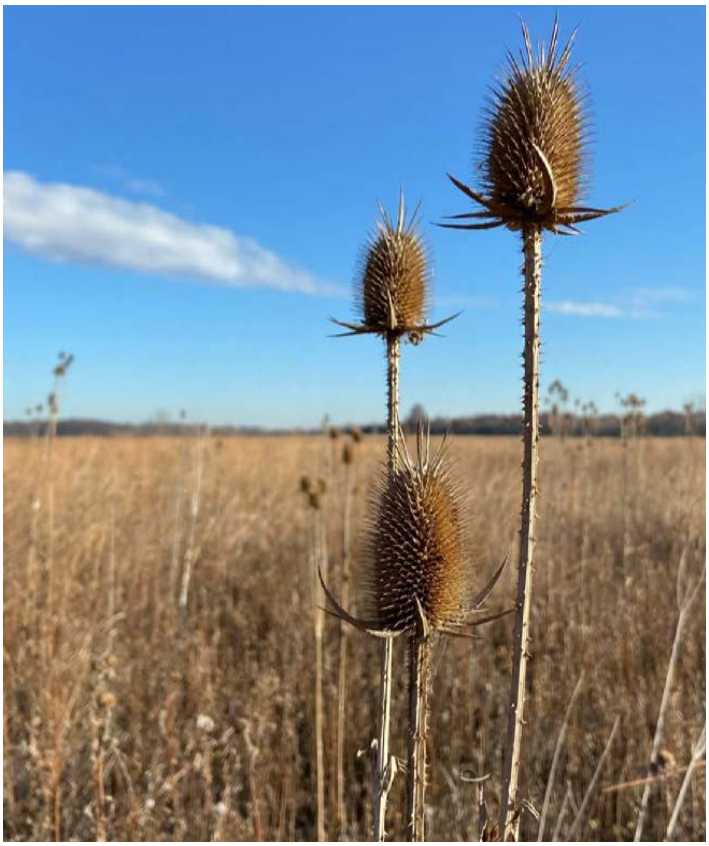
TEASEL CONTROL (COMMON AND CUT-LEAVED)

PURDUE UNIVERSITY
Extension

FNR-649-W



Common and **cut-leaved teasel** (*Dipsacus spp.*) are invasive species that invade open areas, including prairies, savannas, sedge meadows, roadsides, and conservation plantings. Teasels are an herbaceous biennial plant that grows as a basal rosette for at least one year. In year two or three of growth, the plants form a flowering stalk (or bolt) typically 3-7 feet tall. Because teasel is a biennial plant, infestations are often not discovered until plants are 2-3 years old when the tall flowering stalks form. In the first year of growth, the basal rosettes are flush at ground level and are often hidden by taller vegetation. To the untrained eye, teasels may resemble some thistle species, both native and invasive. Be sure to correctly identify the plant before making treatments.

Do's

- Prepare the site for herbicide application with prescribed fire or mowing.
- Combine various control practices.
- Consider mowing teasel flower stalks before seed production.
- Treat teasel with herbicide in the rosette stage during the spring or fall.

Don'ts

- Disk an area with teasel present.
- Mow teasel after it has produced seed.
- Use persistent herbicides such as clopyralid or aminopyralid if you plan to reseed the infested area with native grasses and forbs shortly after treatment.

Plant Facts

- Herbaceous biennial broadleaf, 3-7 feet tall
- Rosettes will over winter, typically less than 1 foot tall
- Growing period: April-Aug, year-round for rosettes
- Flowering period: Jun-Oct (depending on location); oval-shaped white or purple flower
- Seed period: Aug-Sep

Control Options

With teasel being a biennial plant, control efforts will take at least two years and possibly longer, depending on the amount of teasel seed in the seed bank. Efforts should be made to prevent teasel from producing seeds so that no new seeds are added to the seed bank. Chemical methods are often the most effective, but many herbicides may also impact native forb species in the treatment areas.

