

GROWING WHEAT IN THE COTTON BELT

Wheat of Doubtful Profit in Lower Two-thirds of South—How Climate and Soils Affect Yields—Preparing the Land, Seeding and Fertilizing

By Tait Butler

AT INTERVALS during recent years considerable interest has been manifested in the growing of wheat, even in those sections of the South where it has not been generally grown. The coming of the boll weevil, or a low price of cotton, or an unusually high price for wheat, or a combination of these, has usually been the cause of this special interest in wheat growing. This interest in the wheat crop, however, has shown a very marked tendency to subside whenever these conditions cease to exist. Of course, there are sections of the South where wheat is a regular crop and the interest is constant, but in the greater part of the Cotton Belt there is no constant and general interest in wheat as a general farm crop, except under the unusual conditions mentioned.

The writer has been criticised because he has advised that wheat is of doubtful value as a general farm crop in the lower two-thirds of the Cotton Belt, but my observation continues to support that conclusion. Small areas of wheat may be advisable on any of the clay or clay loam soils of the South, having sufficient fertility; but taking a period of several years, it is less certain than cotton, corn or oats as a money or general farm crop, in most sections of the Cotton Belt.

Two years ago, when the price of cotton fell below the cost of production, there was at once a greatly increased interest in wheat, and last year more wheat was grown in the Cotton Belt, especially the northern half, than ever before. But the crop of 1916 was not good as a whole and the price of cotton is now high with the result that even the present high price of wheat cannot maintain the acreage of 1915 and 1916. In fact, we know sections where a considerable acreage of wheat was sowed in the falls of 1914 and 1915, that will practically abandon it, for the immediate future at least.

Conditions Necessary to Grow Wheat Profitably

THE amount of wheat which should be sowed on each farm is largely a problem to be solved by local conditions of soil and climate and by facilities for handling the crop. Probably the best that can be done to enable the individual farmer to best answer the question for himself is to set down the general facts regarding wheat culture in the South, which past experience has fairly well established.

The climatic conditions which are most favorable to the production of wheat should not be lost sight of in determining its suitability as a Southern farm crop. Wheat of the best quality is most largely produced in the northern sections of the United States and in Canada. In the South we not only fail to produce wheat largely, but it is not of the best quality, being usually soft and lacking milling and bread-making qualities. But perhaps the greatest climatic obstacle to wheat growing in the Cotton Belt, especially the Southern half or two-thirds of it is the warm, moist weather of late spring which favors the attack of rust. Even when rust does not injuriously affect the wheat, which is likely to occur when April and May are warm and moist, the plant is better adapted to a temperate or moderately cool climate and does not make the largest yields, in the South, because of the extremely warm weather of late spring and early summer. In the northern third of the Cotton Belt, wheat may escape serious injury by rust sufficiently often to justify its regular production, but south of this, and in fact in nearly if not all parts of the Cotton Belt, wheat is more or less an uncertain

crop, because of the moist warm weather and the diseases and other consequences of these climatic conditions.

Soils Suited to Wheat

WHEAT is also more influenced by the type or character of soil than most crops, probably more so than oats, corn or cotton. For instance, wheat needs a soil more freely supplied with lime; or in other words, on our soils, which are generally deficient in lime, wheat gives more increase in yields from applications of lime than do the other crops named. Wheat also requires a clay or clay loam soil. In the South, the stiff, sticky, black lime soils are our best wheat soils when well drained. Wheat demands a fairly well drained soil and one of fair fertility. In the South, where winter wheat only is grown, a well drained soil of much better than average fertility is essential to the successful production of wheat.

Sandy soils are not suitable for wheat. These soils predominate in the Southern part of the Cotton Belt, are generally less fertile, poorer in lime and phosphorus, and consequently less satisfactory all around for the growing of wheat.

Preparation of Seed Bed

FALL-SOWED crops in the South generally do better on a soil preparation which leaves a firm or rather compact seed bed. This is probably due to the dry fall weather which

is not uncommon in the South. But whatever the reason, the fact is pretty well established that freshly broken land or a loose seed bed is not best for wheat. Perhaps the best preparation is early breaking, say a month or two before seeding, with one or two diskings or sufficient cultivation between breaking and seeding to keep down the weeds and firm the soil. When wheat is to follow a legume crop, like cowpeas or soy beans, which has been taken off for hay, or when it follows a corn crop that has been kept clean by cultivation, the best preparation is probably a good disking as preparation for the seed drill. When breaking just before seeding is necessary, then the land should be immediately disked and rolled, preferably with a corrugated roller or culti-packer, before seeding.

Varieties for Southern Farmers

THERE is no best variety of wheat. Desirable qualities in any variety are, of course, large yield, earliness, as a means of escaping rust injury and quality of milling and bread-making excellence.

The South quite generally objects to a bearded variety, because we attach too great importance to the presence of beards when the crop is made into hay or the straw is fed. While the beards are somewhat objectionable they are not seriously so and certainly should not outweigh other good qualities. For instance, in yields, no variety, taking the results of the tests of Southern experiment stations as a whole, has surpassed Fulcaster, but it is a bearded wheat and consequently not as popular as some of the beardless varieties which have not generally yielded so well. The following are some of the

varieties standing highest in Southern tests:

Fulcaster (Bearded),
Blue Stem or Purple Straw (Beardless),
Red May or Early May (Beardless),
Golden Chaff (Beardless),
Falls (nearly beardless),
Red Wonder (Bearded),
Klondike (Beardless).

