

## Clover

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*Trifolium repens* (white clover) *Trifolium pratense* (red clover) (Fabaceae)

**Fast Facts:** Acres in Washington: 800  
Number of Growers: 50  
Per Acre Value: \$144/ton  
Percent of U.S. Acreage: less than 1%

### Description Of crop:

Clover is a genus of about 300 species of plants in the pea family. It is a small, annual, biennial or short-lived herbaceous plant. Clover is palatable and nutritious for livestock and grows in a range of soils and climates. It is appropriate for either pasturage or green composting. It is an excellent soil improvement crop since it introduces nitrogen from the air, builds structure and fertility and stimulates biological activity in the soil. The leaves are trifoliate and the heads or dense spikes have small red, purple, white or yellow flowers. Several species are cultivated as fodder plants. The most widely cultivated clovers are the white and red clovers.

Red clover has a longer growing season than any other clovers in the U.S., with a wide adaptation and excellent seedling vigor. It grows freely and shoots up again after repeated mowing. It is an herbaceous short-lived perennial with a number of leafy stems rising from a crown. It has a dome shaped flower and a well developed tap root which is drought resistant. Red clover is cross pollinated and is usually grown with small grain crops such as oat or barley. It is commonly planted in the spring but can also be planted in August or September if a grower can irrigate.

White clover is a perennial with a prostrate growth habit, it doesn't develop upright stems; it spreads through stolons. It is used primarily as pasture often in combination with grasses such as tall fescue, orchardgrass and Kentucky bluegrass. It improves forage quality above a pure grass stand and supplies nitrogen for grass growth. It is tolerant of close grazing making it a good choice for pastures but it is not well suited for hay. Lardino varieties of white clover are overall the most productive but don't reseed well. The stand life of white clover is generally 3 years or more.

Clover seeds are usually inoculated with nitrogen-fixing bacteria to ensure nodulation. Bumble bees pollinate clover, but honey bees are typically brought in to the field to supplement their work. The recent high price of nitrogen, has led some growers to look at clovers as a less expensive way to incorporate nitrogen into their soil. For more information on clover seed go to:

<http://www.snakeriver.org/wscpr/WSCPRBook.cfm>

**Key pests:** Weeds are the biggest pests in clover; these include lambsquarter, knapweed, pigweed, mustards, and other weedy clovers. Globemallow, *Sphaeralcea spp*, is a problem because of its prostrate growing habit and is harder to control than the more upright weeds. Weeds are a problem in clover production for forage since they accumulate nitrates and can create a problem with nitrate poisoning in ruminates. Weeds can also attract bees away from clover and serve as a host for lygus bugs. Insect pests in clover include the clover head aphid, thrips, lygus bugs and the clover root borer. Diseases of clover are powdery mildew, and black patch; both are caused by a fungus. Black patch occurs only during warm, muggy weather and in second or later cuttings. Black patch is known to cause “slobber” an ailment that affects the horses and cattle that eat it and causes them to slobber extensively.

**Key pesticides:**

Weeds are controlled with 2,4-D and MCPA. Aphids are controlled with Di-Syston. Thrips are controlled with aldicarb. There are no chemical controls for the clover root borer; growers usually rotate out of clover because of this. Lygus bugs are controlled with Brigade. Both powdery mildew and black patch are controlled through disease resistant varieties and mowing the clover at appropriate times.

**Critical pest**

**Control issues:**

Growers need a replacement product for Di-Syston because it is expected to be lost in the near future. Growers should choose disease and pest resistant varieties when available. The timely harvest of clovers can reduce most foliar diseases. Growers have limited options for pest controls and many labels that treat foliage cannot be fed to livestock. A critical issue on pest control is bee safety as honey bees are used for pollination.

**Expert contacts:** Steve Fransen  
WSU Prosser-IAREC  
24106 N. Bunn Rd  
Prosser, Wa 99350  
509 786 9266

Dennis Pittman  
WSU  
PO Box 646420  
Pullman, Wa 99164  
509 335 7484

**Location**

**Of production:** Skagit, Whitman, Adams, Franklin, Grant, Walla Walla, Yakima, and Clark counties.



Red Clover

[www.cas.vanderbilt.edu](http://www.cas.vanderbilt.edu)



White Clover



Clover

## Clover Production in Washington State



■ Area of Clover Production