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Mowing

Timing a mowing event to suppress teasels during the flowering stage is critical for limiting seed production. Mowing needs to take place after flowering but before seed production, which typically happens in mid-summer but may occur throughout the flowering period. After mowing, plants often resprout but will produce little viable seed. Mowing will facilitate the spread of seed if completed after seed production. Typically, mowers cannot mow low enough to harm or control first-year rosettes. While mowing may reduce mature plants and seed production, it is not considered a long-term control option. Mowing is a tool to prepare a site for herbicide applications, as it can help expose the rosettes, reduce seed production, and reduce the height of mature plants.

Prescribed Fire

Spring prescribed fires, especially late spring fires (Apr-May), can help reduce actively growing teasel provided there is adequate vegetation to carry the fire. Teasel will often be among the first plants to 'green up' after a fire, exposing the rosettes and making them easier to see for targeted herbicide applications. However, prescribed fire alone is not enough for control.

Herbicide

Most broadleaf herbicides effectively control teasel, particularly in the rosette stage. Certain selective herbicides can effectively control teasel while minimizing harm to some native plants. For example, many native grasses and some native forbs are tolerant of imazapic (refer to the label for specific species). In contrast, only native grasses tolerate triclopyr – a broadleaf-selective herbicide. Herbicides should be applied to rosettes in the fall or the spring. Spraying mature plants with herbicide before seed production is possible but challenging, given their height. Spot spraying small areas is ideal. Broadcasting herbicide on larger infestations may be necessary. Consider mowing or using prescribed fire with herbicide treatments to better expose rosettes.

Disking

Disking can control teasel by uprooting plants that have already emerged. However, disking also promotes the germination of teasel seeds in the seed bank, potentially worsening the problem. Disking should be avoided in areas where teasel is present.

Acknowledgments

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Additional Resources

Common and Cut-leaved Teasel Control. Missouri Department of Conservation. https://mdc.mo.gov/trees-plants/invasive-plants/common-cut-leaved-teasel-control

Panke, B., R. deRegnier, and M. Renz. 2012. Teasels. Management of Invasive Species in Wisconsin. University of Wisconsin Extension. A3924-14.

Teasel Poster. Illinois Department of Transportation. https://idot.illinois.gov/content/dam/soi/en/web/idot/documents/transportation-system/pamphlets---brochures/environment/teasel-poster.pdf

Conservation Program Disclaimer: *The management practices in this publication may conflict with cost-share program (e.g., CRP) rules and regulations (e.g., primary nesting season). If you are enrolled in a conservation program, please consult with an agency representative before utilizing a prescribed practice.*

Control Scenarios

Below are only a few examples of common scenarios in the field. Many other scenarios exist. For your specific conditions, please consult a biologist.

Native grassland with high-forb diversity and/or low teasel infestation

OPTION 1.	OPTION 2.
Year 1 ▪ Use prescribed fire during the dormant season (Nov-Mar). ▪ Spot treat rosettes with a recommended herbicide (consider more selective herbicides such as imazapic or triclopyr). ▪ Monitor the site throughout the growing season. Spot mow any teasel flower stalks before they set seed. **Year 2** ▪ Routinely monitor and spot-spray any rosettes that are found. ▪ Spot mow any teasel flower stalks before they set seed. **Year 3+** ▪ Utilize prescribed fire as necessary. ▪ Spot spray any rosettes that are found. ▪ Spot mow any teasel flower stalks before they set seed.	**Year 1** ▪ Spot mow mature plants after flowering but before they set seed (summer). ▪ Spot spray rosettes and mature teasel with a recommended herbicide (consider more selective herbicides such as imazapic or triclopyr). ▪ Monitor and spot spray rosettes as needed (fall). **Year 2** ▪ Routinely monitor the site. ▪ Spot spray rosettes in the spring and the fall. ▪ Spot mow any teasel flower stalks before they set seed. **Year 3+** ▪ Routinely monitor the site. ▪ Spot spray rosettes in the spring and the fall. ▪ Spot mow any teasel flower stalks before they set seed.