Time of Seeding

IN THOSE sections where wheat has been grown sufficiently to cause the Hessian fly to have become numerous enough to do much injury, rather late seeding, not long before the first killing frost, is necessary; but early sowed wheat when not injured by the fly makes better yields. The average dates of the first killing frosts range throughout the South from October 24 at Nashville, Tenn., to November 7 at Atlanta, Ga., and November 15 at Dallas, Texas. In the northern half of the Cotton Belt from October 1 to October 15 or 20 will generally give better results than later seeding except where injury from the fly is likely. Most of our wheat is sowed too late and the yields reduced much more by this late seeding than would result from Hessian fly damage if sowed earlier. On rich lands, later seeding is permissible than on lands of less fertility. Of course, seeding should not take place so early as to cause too large a growth and endanger killing by frost, unless it can be pastured sufficiently in dry weather to prevent its becoming too large.

Like other grains, wheat gives better yields when sowed with a seed drill. The seed are placed at a more uniform depth and better stands are obtained. Probably the best yields are obtained when around one and one-fourth bushels of seed are used per acre, but heavier seeding, rather than lighter, should be the practice on lands not especially fertile and when seeding is late and done by hand.

Wheat in the South should generally follow a legume crop, like cowpeas, soy beans, etc. Wheat requires land rather well supplied with nitrogen and humus as well as lime and phosphorus. The legume crops are the cheapest source of nitrogen, but when the land is deficient in nitrogen or the wheat does not follow a legume crop, a top-dressing of 75 pounds to 100 pounds of nitrate of soda in the spring has been generally found profitable. If the preceding legume crop has not been liberally fertilized with phosphorus it will usually pay to use some in the fall when the wheat is sowed on those lands which are deficient in phosphorus and respond in increased yields to its use. The best method of fertilizing wheat is probably to use phosphorus and lime on a legume crop and follow the legume crop with the wheat. When this is not done it may pay to use a fertilizer containing phosphorus in the fall and a top-dressing of some nitrogenous fertilizer in the spring.

How a Profitable Crop of Oats Was Raised

THE soil was fairly fertile; it had been improved by pasturing, and by growing lespedeza.

2. The seed bed was well prepared.
3. Most of the oats were planted in October with a drill.
4. The seed were bright, heavy and well cleaned with a good fanning mill.
5. Last fall the seed was treated with formalin for smut; this, no doubt, increased the yield several bushels per acre, as close inspection showed only a slight trace of smut, while adjacent fields of oats not treated were badly damaged.

For the past two years we have been planting the best home-grown Texas Red Rust-proof seed oats obtainable beside Hasting's Hundred-bushel oats, and find that the latter produced the best yield.

H. H. MILLER.

Canton, Miss.

Save your papers and get a binder.

A MESSAGE FROM SENATOR HOKE SMITH

One of the South's Foremost Statesmen Sends a Message to Our Progressive Farmer Boys Emphasizing Five Qualities—This Week's "Success Talk" for Boys

One of the South's most influential men in National affairs is United States Senator Hoke Smith of Georgia. In 1893, at the age of 38, he became Secretary of the Interior in President Cleveland's Cabinet. In 1907 he became Governor of Georgia and was afterwards re-elected for a second term. Since 1911 he has been in the United States Senate. Following is his message to our boys:

To the Boys on Southern Farms:—

CLARENCE Poe, who is doing so much for the South in his *Progressive Farmer*, has requested that I say a few words to you on the qualities which I believe will help you win success, both as men and as farmers. It is difficult to do what he asks in a few words.

First, let me say to you that **INDUSTRY**, tireless industry, coupled with self-denial, is necessary. And when I urge you to industrious self-denial, let me say that while at first it will be self-denial, later on you will grow to enjoy industry, and it will bring you far more pleasure than carelessness or waste of time.

2. **THRIFT** is necessary. I mean by this—economy and avoidance of waste of anything. This again involves self-denial, but it will bring pleasure for it will place you in a position to spend what you save for useful purposes.

3. The development of your **CHARACTER** broadly. Frank, honest, truthful character, coupled with industry and self-denial,—these are the elements which go to make a real man.

4. The farmer needs to **CULTIVATE HIS IMAGINATION**. He must be able to see the possibilities that surround him. He must love the soil and realize the wonderful progress that is to be made in the future by the study of plants and in the study of plant foods.

5. You must go at your work with an **INTENSITY AND ZEAL** which overcome obstacles, and which, by overcoming obstacles, can give you the highest thrills of



SENATOR HOKE SMITH

joy that come to men, especially if after overcoming those obstacles you use your growth and power not for selfishness but for the good of your neighbors and of your country.

I believe a wonderful future is ahead of the boys who train themselves in the South to be good farmers, and I do not know a line of service that will do more to strengthen and develop the section in which you live.

HOKE SMITH.