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IN COOPERATION WITH THE UNITED STATES DEPARTMENT OF AGRICULTURE

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URBANA, ILLINOIS

GROW MORE WHEAT IN ILLINOIS

BY W. L. BURLISON AND W. F. HANDSCHIN

If "FOOD WILL WIN THE WAR," bread and the men who produce it will play a large part in winning it.

To insure ourselves and our Allies against a serious shortage of bread grains, we must plant a large enough acreage to take care of our need, not only in a favorable crop year, but in a year of poor crops.

Our present wheat acreage is about one-third of what we should have if farmers generally used a four- or five-year rotation in which the wheat crop occurred once.

Growing fall wheat in the rotation saves labor, because the work is then more evenly distributed thruout the cropping season.

The yield as well as the acreage of wheat should be increased in every way practicable.

Plow as soon as the previous crops are removed. Prepare a good seed bed. Choose a standard variety of seed. **GET YOUR SEED NOW.**

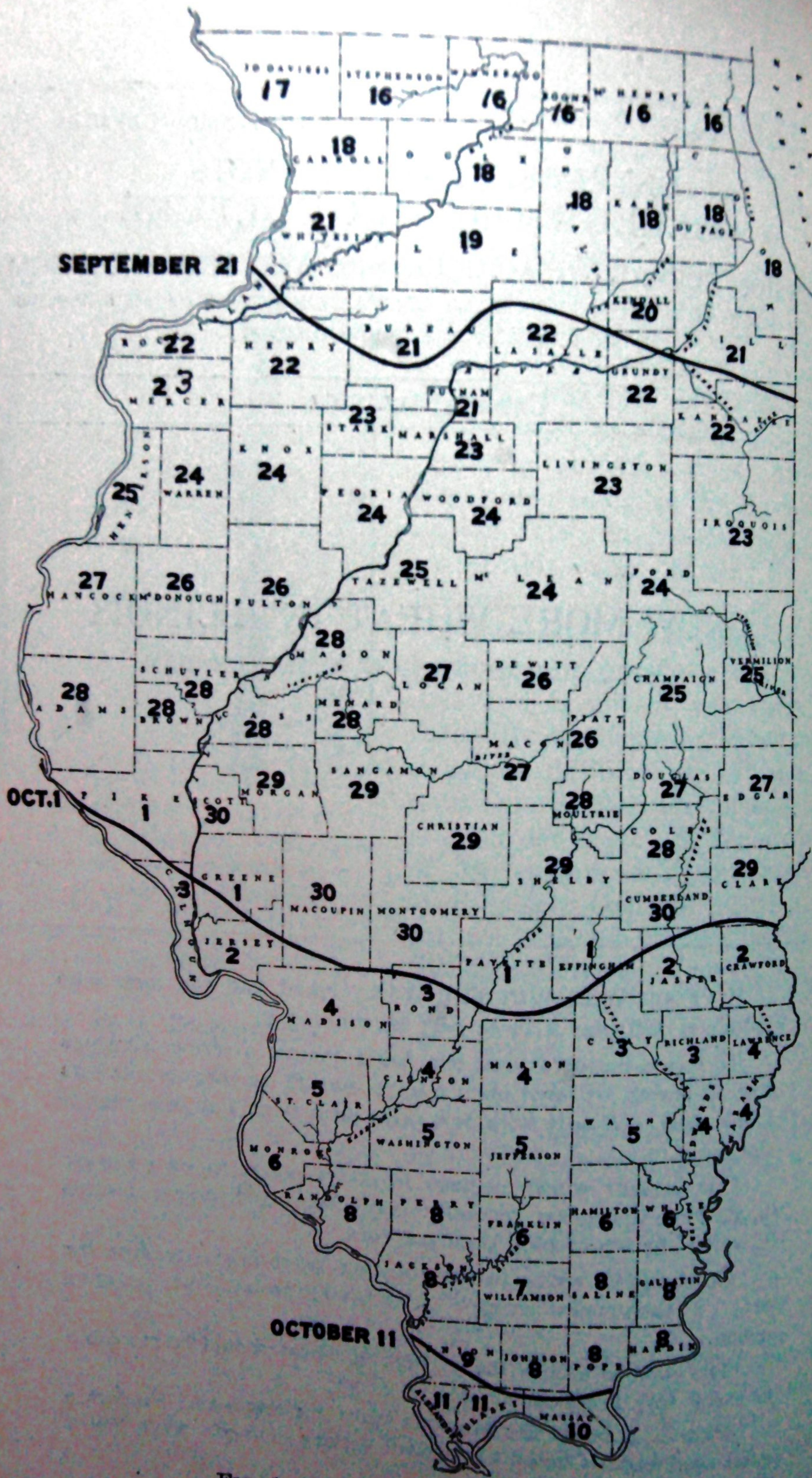


FIG. 1.—WHEAT SEEDING CALENDAR

The date for the seeding of winter wheat so as to avoid Hessian Fly injury can be determined for any county by referring to the dates given in the above figure.