Native grassland with low forb diversity and/or high teasel infestation

OPTION 1.
Year 1 ▪ Mowing or dormant/early growing season (Nov-Apr) prescribed fire to prepare the site for herbicide treatment. ▪ Spot or broadcast apply (depending on the level of infestation) a recommended herbicide as soon as rosettes begin to actively grow and before other vegetation is too tall (Apr-Jun). Consider more selective herbicides such as imazapic or triclopyr. ▪ Spot spray any rosettes that remain in the fall. **Year 2** ▪ If needed, repeat the steps from Year 1. ▪ If rosettes are low in density, follow the steps for low infestations. ▪ Continue to monitor the site for new rosettes. **Year 3+** ▪ Use prescribed fire as necessary. ▪ Routinely monitor and spot-spray any rosettes that appear.

Control Timeline

CONTROL OPTION	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mowing												
Prescribed Fire												
Herbicide												

Control[1]

Suppression[2]

Site Preparation[3]

[1] Control = provides effective control of common and cut-leaved teasel

[2] Suppression = reduces adult seed production but is not an effective long-term control method

[3] Site preparation = used before herbicide application to improve herbicide efficiency

Herbicide Recommendations

Active Ingredient	Trade Names[1]	Application rates[2]	Application Timing	Adjuvant Information[3]	Additional Information
2,4-D (amine or ester)	2,4-D Amine, 2,4-D LV 6, Pasture Pro	**Broadcast:** 2-4 pt/ac (2,4-D amine) **Spot Spray:** equivalent to broadcast rate	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Adjuvants are not needed when using ester formulations. Adding a COC at 1% v/v can be helpful if amine formulations are used.	Broadleaf selective herbicide. It will kill or damage other broadleaf plants (forbs) it contacts.
2,4-D + triclopyr	Crossbow	**Broadcast:** 2-4 qt/ac **Spot Spray:** 1-1.5% solution by volume	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Adjuvants are not needed when using ester formulations. Adding a COC at 1% v/v can be helpful if amine formulations are used.	Broadleaf selective herbicide. It will kill or damage other broadleaf plants (forbs) it contacts.
aminopyralid	Milestone	**Broadcast:** 4-7 oz/ac **Spot Spray:** equivalent to broadcast rate	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Adding NIS (0.25-0.5% v/v) is recommended to improve efficacy on tough-to-control weeds.	Broad-spectrum selective herbicide. Many native grasses are tolerant to application. Does have soil residual activity.
aminopyralid + 2,4-D	GrazonNext HL	**Broadcast:** 1.5-2.1 pt/ac **Spot Spray:** 0.7-5.1 oz/ 3 gallons of water (depending on gallons per acre of solution applied)	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Adding NIS (0.25-0.5% v/v) is recommended to improve efficacy on tough-to-control weeds.	Broad-spectrum selective herbicide. It can provide control of other problematic weeds. Does have soil residual activity.
aminopyralid + florpyrauxi-fen-benzyl	DuraCor	**Broadcast:** 12 oz/ac **Spot Spray:** 0.4-1.8 oz per 3 gallons of water (depending on gallons per acre of solution applied)	Mid-April to late-May or September-October (variable statewide) when rosettes are present	The addition of a high-quality MSO at 1% v/v or NIS (of at least 80% active ingredient) at 0.25 to 0.5% v/v is allowed to enhance herbicide activity under adverse environmental conditions or when weeds are heavily pubescent or more mature.	Broad-spectrum selective herbicide. It will kill or damage most forbs it contacts. Does have soil residual activity.
aminopyralid + metsulfuron methyl	Chaparral, Opensight	**Broadcast:** 2-3 oz/ac (Opensight) **Spot Spray:** equivalent to broadcast rate	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Apply with COC/MSO (1% v/v) or NIS (0.25%). AMS (2 lb/A) or UAN (2 qts/A) can also be added for tough weeds.	Broad-spectrum selective herbicide. Many established native grasses are tolerant. Does have soil residual activity.
