONTROL DEPARTMENT AT 701-628-2835 FOR ASSISTANCE WITH CONTROLLING YOUR NOXIOUS WEEDS.

MOUNTRAIL COUNTY COST SHARE AVAILABLE!
FOR MORE INFORMATION CONTACT
JIM HENNESSY AT 701-629-1858

North Dakota Ag Weather Network (NDAWN)

NEW Weather Stations



TEMP

WIND

RAIN

& MORE!

Measured Every
5 Minutes

Current and Historical Weather Information is Available at
All Above Locations

Simply Visit: *station*.ndawn.org

For example, weather information from Hawkeye can be accessed at
hawkeye.ndawn.org

NDAWN Center
North Dakota Agricultural Weather Network

WESTERN DAKOTA ENERGY ASSOCIATION

Featured Weed: Narrowleaf Hawksbeard

A new weed on the scene in Montana is narrowleaf hawksbeard (Crepis tectorum).

by Jane Mangold Extension Invasive Plant Specialist, Montana State University

Narrowleaf hawksbeard is a taprooted, annual wildflower that is native to Eurasia. Plants look similar to dandelions with yellow flowers and a group of leaves clustered near the ground. Narrowleaf hawksbeard can grow up to three feet tall and has been nicknamed a “dandelion on steroids.” Leaves are 0.75 to 4 inches long with the wider portion towards the tip of the leaf. The leaf edges are coarsely-toothed to shallowly-lobed, and leaves at the base of the flowering stem have a stalk and soon wither upon flowering. Upper leaves are more linear and lack a stalk, and a milky sap is emitted when leaves are torn. In contrast to dandelion, narrowleaf hawksbeard plants have leaves on the flowering stem, and plants can become highly branched. In the rosette stage (i.e., before the flowering stem has bolted upward), it is much trickier to differentiate between narrowleaf hawksbeard and dandelion. For those with adventuresome palates, dandelion rosette leaves taste like something you’d want to include in your salad, while narrowleaf hawksbeard leaves are sharply bitter and distasteful (after the taste test, spit it out!).

PHOTO BY MICHAEL SHEPHARD, BUGWOOD.ORG

In addition to confusing this weed with dandelion, it could be confused with the noxious weed hawkweed (Hieracium spp.). Hawkweed basal leaves are not coarsely-toothed to shallowly-lobed, and leaves are typically densely hairy. Narrowleaf hawksbeard leaves are hairless to sparsely hairy. Narrowleaf hawksbeard was first reported in Montana in Flathead County in 1983. It has since been reported in Valley (1994), Granite (1997), Silver Bow (1997) and Daniels (2007) Counties. Regionally, the first report of narrowleaf hawksbeard was in Teton County, Wyoming, in 1948 along the Snake River. On a continental scale, narrowleaf hawksbeard is believed to have been introduced to eastern North America prior to 1890. In addition to narrowleaf, eight other hawksbeard (Crepis) species occur in Montana, all of which are native. Narrowleaf hawksbeard has become especially problematic in no-till croplands, idled croplands seeded with grasses, and hay fields in northeastern Montana. It can also be found along railroads and roadsides and in disturbed open areas. Narrowleaf hawksbeard is often a contaminant in alfalfa seed because the seeds from these two species are difficult to separate. Narrowleaf hawksbeard plants produce from 3,000 to 50,000 seeds per plant, and reproduction occurs through seeds only (i.e., no vegetative reproduction). When the plants have gone to seed, they have white fluffy heads of seed where the flowers used to be. Seeds are dark purple to brown and, like dandelion seeds, are dispersed by the wind. Seeds are also spread in hay, on machinery, and inadvertently in contaminated seed.

Once established, narrowleaf hawksbeard may displace native plants in certain habitats, and it can compete with hay crops for valuable soil moisture.

Narrowleaf hawksbeard is not a state-listed noxious weed in Montana, but it is increasingly problematic across Montana in croplands and rangelands. Hand-pulling is the best recommendation for small infestations. Despite its high dispersal and colonizing abilities, research conducted in Saskatchewan and Minnesota indicates that narrowleaf hawksbeard is a weak competitor. Therefore, cultural and preventive management practices are important, such as maintaining competitive vegetation, minimizing disturbance, and detecting infestations when they are small. Be especially cautious when importing hay from southern Canada, where this plant has been problematic for years. Mowing of non-crop areas before seed set can help minimize the spread of this species. Narrowleaf hawksbeard can be difficult to control with herbicides, and more research is needed. Unpublished data from Alaska indicates that metsulfuron-methyl products (e.g., Ally or Escort herbicides) applied at the seedling stage provide effective control. Anecdotal evidence from landowners in northeastern Montana suggests 2,4-D herbicide applied at 16 to 32 ounces of product per acre in the fall to basal rosettes works better than other products and timings. Remember that while a high rate of 2,4-D can help control narrowleaf hawksbeard, it can also harm crops such as peas, lentils, canola and flax, especially if applied in the spring.

Once narrowleaf hawksbeard plants have bolted, herbicides are much less effective. Landowners in northeastern Montana also report that products that work well for dandelion typically work well for this plant, but glyphosate (e.g., Roundup herbicide) alone is not effective. Glyphosate temporarily stunts narrowleaf hawksbeard plants, but they continue to grow and produce many more flower stems. Montana State University (MSU) researchers have experiments in progress to identify the most effective herbicides, rates, and timings for application. Look for results about these experiments in future MSU Extension publications. Author's Note: Thank you to Shelley Mills (Valley County Extension Agent), Bobbie Roos (Daniels County Extension Agent) and Brian Fuhrman (landowner, Valley County) for contributing photos of narrowleaf hawksbeard and sharing their knowledge and experience with this plant. Check out the publication from the Alaska Natural Heritage Program at the University of AlaskaAnchorage for more information about narrowleaf hawksbeard (http://aknhp.uaa.alaska.edu/wpcontent/uploads/2013/01/ Crepis_tectorum_BIO_CRTE3.pdf). □

PHOTOS BY BOBBY ROOS AND RANDALL PROSTAK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