

Biology and Management of Black Medic (*Medicago lupulina*) in Ornamental Crop Production and Landscape Planting Beds¹

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Introduction

Black medic is an annual or short-lived perennial commonly found in lawns, landscapes, containers, and orchards throughout Florida. This publication is intended for green industry professionals, Extension agents, homeowners, and others to provide guidance on the identification and management of black medic in and around ornamental plants.

Species Description

Class

Dicotyledon

Family

Fabiaceae (Bean family)

Other Common Names

Black clover, black medick, hop clover, English Trefoil, yellow trefoil

Life Span

Annual or short-lived perennial

Habitat

Black medic is usually found in disturbed areas, lawns, fields, pastures, and landscape beds, as well as along roadsides. The plant thrives in nutrient-poor, dry soils and grows best in areas with full to partial sun. It is sensitive to salinity and cannot withstand shade. The plant spreads easily by seed and can form large colonies in containers or landscape beds if left unmanaged. It is difficult to control due to its prostrate growth patterns and deep tap root system.

Distribution

Black medic is native to North Africa, Europe, and parts of tropical Asia, including India, Nepal, China, Korea, and Taiwan (USDA-ARS National Germplasm Plant System 2025). It was introduced to North America as a soil improver and forage crop. Black medic thrives in a wide range of soil types but is commonly found in dry, sunny areas such as turf, gardens, and fields. Its presence can indicate low soil nitrogen levels.

Growth Habit

Black medic exhibits a prostrate growth habit (low growing along the ground) with a deep taproot system (Figure 1). It branches vigorously at the base, with stems that spread out flat along the ground, reaching a height of approximately 6 to 10 inches (15 to 25 cm).

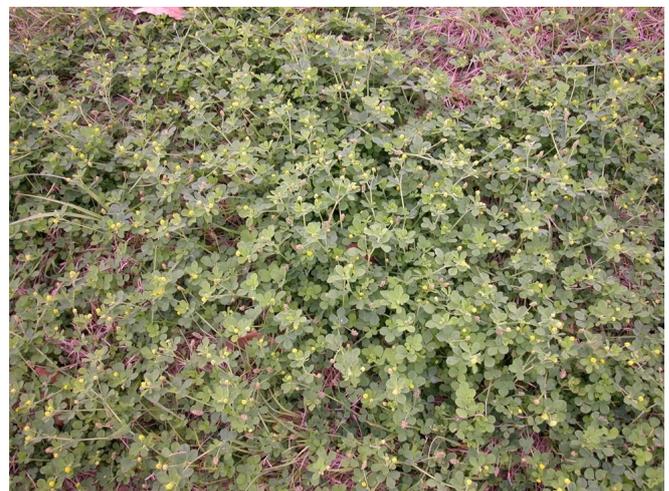


Figure 1. Black medic prostrate growth habit.

Credit: Annette Chandler, UF/IFAS

Seedling

The seedling of black medic has dark-green elongated cotyledons and a rounded first leaf. The seedlings resemble other clovers. The young plants have leaves with three leaflets and hairy petioles.

Shoot

Mature plants have hairy stems that square and emerge from the base of the plant. The foliage of the plant consists of three dark green oval leaflets (Figure 2). The plants range from 6 to 30 inches in length, with stems mostly flat on the ground at the beginning of growth and later erecting. Each leaflet is about 1/2 to 3/4 inches long with a slightly longer center leaflet. The leaflets are toothed at the tip and hairy with parallel veins.



Figure 2. Black medic leaves and shoot.

Credit: Karan A. Rawlins, University of Georgia, Bugwood.org

Roots

Black medic develops a deep taproot system, where roots can reach depths of 3 to 5 feet. As a legume, its roots form nodules that house nitrogen-fixing bacteria, contributing to soil fertility.

Inflorescence

The flowers are small, round, and bright yellow, measuring about 1/4 to 1/2 inches in size. They develop on short stalks emerging from the leaf axils. Each compact inflorescence contains a dense cluster of 10 to 50 tiny flowers (Figure 3). In Florida, blooming typically occurs from March through July but will vary depending upon the location in Florida and weather conditions. The flowers are frequently visited by a variety of bee species, making black medic a valuable resource for pollinators.



Figure 3. Black medic flowers.

Credit: Annette Chandler, UF/IFAS

Fruits and Seeds

The fruit are small kidney-shaped pods arranged in clusters (Figure 4). Each pod measures approximately 1.5 to 3 mm in diameter, hardens as it matures, and turns black when fully ripe (Figure 5). Inside, each pod contains a single amber-colored seed. The seeds are small, 1 to 2.5 mm long, and round to oval.

