

Sweet clover may often be used to improve the carrying capacity of an old or worn-out grass sod. In doing this it is necessary to bring the sweet clover seed actually into contact with the soil. If the seed is merely scattered over the sod, most of it is held off the soil by the old grass and only a few seedlings take root. On tillable land the seed can be cut into the sod with a disk drill. Another plan is to burn off the old grass in the spring before sowing the seed. On western prairie sod a good practice is to plow wide but shallow furrows through the sod about 3 feet apart. This provides fresh soil on which to sow the seed. The presence of the sweet clover gradually improves the grass.

Pastures of excellent quality that last several years may be made by sowing mixtures of sweet clover and other forages. One such mixture contains 2 pounds yellow sweet clover, 2 pounds white sweet clover, 3 pounds orchard grass, 2 pounds redtop, and 1 pound Kentucky bluegrass. Brome grass should be substituted for the other grasses in the northern Great Plains and Japan clover for the redtop and bluegrass in the Southern States.

L. W. KEPHART.

SWEET Clover of New Varieties Proves Useful. The recent rapid increase in the culture of sweet clover has aroused interest in the possibility of developing new varieties better suited to the different uses to which the plant is put. Interest has centered principally in the production of better hay varieties, since the common sweet clovers, espe-



FIG. 220.—Some sweet clovers furnish pasturage much later in the season than others. On November 24, 1925, the variety in the center was still green, while the varieties on either side had been killed to the ground four weeks earlier.

cially the white-flowered species, are too coarse and heavy to make good hay from the second year's growth. Several good hay varieties

have already been developed, notably the early-flowering Grundy County, Crystal Dwarf, and Early Dwarf varieties of white sweet clover and the Albotrea and Switzer varieties of yellow sweet clover.

A very interesting recent development in this direction has been the finding, at two of the western Canadian experiment stations, of a type of sweet clover bearing many more and finer stems than the common sorts, and in fact so closely resembling alfalfa in appear-



FIG. 221.—Sweet clovers differ greatly in leafiness and coarseness of stems. These two plants were taken from the same field of yellow sweet clover

ance that it is easily mistaken for that plant. This is a very important discovery, and bids fair to add a distinct new type of forage plant to our list.

The need for sweet clovers which are more winter-hardy has been met with Arctic, or Hansen's Siberian, a white-flowered variety from western Canada, and Albotrea, also from Canada. A sweet clover much better suited than common sweet clovers to the cold, dry climate of the northern Great Plains appears to have been found in an unknown yellow-flowered variety developed at the Redfield, S. Dak., field station of the United States Department of Agriculture.

Variety Sought for Acid Soils

Several persons are endeavoring to find a sweet clover that will grow on acid soils, the need of lime in the soil being a serious hindrance to the culture of the crop in many localities. Other persons are trying to develop a sweet clover especially suited to withstanding the extreme drought and hot winds of the southern Great Plains. It is too early to say whether these efforts will succeed.

A type of sweet clover that would be exceedingly useful is one that would remain green late in the fall, start growth early the next spring, and remain green and in good feeding condition well into the following summer. Such a sweet clover would be immensely valuable for pasture purposes. A number of experimenters, both on farms and at experiment stations, have approached this type with selections of common white sweet clover. Perhaps even better results will come from tests now being made with species and varieties brought in from Europe and eastern Asia, one such species this year having remained green six weeks later than any sweet clover heretofore grown.

All sweet clovers are exceedingly variable in their habits of growth, and many distinct types and forms may be found in nearly any sweet-clover field (fig. 221). Although it would not be desirable to flood the country with new sweet clovers, there is a legitimate opportunity to develop useful types of proved superiority.

L. W. KEPHART.

SWEET Corn Quality Due to Farm and Factory Influences Increased competition among the canners of sweet corn has given impetus to the study of quality in the canned product and efforts are being made to determine just what constitutes quality and what those factors are by which it is affected.

Quality is influenced by two sets of factors: (1) Those which determine the character and condition of the corn as it is delivered at the factory, and (2) those concerned with cannery practices. The conditions at the factory which affect the quality of the canned corn are generally understood, and canning methods are fairly well standardized, so that these require no particular attention. The factors influencing the quality of the raw corn, however, are not so well understood.

For several years workers in the Department of Agriculture have been making a special study of this subject. Field and laboratory experiments have been made upon all the commercially important varieties of sweet corn as well as representatives of most of the other types; studies have been made of the effect of seasonal and climatic factors upon the corn; and practical canning experiments have been made on the corn at different stages of maturity. The results of these experiments have thrown considerable light upon the problem.

From these it would appear that first of importance in determining quality in corn is the tenderness or toughness of the kernel hull. This varies to some extent with the different varieties, but is particularly affected by the degree of maturity of the corn. The toughness increases very rapidly as development of the kernels proceed, being most rapid during the seasons of high temperature. In cool weather the increase is much less rapid. From the standpoint of toughness the period during which first quality corn can be packed is very short.

Proportion of Kernel Parts

Next in importance is the nature and relative proportions of the different constituents in the kernel. In the sweet corn these are com-