



Black Medic (*Medicago lupulina*)

Overview

Black medic (*Medicago lupulina*) is a summer-annual broadleaf weed commonly found in Iowa. Due to its similar appearance to members of the clover family (*Trifolium* spp.), and yellow woodsorrel (*Oxalis stricta*), this weed can be easily misidentified. In Iowa, black medic is known to be problematic on both high- and low-maintenance turf and is tolerant of a wide range of mowing heights. Black medic also is known to be tolerant of poor soil conditions, and often becomes established in areas of compacted soils, such as near a sidewalk or road surface. Like clover, black medic is a legume; therefore, it is able to capture its own nitrogen from the atmosphere and does not require fertilization in order to persist in an area. Due to this ability to fix nitrogen, black medic can begin to take over in areas where nitrogen is not routinely applied or has not been applied in recent years. In these situations, black medic may be successfully controlled simply by fertilizing with a nitrogen-containing fertilizer, or alleviating soil compaction. In extreme cases, chemical control may be necessary. Following proper cultural or chemical practices can make black medic control extremely successful. When utilizing chemical control on black medic, it is important to take note of timing within the season. Due to its summer annual life cycle in Iowa, black medic may die out naturally, as the growing season ends during the fall.



Identification of Black Medic

Black medic is one of the trifoliate (three-leaf) broadleaf weed species that commonly invade Iowa turfgrasses. Being a trifoliate, black medic can be identified through the observation of three oblong-shaped leaflets attached to the end of each stem. The leaflets often are described as being equally long as these are wide. Upon further inspection, the petiole of the top center leaflet is slightly longer than the two lateral leaves, and this unique trait is how black medic can be distinguished from other trifoliate. The leaflets have a small serration/toothed margin along the edges. The plant itself has a prostrate growth habit, with minimal spreading activity. While black medic does produce stems that grow outward at the ground level, these stems do not produce roots as they establish. Instead, black medic grows from a central taproot system. During the spring through fall periods, black medic also produces compressed clusters of small yellow flowers, and once matured, the flowers form tightly coiled black seedpods, hence the name “black medic.”

Black Medic Control Cultural Practices

The best defense against weeds is the promotion of a dense, vigorous stand of turfgrass, which will not allow weed seeds to germinate, and where weeds will struggle to become established. Cultural practices that encourage healthy grass growth also often discourage the growth of black medic and many other weeds. The use of core aeration can be beneficial in black medic control, especially in situations where turfgrass is struggling to grow due to soil compaction, or where core aeration has not been used in the last several years. Black medic also can be an indication of an area lacking nitrogen fertilization. A soil test can be

used to test for other nutrient deficiencies, but not nitrogen. It is recommended that Iowa lawns receive between 2.75 to 4 pounds of nitrogen per 1,000 square feet per year. For more information on timing of fertilization, see Iowa State University Extension and Outreach Publication HORT 3093: [Turfgrass Management Calendar: Kentucky Bluegrass Lawns](https://store.extension.iastate.edu/product/4383) (store.extension.iastate.edu/product/4383). While these practices will help minimize the pressure from black medic, these will not provide complete control. Where complete eradication is desired, herbicide application is required.

Natural Options

Corn Gluten Meal

Repeated applications over the course of several years of corn gluten meal have been shown to be effective at the control of many annual and broadleaf weeds. Corn gluten meal must contain 60% protein material from wet milling. Application rates of corn gluten meal at a rate of 10 to 20 pounds of product per 1,000 square feet in both the spring and fall are recommended.

Chemical Options

Preemergence Options

Repeated applications over the course of several years of corn gluten meal have been shown to be effective at the control of many annual and broadleaf weeds. Corn gluten meal must contain 60% protein material from wet milling. Application rates of corn gluten meal at a rate of 10 to 20 pounds of product per 1,000 square feet in both the spring and fall are recommended.

Postemergence Options

Post emergence control of black medic in established turfgrass is best achieved using products that contain:

- Three or more phenoxy (or phenoxy-type) compounds: such as Trimec (2,4-D, dicamba, MCPP), Cool Power ester formulation (MCPA, triclopyr, and dicamba), and Horsepower (MCPA, triclopyr, and dicamba).
- Effective control also can be achieved using herbicides containing these active ingredients:
 - o Triclopyr – such as TZONE-SE, Turflon Ester
 - o Aminocyclophyrachlor
 - o Fluroxypyr – such as Spotlight, GameOn, Escalade 2
 - o Quinclorac – such as Drive XLR8, Q4 Plus
- These herbicides should not be used in sensitive turfgrass species such as creeping bentgrass. In those situations, mechanical control may be a better option; otherwise Trimec Bentgrass Formulation (2,4-D and dicamba) can be used.

Regardless of the method chosen for black medic control, repeat applications may be necessary for complete eradication.



Take-Home Message

Long-term black medic control is best achieved through sound cultural practices that promote a dense, vigorous stand of turfgrass in combination with timely herbicide applications. There are multiple herbicides that exist for controlling black medic in turfgrass. Herbicides listed in this publication have provided good to excellent control in research trials conducted at Iowa State University; however, other herbicides also may have activity on this weed.

More Information

The following publications are available at the [Iowa State University Extension Store](https://store.extension.iastate.edu) (store.extension.iastate.edu):

- PM 930: [Weed Control in Home Lawns](https://store.extension.iastate.edu/product/4242)
store.extension.iastate.edu/product/4242
- HORT 3066: [Turfgrass Weed Control for Professionals](https://store.extension.iastate.edu/product/14892)
store.extension.iastate.edu/product/14892
- PM 1057: [Lawn Fertilization](https://store.extension.iastate.edu/product/4378)
store.extension.iastate.edu/product/4378
- PM 1447D: [Responsible Phosphorus Management Practices for Lawns](https://store.extension.iastate.edu/product/4883)
store.extension.iastate.edu/product/4883
- HORT 3093: [Turfgrass Management Calendar: Kentucky Bluegrass Lawns](https://store.extension.iastate.edu/product/4383)
store.extension.iastate.edu/product/4383
- HORT 3021: [Fall Tips to Ensure a Healthy Green Yard in the Spring](https://store.extension.iastate.edu/product/14284)
store.extension.iastate.edu/product/14284
- HORT 3023: [Selecting a Grass Species for Iowa Lawns](https://store.extension.iastate.edu/product/5083)
store.extension.iastate.edu/product/5083

When applying herbicide, always take time to read the label and follow the directions for application listed on the package. Mention of trade names or commercial products in this publication is solely for the purpose of providing specific information and does not imply endorsement by Iowa State.

Written by Adam Thoms, assistant professor in horticulture and extension turfgrass specialist and Alex J. Lindsey, postdoc research associate in horticulture at Iowa State University

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