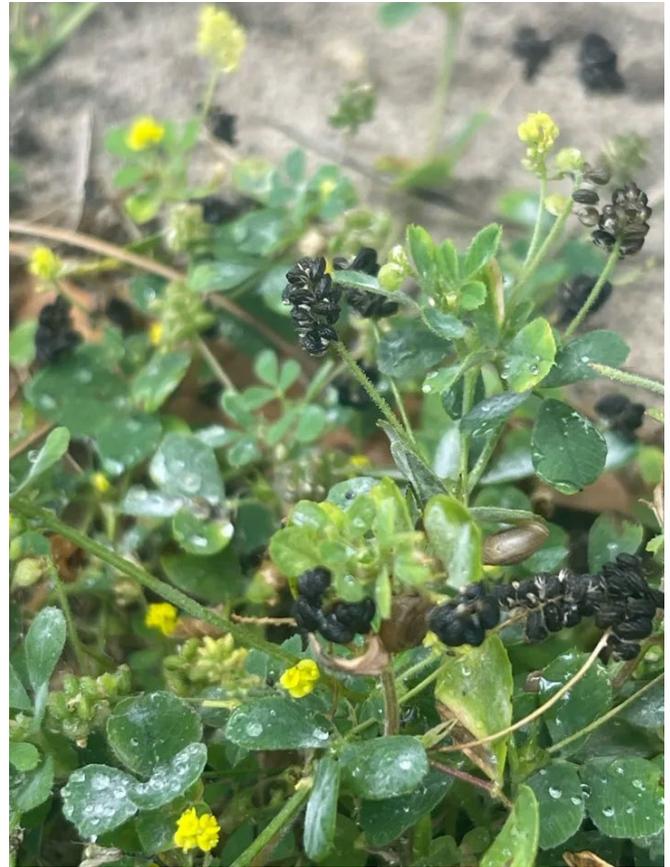


Figure 4. Black medic seed pods arranged in clusters.

Credit: Yuvraj Khamare, UF/IFAS



Figure 5. Black medic kidney-shaped seed pods.

Credit: Bruce Ackley, The Ohio State University, Bugwood.org

Similar Species

Black medic can be confused with other plants that have three leaflets and small yellow flowers. Some similar species consist of hop trefoil (*Trifolium campestre*), large hop trefoil (*Trifolium aureum*), lesser hop trefoil (*Trifolium dubium*), and yellow woodsorrel (*Oxalis stricta*).

Plant Biology

In Florida, black medic seedlings emerge in the late winter or early spring and begin flowering within six weeks. The flowers are hermaphroditic, and under favorable conditions, the plant can produce seeds within 9 to 10 weeks of growth. Black medic spreads by its seeds, which can be dispersed over great distances by birds and other grazing animals. The plant grows in a wide range of soil types with pH ranging from 4.8 to 7.8 (Turkington and Cavers 1979).

Management

Prevention and Cultural Control

The best way to prevent black medic is by maintaining healthy soil. Since black medic thrives in nitrogen-poor conditions, good nutrient management is essential. Once the plant establishes, it is important to prevent it from setting seed. Hand weeding is highly effective, especially when the soil is moist, as the roots are easy to pull. In non-crop areas such as walkways, driveways, and aisles, mowing before the plants flower can help prevent seed production. Black medic often favors compacted soils, so reducing soil compaction and improving aeration can aid in its control. Additionally, applying a thick layer of mulch (2 to 3 inches or more) where possible can significantly reduce its germination and growth since it is an annual species that spreads from seed dispersal.

Chemical Control

While little efficacy information exists, limited research data and anecdotal reports indicate that black medic is relatively easy to control with timely preemergence herbicide applications. Dithiopyr (Dimension and as a component of Fortress herbicide) includes black medic as being controlled on the label. Additionally, flumioxazin (Broadstar/SureGuard and as a component in Fuerte), isoxaben (Gallery, Gemini, and as a component in Snapshot), and indaziflam (Marengo for nursery

applications and Specticle for landscape applications) are labeled for control. Preemergence herbicide applications are most effective for black medic when applied prior to seedling emergence, typically late winter to early spring and again in the fall. In planting beds, non-selective herbicides such as glyphosate, glufosinate (Finale or Cheetah), diquat (Reward), pelargonic acid (Scythe), and many others are effective, but these herbicides should only be used as a directed application, avoiding contact with plant foliage. For only a small group of selected ornamentals, herbicides such as imazaquin (Scepter T&O) and clopyralid (Lontrel) can be applied as over-the-top applications for postemergence black medic control.

Before applying any pesticide, it is essential to read and follow all label instructions carefully. Accurate weed identification is also critical to ensure proper treatment. Herbicides should only be used on the sites and target species for which they are labeled. See further information on commonly used herbicides and how to use them safely and effectively in EDIS publication ENH1311, "[Florida Homeowner Herbicide Guide: Considerations, Applications, and Selection.](#)"

References

- Turkington, R., and P. B. Cavers. 1979. "The Biology of Canadian Weeds: 33. *Medicago lupulina* L." *Canadian Journal of Plant Science* 59 (1): 99–110. <https://doi.org/10.4141/cjps79-015>
- United States Department of Agriculture-Agricultural Research Services (USDA-ARS), National Plant Germplasm System. 2025. "Taxon: *Medicago lupulina* L." Germplasm Resources Information Network (GRIN Taxonomy). National Germplasm Resources Laboratory. Accessed April 10, 2025. <https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomydetail?id=23613>

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Mention of a commercial or herbicide brand name or chemical does not constitute a recommendation or warranty of the product by the authors or UF/IFAS, nor does it imply approval of the product to the exclusion of other products that may also be suitable.

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