

Comparison of the Cowpea and the Soy Bean.

Each of These Legumes Has its Special Place and Each Admirably Supplements the Other.

THE following conclusions are from a bulletin recently issued by the Tennessee Experiment Station, after thorough tests of soy beans in comparison with cowpeas. They show that each of these valuable legumes has its special place in Southern agriculture and indicate clearly the conditions under which each of them may be expected to give the best returns.

We do not yet appreciate the great value of the cowpea, and we are just beginning to learn what the soy bean is worth. With these two legumes for summer and crimson clover for winter, surely we of the South can blame only ourselves if we do not build up our soils. We quote from the bulletin:

Prominent Qualities of the Soy Bean.

1. Nearly all varieties of the soy bean maintain an upright habit of growth. Exceptions to this rule are, (1) that when planted with corn, the soy bean does not climb the stalks as does the cowpea, but grows slender and is apt to fall to the ground; (2) that certain medium and late varieties, when grown on rich land may lodge, though rarely to a serious extent; and (3) that a few varieties, not tested at this Station, are said to have the habits of a true vine. On the other hand, some of the heaviest-yielding varieties of the cowpea make a tangled growth which is difficult to harvest in a satisfactory manner.

2. Fruitfulness is prominent, the best varieties being more certain than any of the cowpeas to produce high yields of seed. This is especially true of late plantings. For example, in 1907 the Mammoth Yellow variety produced on the June 17th planting 28.4 bushels and on the June 29th planting 26.6 bushels of seed per acre. The Medium Yellow variety on the July 15th planting produced 20.2 bushels per acre. The Whippoorwill cowpea, on the other hand, fell from 27.7 bushels per acre on the June 17th planting to 18.8 bushels on the June 29th planting, and to no seed on the July 15th planting. As another condition under which the soy bean is the superior in seed production, mention should be made of the poor yield of seed and of the excessive growth of vine produced by the cowpea on land of good quality and under wet weather conditions, which are not uncommon after early planting. In other words, as a grain producer the cowpea is unreliable, and the more fertile the soil and the greater the rainfall the more apt is it to produce vine and leaf at the expense of fruit.

3. The soy bean may be advantageously sown earlier as well as later in the season than the cowpea. Germination and thrifty growth will follow in weather too cool for the cowpea, which should not be sown until warm weather is fully established. Light frosts, which are sufficient to kill cowpeas and other tender plants, do not affect soy beans either when young or old. The best early varieties when planted in April mature their seed about six weeks earlier than the Whippoorwill cowpea, a matter of special importance in the pasturing of hogs, etc.

4. Soy bean seed is exceptionally rich in both protein and oil, containing, on the average of the analyses

made at this Station, 35.40 per cent protein and 20.35 per cent oil, as compared with an average of 25.28 per cent protein and 1.72 per cent oil for the cowpea. As a supplement to the corn and roughage of the farm, soy bean seed is not equalled by any other grain, and may even be substituted for that exceptionally rich feed, cottonseed meal.

5. The seed is not attacked by weevils and other insects as is the case with the cowpea seed, but, as an offset, is liable to heat and spoil in storing.

6. The seed may be threshed from the hay with a common wheat thresher after some simple adjustments are made. The cowpea, on the other hand, requires a special machine.

7. The seed decay rather slowly when left on the ground and may even germinate in the spring after being turned under in the fall. At least one variety of cowpea, the late Black, has this reputation, but others, like the common Clay and the Whippoorwill, decay easily, and are therefore not so well adapted to being pastured off by hogs.

8. The beans ripen together, so that they may be cut with a mower and nearly the total yield obtained by threshing, but cowpeas ripen irregularly and the total yield can be obtained only by expensive hand-picking.

Qualities Favorable to the Cowpea.

1. A stand of cowpeas is more certain than a stand of soy beans. This is due chiefly to two causes: (1) Soy beans may fail to come up through a soil crust which would offer little resistance to cowpeas, and (2) the germination of the cowpea seed is surer than that of the soy bean seed, which is liable to be spoiled by heating. The cowpea is therefore superior for seeding broadcast, especially on land which is heavy and apt to "bake," or which has been poorly prepared. A third reason of possible importance is that rabbits bite down young soy bean plants but do not appreciably trouble cowpeas.

2. The cowpea is much better suited than the soy bean for planting either with sorghum or corn, whether for forage or for soil-improvement purposes. According to the Station's trials the standard bush pea, the Whippoorwill, is a good climber when planted with sorghum for silage and under such conditions out-yields in both vine and fruit any variety of soy beans.

3. Cowpea hay is more easily cured by the methods in common use, without excessive loss of either leaves or fruit, than soy bean hay.