chlorsulfuron	Telar XP	**Broadcast:** 1-2.6 oz/ac **Spot Spray:** 0.04 oz/gal	Mid-April to late May or September-October (variable statewide) when rosettes are present or actively growing	To improve postemergence weed control, a high-quality spray adjuvant should be added at the manufacturer's specified use rate. Do not use LI-700 or any acidifying spray adjuvants with TELAR®XP.	Broad-spectrum selective herbicide. Many native grasses are tolerant at specific application rates. Does have soil residual activity.
clopyralid	Transline, Stinger	**Broadcast:** 8-21 oz/ac (Stinger) **Spot Spray:** 1/5-1/2 oz per gallon of water (Stinger)	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Transline - To control broadleaf weeds with broadcast applications, use a NIS at 1 to 2 qt per 100 gallons of spray solution. Stinger - Adding adjuvants is not usually needed when applying Stinger, but a surfactant can increase the effectiveness. However, it may also make non-target plants more susceptible to injury.	Broadleaf selective herbicide. Does have soil residual activity.
glyphosate	Roundup, Gly Star Plus, and others	**Broadcast**: 2-4 qt/ac (1.5-3 lb a.e./ac) **Spot Spray:** 1.5-2% solution by volume	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Add AMS (2-3 lbs/A). Add NIS to improve control of tough-to-control species if the formulation does not contain a spray adjuvant.	Broad-spectrum herbicide. It will kill or damage most plants (forbs or grasses) it contacts. Not soil active.
imazapic	Plateau, Panoramic 2SL	**Broadcast:** 8-12 oz/ac (Plateau) **Spot Spray:** 0.25-1.5%	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Apply with NIS (1 qt./100 gal.). Plateau can be more effective when applied with MSO (1.5 to 2 pts./A) instead of NIS but will be more injurious to the existing plants. The addition of AMS may improve control of certain weeds but will also increase the risk of injury to non-target plants	Select native grasses and forbs that are tolerant of imazapic at specific rates (see label).
imazapyr	Arsenal, Arsenal AC, Polaris, Polaris AC	**Broadcast:** 48-64 oz/ac (Arsenal) **Spot Spray:** 0.5-1% solution by volume (Arsenal)	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Apply with NIS (1 qt./100 gal.).	Imazapyr is soil active and may damage desirable overstory trees by translocation throughout the root system. Do not spray imazapyr within the drip line of desirable trees.
metsulfuron methyl	Escort XP	**Broadcast:** 0.75-1 oz/ac **Spot Spray:** 0.04 oz/gal	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Apply with NIS at a minimum rate (concentration) of 0.25% v/v (1qt/100 gal of spray solution)	Broad-spectrum selective herbicide. Many native grasses are tolerant to application. Does have soil residual activity.
triclopyr (amine and choline) formulation)	Element 3A, Garlon 3A, Remedy Ultra, Triclopyr 3A, Vastlan	**Broadcast:** 16-32 ounces/ac (Triclopyr 3A) **Spot Spray:** 1-2% solution by volume (Triclopyr 3A)	Mid-April to late-May or September-October (variable statewide) when rosettes are present	Add an NIS to all spray mixtures.	Broadleaf selective. It can also be used as a cut-stump treatment after cutting the teasel bolts.

[1] Product names are provided as examples and for educational purposes. Several other products with the same active ingredient may exist. Listing of the products does not constitute an endorsement.

[2] The rates for these applications are provided for one specific product as an example. Treatments and recommended application rates are based on the herbicide labels, relevant research, and the publication Management of Invasive Plants in Wisconsin: Teasels from the University of Wisconsin Cooperative Extension. View the herbicide labels to verify rates before use.

[3] Spray adjuvants, including surfactants, are supplemental products added to a spray mixture to improve the performance of the chemical. Please refer to the product labels for more information. AMS = ammonium sulfate, COC = Crop Oil Concentrate, MSO = Methylated Seed Oil, NIS = Nonionic Surfactant, v/v = volume/volume

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