

COVER CROPS

CRIMSON CLOVER



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Agriculture and Natural
Resources

Cooperative Extension Program

Overview

Farmers and ranchers who plant cover crops on their land have the potential to benefit in many ways. They can improve their production practices, improve soil health, increase yields, and profitability. Crimson Clover is classified as a leguminous plant, which means that it increases availability of nitrogen through the process of nitrogen fixation. During this process atmospheric nitrogen gas (N_2) is broken down to form ammonia (NH_3) that is usable by plants. This process is important as nitrogen tends to be a limited, but essential nutrient for plant growth, development, and crop production. Nitrogen is a key component of chlorophyll which is the pigment required for photosynthesis. Once the plant is adequately established, it generally grows rapidly and robustly which is necessary for the supply of soils that lack nitrogen (Clark, 2007; USDA, 2019).



Common Benefits of Cover Crops

- Provide nutrients and organic matter
- Reduce soil erosion
- Reduce leaching of Nitrate (NO_3)
- Nitrogen fixation
- Improve biological and physical properties of soil
- Increase soil moisture, hence reduce irrigation cost
- Break pest cycle
- Attract beneficial insects
- Control weeds



Winter Wheat -Crimson Clover Photos courtesy of CARC, NRES



Selected Cool Season Species Include:

Crimson Clover, Winter Pea, Vetch (legumes)

Brassicas (radishes, turnip, collards) (Broadleaf)

Wheat, Barley, Oats, Rye, and Triticale (cross between wheat and rye) (grasses).

Recommended planting time for cool season cover crop species ranges from summer to late fall.

Selected Warm Season Species Include:

Brassicas (radishes, turnip, collards), Sunflowers (Broadleaf)

Cowpeas, Soybean, Sunn Hemp (legumes), and Sorghum (grass)

Recommended planting time for warm season cover crop species ranges from April to June.

Crimson Clover

Crimson Clover (*Trifolium incarnatum*) is a winter/summer annual legume cover crop that may be planted in rotation with field crops, vegetables, fruits, nuts and other plants. It may be planted as a standalone cover crop or in combination with other legumes (i.e. red clover), grasses (i.e. ryegrass) or grain (i.e. oats) cover crops. In addition to the many benefits to soil and plant growth, Crimson clover may be grown as a forage to feed animals. If harvested at or prior to mid-bloom, it can produce high yields and serve as a good source of high quality hay. It is a very nutritious livestock feed source and has more than 25 percent crude protein with up 80 percent digestibility during early spring growth. At full bloom, nutrients supply based on dry matter is also good, with approximately 14 percent crude protein and approximately 65 percent digestibility. Fertile soils that have good drainage are most suitable for growing crimson clover. It may be grown in loamy soils and can also be adopted to sandy and clay soil types with pH of 5.5 to 7.0. It does not grow well in soils that are too alkaline, but will tolerate more acidic soil types than red or white clover (Clark, 2007). Soil testing is recommended prior to planting, specifically to determine the levels of potassium and phosphorous, as too low levels of these nutrients may affect nitrogen fixation and productivity. Crimson clover can supply adequate nitrogen levels needed through nitrogen fixation, therefore the use of nitrogen fertilizers may not be necessary as excess levels of nitrogen can prevent nodule growth and development (Young-Mathews, 2013).

Planting Specifications: Planting Dates and Seeding Methods

Crimson clover is a winter annual and recommended seeding times ranges from summertime through the latter part of fall and is dependent upon the planting location and what it will be used for. Planting between six or eight weeks prior to the first frost is best. Recommended planting depth for clay soils up to half an inch and three quarter inch for sandy soil types. Seedbeds should be adequately prepared and recommended drilled species rates of 15 or 18 pounds of pure live seeds is required for each acre of land. For broadcasting, approximately 22 to 30 pounds may be used (Clark, 2007). With adequate soil moisture and temperature of about 70 degrees F, seedlings will germinate by seven days after planting (Young-Mathews, 2013).

Termination Methods

Crimson clover may be killed by the harsh winter weather, but if it does not, it may be mechanically terminated by mowing, cutting, or spraying with systematic, rather than a contact herbicide, just after early stages of budding (USDA, 2012).

References

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