

### Weed Common Name

White Clover

### Botanical Name (Scientific Name)

*Trifolium repens*

### Points to Consider

- White clover is a short-lived perennial that thrives in lawns, pastures, rights-of-way, and other marginal sites.
- Nitrogen-deprived lawns and overgrazed pastures are prime locations for this weed to establish.
- The most effective white clover control plan requires the use of multiple methods of control (prevention, mechanical, cultural, and chemical).



**Figure 1.** Leaves of white clover are composed of three leaflets. Occasionally, a leaf may be found that looks like a “4-leaf clover.” Courtesy of Ansel Oommen, Bugwood.org.

## Authors

**Justin Hatch**, Extension Educator,  
University of Idaho Extension,  
Caribou County

# Integrated Pest Management of White Clover

## Importance

White clover is often considered a nuisance in both lawns and pastures. In nitrogen-deficient lawns, it creates unsightly dark green patches that contrast sharply with the surrounding grass. Its creeping growth habit allows it to spread aggressively, often crowding out desirable turf species. In pastures, white clover is generally less desirable than other, more productive legume species. It is commonly found in grazed areas because it tolerates and survives overgrazing better than many other forage plants.

## Description, Biology, and Ecology

White clover is a short-lived perennial native to the Mediterranean region. It was introduced into the United States in the 1700s as a forage for livestock and is now commonly found across much of North America. It can be found in lawns, pastures, rights-of-way, and other marginal sites; thrives under cool, moist conditions; and adapts to a wide range of soil types.

The plant’s leaves are trifoliate, measuring approximately ¼–¾-inch long. Occasionally a leaf may be found that looks like a “four-leaf clover.” Leaflet edges are slightly serrated and have a small notch at the tip. Leaves have a light green/grey V- or U-shaped pattern running through the middle of its leaf (Figure 1).

White clover reproduces by stolons and by seed (Figure 2). As **stolons** (aboveground reproductive stems) elongate along a soil surface, the plant sends out roots at the nodes, allowing the plant to spread, forming large patches. Seed is produced in globe-shaped clusters of small, white flowers that are typically pinkish at the base (Figure 3). Each flower cluster may contain 20–40 individual flowers, each in turn containing a single seed.

White clover is an indicator plant — when grass around clover patches is darker green than the rest of the lawn/pasture, the lawn/pasture needs more nitrogen. As with other legumes, white clover forms symbiotic relationships with rhizobium bacteria that convert atmospheric nitrogen into plant-available nitrogen. This allows white clover to thrive in nitrogen-depleted soils. Although some people prefer to have clover in their lawn to reduce fertilizer

requirements, many do not like the rough, patchy appearance created by the white clover.

High percentages of white clover in pastures may be a sign of overgrazing. Its low-growth habit allows it to thrive under frequent grazing pressure, giving it a competitive advantage when taller, more productive forage legumes and grasses are grazed out. As these preferred species decline, white clover often increases in abundance, filling in the gaps and dominating the pasture.

## Management

### Primary Management Tactics

Having a healthy stand of competitive beneficial plants is the best weed preventor. First, adopt cultural management practices that maintain a healthy landscape. Limit areas of bare soil by maintaining a healthy lawn, covering areas between landscape plants with mulch, gravel, or other soil-covering products, and utilize efficient irrigation. Second, use mechanical or chemical methods to control weeds before they produce seed. The best weed management programs consistently use multiple methods of control.

### Prevention

- Apply mulch (3"–4" deep) or landscape fabric to landscaping to control seedlings.
- Reduce new seeds by controlling white clover before it produces seed.
- Limit the introduction of white clover by not transporting unknown plant material.

### Mechanical

- Remove young plants by hand-digging/pulling; however, this technique is not a realistic option once white clover is established.
- Raise mower blades to a height of 2½"–3" for most lawns. Mowing too short weakens the grass stand and allows more sunlight to reach weed seedlings.

### Cultural

- In lawns, apply ½ lb of nitrogen per 1000 square foot for each month of active grass growth. Distribute applications throughout the growing season.



**Figure 2.** White clover seedlings. Courtesy of Bruce Ackley, The Ohio State University, Bugwood.org.



**Figure 3.** White clover flower. Courtesy of David Cappaert, Bugwood.org.

- Deep, infrequent irrigation events encourage grass roots to grow deeper, providing access to an increased volume of soil, water, and nutrients, thus giving them a competitive advantage over white clover.
- Aerate compacted soil once a year (spring or fall). Turfgrass struggles to grow in compacted soil.
- Adjust sprinklers to prevent watering areas not intended for plant growth.
- In pastures, adopt grazing management practices that allow beneficial plants to fully recover before being grazed again.

## Chemical

- Always read and follow label directions. Ensure that white clover is listed as a weed that is controlled by the product you are using.
- Make certain that the product you choose is labeled for your intended use.
- Because many herbicides have significant soil activity or are volatile at higher temperatures, carefully apply herbicides in or near the root zone of nontarget plants, like trees, shrubs, and garden plants, or when temperatures exceed 85°F over the next seventy-two hours.
- For treatment of white clover, consider postemergent herbicides that contain multiple active ingredients, since they are often more effective than products with a single active ingredient. For recommendations of herbicides to use on turfgrass, see the [PNW Pest Management Handbook \(Chemical Control of Broadleaf Weeds in Turf\)](#). For recommendations for herbicides to use in the management of annual kochia, see the [PNW Pest Management Handbook \(Herbicides to Reduce Weed Problems\)](#).

## Further Reading

Abbey, T., and P. Landschoot. 2025. "Lawn and Turfgrass Weeds: White Clover." PennState Extension. <https://extension.psu.edu/lawn-and-turfgrass-weeds-white-clover>.

Hancock, D., and J. G. Andrae. 2016. "White Clover Establishment and Management Guide." Bulletin 1251. Athens, GA: University of Georgia Cooperative Extension. 10 p. <https://extension.uga.edu/publications/detail.html?number=B1251&title=White%20Clover%20Establishment%20and%20Management%20Guide>.

Turf Tips (Purdue Extension). 2020. "White Clover." Turfgrass Science. <https://turf.purdue.edu/white-clover/>.

United States Department of Agriculture-Natural Resources Conservation Service. 2002. "Plant Fact Sheet: White Clover." 2 p.

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### Caution: Read Pesticide Labels

Pesticide labels override other recommendations.

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ALWAYS read and follow the instructions printed on the pesticide label. The pesticide recommendations in this UI webpage do not substitute for instructions on the label. Pesticide laws and labels change frequently and may have changed since this publication was written. Some pesticides may have been withdrawn or had certain uses prohibited. Use pesticides with care. Do not use a pesticide unless the specific plant, animal, or other application site is specifically listed on the label. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

**Trade Names** — To simplify information, trade names have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

**Groundwater** — To protect groundwater, when there is a choice of pesticides, the applicator should use the product least likely to leach.