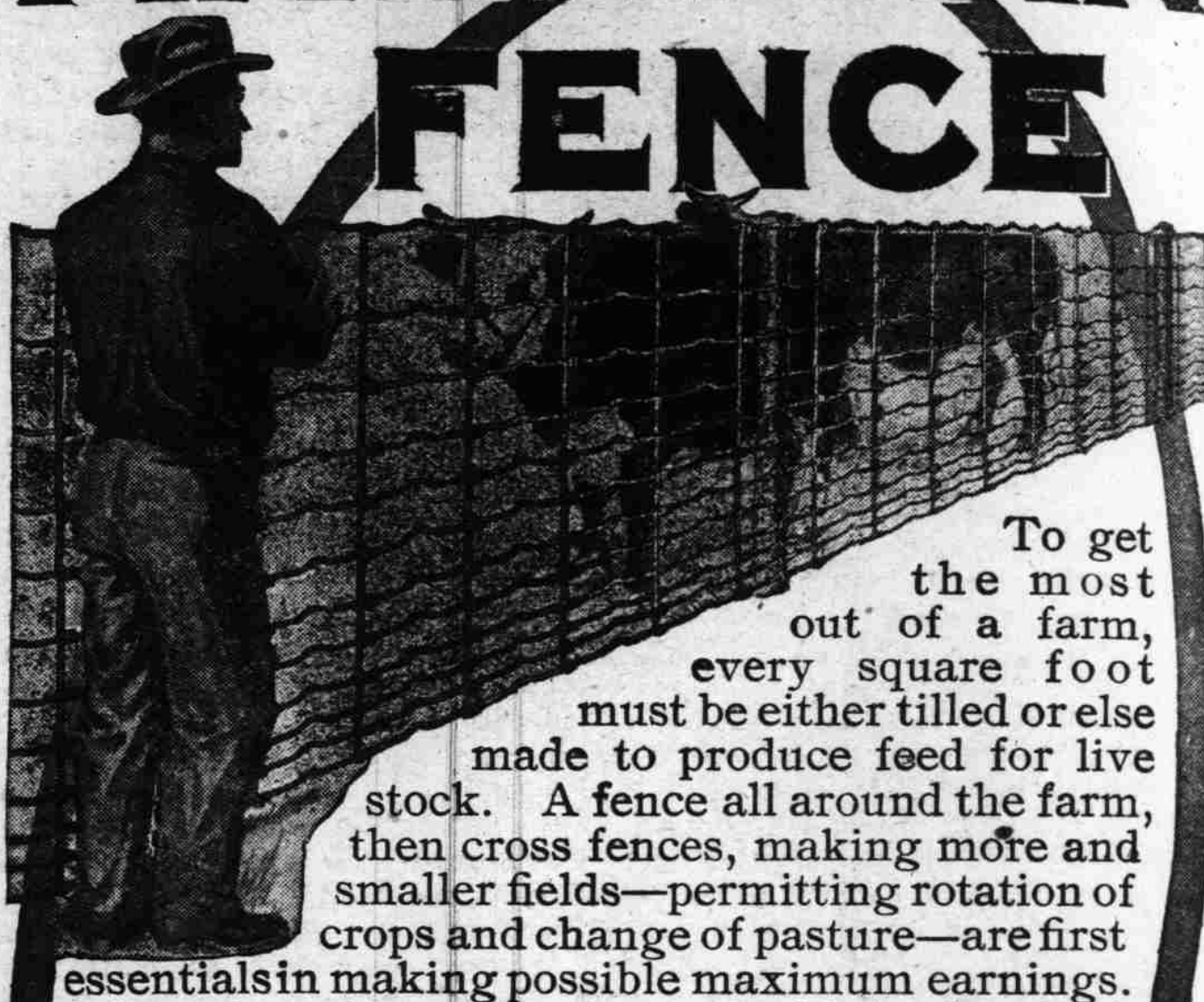
4. A second growth, which sometimes amounts to a fair crop, may be obtained from cowpeas after they are cut for hay, but not from soy beans.

Summary.

The important conditions under which the cowpea is preferable to the soy bean are, (1) when planted with either corn or sorghum; and (2) for seeding broadcast, under the present average farm conditions.

The soy bean, on the other hand, appears more valuable than the cowpea (1) as a grain producer, whether to be pastured off by hogs or to be threshed and ground for general feeding purposes; (2) as an intensive farm crop, desirable where the best methods of farming are practiced, in which case it may be grown to advantage either early or late in the season for both hay and grain,

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and may be used incidentally as an especially good cleansing crop, because cultivation can easily be continued until the ground is well shaded; and (3) as an early hay or grain crop, for which purpose the early and medium varieties will produce either hay or seed several weeks ahead of any variety of cowpea which has been tested at the Station.

An Injustice to the Cowpea.

Messrs. Editors: In a recent issue of *The Progressive Farmer* appeared a timely article on the soy bean by Mr. Shuford, in which he called attention to the great value of this legume. In giving the analyses of the soy bean and the cowpea he credits the soy bean with 34.0 per cent protein, 28.8 per cent carbohydrates, and 16.9 per cent of fat, and credits the cowpea with 10.3 per cent protein 70.4 carbohydrates and 5.0 per cent fat. The above is the analysis of the soy beans and of cowpea hay, but not of the peas of the cowpea, which, according to various analyses made throughout the United States, averages about three times as much protein as Mr. Shuford credits to this king of Southern legumes. Mr. Shuford compares soy bean beans with cowpea hay, which is not fair to the latter.

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