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**SWEET CLOVER**

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Many farmers throughout the State are interested in learning about the possibilities of sweet clover. The scarcity of good grasses and legumes that can be grown profitably in the State makes it very desirable for an additional legume for a pasture and hay crop. Sweet clover has been considered a roadside weed until recent years. It is now being received with considerable favor, both as a hay and pasture plant, and also as a soil builder.

**Adaptation of Sweet Clover**

Sweet clover grows in all parts of the United States. It apparently possesses a wide adaptability in regard to soil and climate, and will acclimate itself better than any of the other true clovers or alfalfa. It succeeds in the extreme southern portion of the country and also grows successfully in the Northern States, where it is called upon to endure the long, hot summers as well as the extreme cold of winter. It thrives in the most humid parts of the United States and resists the drouth in the semi-arid regions as well as any of the legumes. The same difficulties that arise in securing a stand of alfalfa under conditions of a limited rainfall are met with in growing sweet clover.

It produces good crops on the acid soils of the Eastern States and also on the alkali soils of the Western States, where there is too much alkali for most crops to grow. It is better adapted to limestone and sandy soils, but will grow on very poor soil, on raw clay where scarcely any other vegetation is able to get a foothold.

Sweet clover also does well on poor, shallow soil and on wornout hill-sides where other grasses will not grow well. It makes its best growth,

however, on rich, well limed land. On the very poor soil it makes good pasture, but will not produce much hay. When it is to be used for a hay crop, it will usually pay to sow on good land. Its value comes not only from the pasture or hay obtained, but also from the improvement rendered to the soil on which it grows. It is efficient as a soil renovator by reason of the large amount of nitrogen it is able to take from the air, as well as the humus added to the soil when turned under, and from the decay of the roots. Its large roots, which develop the first year, aid drainage and do much to break up and improve the tilth of the soil which lies below the reach of the plow. The roots penetrate deep into the ground and decay rapidly when the plants die and, therefore, the effect is almost immediate.

The adaptation of sweet clover to such an extreme range of soil and climatic conditions permits it to be recommended for use in Oklahoma as a pasture crop on such land as alfalfa cannot be successfully grown. It is an excellent crop to precede alfalfa, as it breaks up and inoculates the soil, thereby bringing about better conditions for the growing of alfalfa.

### Varieties

There are only three varieties that are at all abundant in this country—the white biennial sweet clover, the large yellow biennial sweet clover and the small yellow annual sweet clover. The white sweet clover is generally preferred in Oklahoma. It lives two years, is an erect, branching plant that grows from 18 inches to 4 feet high the first year, and from 3 to 8 feet high the second year. Usually it does not produce much seed the first year and will reseed itself from year to year if not pastured or cut too closely. The large, yellow sweet clover is a biennial, and is preferred by some people, but by others it is not preferred as a hay crop because it is more spreading and the mower is likely to pass over some of the stems. However, it is considered one of the best varieties for bee pasture.

The small, yellow variety is an annual and is smaller than either of the other varieties mentioned. It seldom proves profitable, and farmers are advised not to buy it.

### Preparation of the Seedbed

Unsatisfactory results have been obtained by some farmers in Oklahoma on account of not properly preparing the seedbed.

The greatest problem in growing sweet clover is in procuring a stand. Sweet clover requires a firm, thoroughly compacted seedbed with just enough loose soil on top to cover the seed. A good stand is seldom if ever secured on newly plowed, mellow land. It is better to seed on unplowed land than to attempt to plant on a loose, ashy seedbed. The seed may be sown in the fall or spring.

When planting in the spring the land should not be plowed, but disked very lightly from one to two inches deep and then harrow the seed in very lightly unless seeded with a drill, which is better. The seed should be sown early in the spring, or about the time oats is sown. Seeding with a nurse crop of spring oats can be made profitable in the southeastern section of the State, where there is sufficient rainfall. Where it is desired to obtain maximum returns with sweet clover, both as a hay crop and for pas-

ture, it is best to sow alone on a firm seedbed. As a rule from fifteen to twenty pounds of hulled seed and from twenty to twenty-five pounds of unhulled seed to the acre is sufficient. Due to the presence of a large number of hard seeds, which lay in the ground without germinating for a long time, it is necessary to use more seed than would otherwise be required. This is especially true of the seed planted a little late in the spring. Early spring seeding seems to be the best for Oklahoma conditions, yet it may be sown in the fall on well cultivated cotton or corn land, free from weeds.

Sweet clover, like alfalfa, will not thrive unless the roots are supplied with the proper bacteria. It will use the same bacteria as is used by alfalfa, and will thrive in most districts of Oklahoma, as the soil is usually well inoculated with such bacteria.

When the soil is not inoculated, 300 pounds of soil taken from a field of sweet clover or alfalfa will inoculate one acre. It should be drilled in or sown broadcast and harrowed in on a cloudy day, or after the sun is down, as the sun will destroy the bacteria.

### **Sweet Clover for Pasture**

Sweet clover sown in the fall or winter furnishes early grazing and may be lightly pastured through the following season. Sweet clover has a bitter taste due to the presence of a small quantity of material called cumarin. Often stock have to acquire a taste for this crop before they take to it readily. It is one of the first plants to appear in the spring, and if the stock is turned on it early, when the plants are tender, and before other pasture crops are available, they will soon be found eating it greedily. It is claimed that sweet clover will not bloat. When mature the stalk is coarse and woody and not palatable, and stock will not eat it readily. In such cases if desired it is best to mow it first and turn the stock on when the new growth has a good start. Sweet clover makes an excellent pasture for all classes of livestock, comparing favorably with either alfalfa or red clover.

The advantage which sweet clover has over the crops above mentioned is that it will grow on soil too poor for the successful production of alfalfa or red clover. When pastured, a sufficient number of animals should be kept on it to keep it eaten down closely so that there will be an abundance of tender shoots for grazing purposes at all times.

In pastures where the native grass has died out or become thin, sweet clover may be utilized by sowing broadcast and harrowing in with a spike-tooth smoothing harrow.

### **Sweet Clover as a Hay Crop**

This clover is not highly recommended as a hay crop, but may be used for such purpose. From one to three cuttings of hay can be secured in a year. When the seed is sown in the fall, two cuttings of hay may be gotten the first year under favorable conditions. Under ordinary conditions, the second year from two to three cuttings may be secured. Sweet clover yields from one-half to three tons of hay per acre.

The first year it should be cut for hay when the plants are about knee-high, or before the stems begin to harden and get woody. The second year it should be cut just before it blooms. If left growing too long the

stems become hard and woody, and a large portion of the leaves will fall off and the hay will not be palatable.

The first cutting does not require running the sickle higher than usual, but the second year it should be cut from four to five inches from the ground so as not to injure the new growth, which can only come from the stool or stem, and not from the crown, as in the first year.

Sweet clover is harder to cure than alfalfa, as it does not retain its leaves as well and, therefore, should be cured with as little handling as possible. However, it is not so easily damaged by rain while in the process of curing as alfalfa.

The feeding value, as determined by chemical analysis and feeding tests, is practically equal to alfalfa and other legumes commonly grown.

When a seed crop of sweet clover is desired, the last cutting of the second year's growth should be used for this purpose. It may be cut and bound with an ordinary grain binder, and the bundles are very convenient to handle in threshing. The crop should not be cut for seed until the seed pods have turned brown, and care should be taken to have the stalks well cured and dry before threshing.

It will be well for the farmers of Oklahoma to give sweet clover a thorough trial on their upland where alfalfa will not grow well, on their native pasture land, where the grass is getting thin, and also as a legume in a crop rotation.