

ROSE CLOVER

Trifolium hirtum A

Plant Symbol = TRHI4

Contributed by: USDA NRCS California State Office and Lockeford Plant Materials Center, California



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Alternate Names

Trebol rosa

Uses

Range Improvement: The principal use of rose clover in California is for dryland pasture seedings. Low producing annual range overseeded with rose clover or other annual legumes improves the quantity and quality of low producing annual range sites and increases the protein content of harvested forage. Annual legumes also supply nitrogen to stimulate annual grasses. The protein content of rose clover is equal to other annual legumes and is superior to non-legume forage.

Cover Crop: Rose clover is used in vineyards as a winter cover crop where a low-growing, low-volume, self-perpetuating legume is needed. For this use, it is inferior to subclover.

Wildlife: Upland game and deer use the nutritious rose clover forage in mid-winter and early spring. Various birds eat the seed.

Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Weediness

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, or state natural resource or agriculture department regarding its status and use. Weed information is also available from the PLANTS website.

Description

Rose Family (Rosaceae). Rose clover, a freely-branching, introduced, winter growing annual legume is three to twenty-four inches tall. The branches are covered with short, stiff hairs and the rest of the plant is less hairy. The wedge-shaped leaflets are alternate, about 1/2 to 3/4 inches long. Petioles are 1 to 4 times as long as the leaflet. Stipules are membranous, ovate to lanceolate and terminate in a fine hair-like point. The globular, 3/4 inch diameter flowers are stalkless and sheathed at the base by the two utmost leaves. There are 20-30 flowers in each head. Seeds are ovoid, yellow and weigh about 3.0 grams per one thousand. Rose clover was introduced from Turkey in 1944.

Distribution

Rose clover is found in the California Floristic Province, but is also sporadically located in the eastern United States. It is usually found in disturbed areas and roadsides. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Adaptation

In California, rose clover is widely adapted to climates below 6000 feet elevation except the coastal fog belt and areas receiving less than 10 inches of rain. It is adapted to well-drained soils. It does well on strongly acidic to moderately alkaline soils, but does best if the pH ranges between 6 and 7. It germinates as well as other legumes in the cold, fall weather, but not as well as annual grasses. It performs best when fall rains occur while the weather is still relatively warm, enabling it to compete favorably with grasses. It is less tolerant to low pH, but tolerates drier conditions than subclover.

Establishment

Rose clover establishment is improved with some type of seedbed preparation. Several methods have been used successfully. The conventional system of plowing and disking in the spring prior to

establishment and before native annual species set seed is highly successful. The site is then fallowed during the summer. After the first effective fall rains when native vegetation is at least one-inch high, rework the site, prepare a firm seedbed and drill or broadcast pellet inoculated clover. If broadcasting, cover the seed lightly. Rose clover germinates best in warmer weather. For this reason, it may be advisable to plant before fall rains, but weed problems may be more severe. On many California foothill soils, a trashy seedbed helps prevent serious frost heaving damage. Light summer disking of cereal hay or grain stubble makes an ideal seedbed with phosphate applied before disking. Rose clover's seed is broadcast just before the fall rains and covered with a ring roller or harrow.

Management

Range Improvement: In California, graze newly planted areas as soon as annual grasses and forbs are 6 to 8 inches and graze to 3 inches for a one-month period. Continue grazing, but remove stock before last spring rains to allow for seed set. Graze again before fall rains to trample seed into soil. Long-term rotation grazing should be practiced and tailored to the range conditions. Re-fertilize every two to three years with superphosphate and sulfur as needed.

Cover Crop: Rose clover requires very little management in vineyards, except for infrequent mowing and additional fertilizer. Usually one mowing in early spring is all that is needed. In raisin vineyards, the cover is usually turned under after seed set.

Seeds and Plant Production

To prepare seedbeds in California, disk or chisel the site in the early fall and broadcast by mid-October without additional preparation. Use 200-300 pounds per acre of superphosphate on most soils. Tests have shown that most soils planted to rose clover benefit from an application of sulfur if the 12 percent in superphosphate is inadequate. Additional gypsum will correct this deficiency. Rose clover must be pellet inoculated with the improved strain of bacteria to ensure good germination. Rose clover can be seeded alone at 8 pounds per acre, but is usually seeded at 3 pounds per acre in a mixture with subterranean clover (*Trifolium subterraneum*) at 4 pounds per acre and crimson clover (*Trifolium incarnatum*) at 3 pounds per acre. When used as a cover crop, broadcast seed rose clover at 8 pounds per acre and drill the seed at 5 pounds per acre with the recommended superphosphate application. Sow on moist pre-irrigated seedbed or dry seedbed and irrigate for establishment. Plant in the early fall.

Cultivars, Improved, and Selected Materials (and area of origin)

'Wilton' Cultivar: In 1949, the University of California and the Natural Resources Conservation Service release Wilton, an upright variety with adaptation and good seed production. Wilton is adapted to lower elevations below 3000 feet.

'Monte Frio' Cultivar: This cultivar is comprised of equal composites of seed collected from naturalized stands of rose clover in Hornbrook, Siskiyou County; Covello, Mendocino County and Viola, Shasta County, California. Each site is located at elevations of 3,000 to 6,500 feet and naturalized stands have persisted for a minimum of 10 years. Selection has been made on the basis of survival, growth, and reproduction at six major trial sites in California. It was compared to over 26 different commercial and experimental strains of subterranean clover, rose clover, barrel medic (*Medicago truncatula*), cupped clover (*Trifolium cyathiferum*), arrowleaf clover (*Trifolium vesiculosum*), and 'Spreader' alfalfa (*Medicago sativa*). It proved superior in withstanding the cold and dry conditions and was more persistent than the subterranean clovers.

'Kondinin' Cultivar: An early to mid-season maturing variety with a semi-erect growth.

'Hykon' Cultivar: This cultivar has an early season maturity with vigorous spring growth, is well adapted to poor fertility and acidic soils, grows slowly in cold districts, but is tolerant to frosts, is always very palatable, and not suited to waterlogged soils. This cultivar is a heavy re-seeder with slow establishment. Hykon is adapted to elevations below 3,000 feet.

Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

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