

Recommended Species

No-till Winter Annual Species:



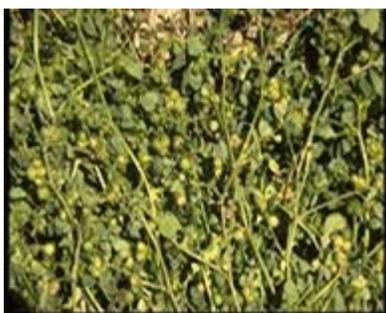
Balansa Clover (*Trifolium balansae*)
6-10 lb/seeded acre

Balansa Clover is a new commercial legume that has been used for cover crops for ten years in California. It is an annual of Mediterranean origin that can grow up to two feet tall if left unmown or will grow prostrate in orchards that are mown. The seed of balansa clover is very small in comparison to crimson, rose, and subclover and it is usually grown in mixtures with these other no-till winter annual legumes.



Berseem Clover (*Trifolium alexandrinum*)
15-20 lb/seeded acre

Berseem clover is a rapidly growing winter annual that flowers in late spring and early summer, much later than most annual clovers. It is very tolerant of waterlogging and can be used to remove excess soil moisture. It is an excellent forage plant, and thus responds well to mowing, exhibiting basal branching and rapid regrowth from the crown. It can be mowed three to four times in late winter and spring. These clippings are nitrogen rich. When mowed in this manner, they can produce up to 400 pounds of nitrogen per planted acre per year under optimal growing conditions, although under most conditions, they will probably produce less than 250 pounds per acre. Where it is used it is often disked in the spring to conserve moisture and reduce nitrogen contribution.



Bur Medic
(*Medicago polymorpha* L.)
15-20 lb/seeded acre

Bur medic is the most popular cover crop among the medics because it usually grows best and reestablishes reliably each year. Bur medic is in the same genus as alfalfa. Although it is frequently referred to as a burclover, it is not a true clover. It can be distinguished by its coiled burs and the short stalk extending from the middle leaflet. Bur medic is the most widely adapted of the medics to soils of different pH. With an abundance of acid-tolerant rhizobium bacteria indigenous to most California soils, bur medic will grow on most sites. In some areas, Egyptian alfalfa weevil may damage bur medic, and in extreme cases the weevil may skeletonize plants. Bur medic is well adapted to California orchard growing conditions. It lends itself well to drip-irrigated orchards because it germinates readily in fall rains, grows rapidly during the

winter, and produces many seeds by early May. Seedlings produce early taproot growth and therefore may be better adapted to early season drought than subterranean clover.



Crimson Clover
(*Trifolium incarnatum* L.)
15-25 lb/seeded acre

Crimson clover performs well in annual clover mixes. Like other mowable clovers, it can be mowed to 3 to 5 inches tall during the winter and early spring. However, because it produces its flower heads above the foliage, it must be allowed to grow from mid-March or early April onward until the seed mature in late spring to ensure reseeding. Whether used alone or in mixes, crimson clover often produces a brilliant display of red flowers.



Persian Clover
(*Trifolium resupinatum*)
10-15 lb/seeded acre

Persian clover has been used for the past ten years in cover crop mixtures in California orchards, primarily almonds in the San Joaquin valley. It is a prolific producer of biomass, flowers early and with irrigation continues flowering into early summer. The fragrant flowers are attractive to beneficial insects. Persian clover establishes readily even at a lower seeding rate due to the small size of the seed compared to crimson, rose, and subclover.



Subterranean Clover
(*Trifolium subterraneum* L.,
T. yanninicum,
or *T. brachycalycinum*)
20-25 lb/seeded acre

Subterranean clover is an excellent cover crop species for many orchard sites. It performs well in mowable clover mixes and usually requires periodic mowing to stimulate vigorous growth. In the spring it often forms a dense mat of stems below the height of mowing, which helps reduce soil erosion and suppress weed seed germination. It is even more tolerant of very close mowing than bur medic due to its low, spreading habit. In addition, the penduncle reflexes and elongates downward after flowering, driving the seedhead slightly underground in some cultivars. There are dozens of subclover cultivars, and differences exist among them in the time of flowering and maturity and in soil pH requirements. In general, subclovers are best adapted to acid or moderately acid to neutral soils. Some cultivars, particularly Clare, Koala, and closely related cultivars, also perform quite well on soils with high pH.



Soft Chess
(*Bromus mollis* L.)
10-15 lb/seeded acre

'Blando' brome is well suited to no-till orchards, especially drip-irrigated ones. It is a selection of soft chess that was cooperatively released by the USDA Soil Conservation Service and the University of California Agricultural Experiment Station in 1960. It is low growing and mowable and matures early; in a Mendocino County trial, seeded 'Blando' brome matured earlier than the resident brome. It also has strong seedling vigor, excellent reseeding ability, and dense fibrous roots. For these reasons, it can reduce soil erosion while not competing excessively with trees. 'Blando' brome is widely adaptable to a range of soils and climates. It is often grown in monocultural stands, but can also be mixed with clovers or other low-growing cover crop species.

The written text descriptions have been taken from *Cover Cropping in Vineyards, A Growers Handbook*, Ingels et al., UC DANR Publication 3338.