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By W. L. B
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GROW MORE WHEAT IN ILLINOIS

By W. L. BURLISON, ASSOCIATE CHIEF IN CROP PRODUCTION, AND
W. F. HANDSCHIN, VICE-DIRECTOR AGRICULTURAL EXTENSION SERVICE

Wheatless days and the use of wheat substitutes during the past year have taught us to place new values on wheat. The substitutes we have learned to use in an emergency have only helped to emphasize the fact that there are no really satisfactory substitutes for this standard bread grain. It is therefore important that we produce enough wheat to provide bread for our armies and our Allies across the water and for our civil population at home. If "Food Will Win The War," bread and the men who produce it will play a large part in winning it.

WE MUST PLANT A LARGER ACREAGE

On the basis of the best figures available we shall need all of the wheat we can grow on our normal acreage in a favorable crop year in order to thoroly meet our own needs and those of our Allies. To insure ourselves and those depending upon us against a serious shortage of bread grains, we must plant a large enough acreage to take care of our needs, not only in a favorable crop year, but also in a year of poor crops. The most important wheat producing areas in the United States are already growing a large proportion of their improved acreage in this crop. They can increase their wheat acreage only moderately without throwing their systems of farm management still further out of balance from the standpoint of good rotations and the best use of man and horse labor. The increase in the wheat acreage should be made mainly in those sections which are fairly well adapted to its production but which ordinarily grow this crop in only a limited way.

MORE WHEAT FOR ILLINOIS

The corn belt generally and Illinois in particular, perhaps, should increase considerably its wheat acreage. This should be done not only to supply the wheat that is needed to win the war, but also in the interest of good rotations and good farm management. According to the census of 1910, Illinois had in 1909 slightly less than 8 percent of its improved acreage in wheat. According to the Yearbook of the United States Department of Agriculture, this state had in both 1916 and 1917 less than 6 percent of its improved acreage in wheat. These acreages could be more than doubled without reaching the proportions we should have in a four-year or five-year rotation in which the wheat crop occurred once.

ROTATIONS FOR CENTRAL ILLINOIS

In the most important corn-producing section of the state, that is, central Illinois, a five-year rotation consisting of two years of corn, one year of oats, one year of clover or other legume crop, and one year of wheat would be fairly satisfactory to meet the present emergency. This rotation (with 20 percent of wheat), would provide just about three times the average proportion of wheat now grown in the state. In central Illinois it would represent an even greater increase over the proportions grown at the present time.

A four-year rotation consisting of one year of corn, one year of oats, one year of clover or other legume crop, and one year of wheat would also be satisfactory for this section, especially for grain farmers. This rotation would still further increase the proportion of wheat.

Both these rotations are coming into somewhat common use among the best farmers in the corn-belt section of the state. Both make possible a very satisfactory distribution of man and horse labor during the cropping season, and both permit the seeding of sweet clover in the wheat as a cover crop to be plowed under for corn. Farmers in central Illinois should plan to grow from one-fifth to one-fourth of their improved land in wheat.

ROTATIONS FOR SOUTHERN ILLINOIS

In southern Illinois, which grows a major part of the wheat produced in the state, the proportion of wheat grown may be still further increased. Rotations containing from one-fourth to one-third of wheat may be used to good advantage in this section. The four-year rotation consisting of corn, oats, clover, and wheat is usually a satisfactory one on well-limed land. By seeding wheat in the standing corn, or after the corn is cut for silage or shocked in the field, a three-year rotation of corn, wheat, and clover may be used. Other good rotations are: corn, cowpeas or soybeans, wheat, and clover; and corn, cowpeas or soybeans, and wheat (with a cover crop of sweet clover, if the land has been well treated with limestone).

MORE WHEAT AND GREATER PROFITS

Naturally the rotations, or the proportions of wheat here suggested, may have to be varied somewhat for different soil areas or for individual farmers. The two chief facts to be kept in mind, however, are: first, that we need to increase our acreage of wheat in order to insure for ourselves and our Allies a really satisfactory bread supply; and second, that such increases are really desirable from the standpoint of the best rotations and the most profitable systems of farm management.

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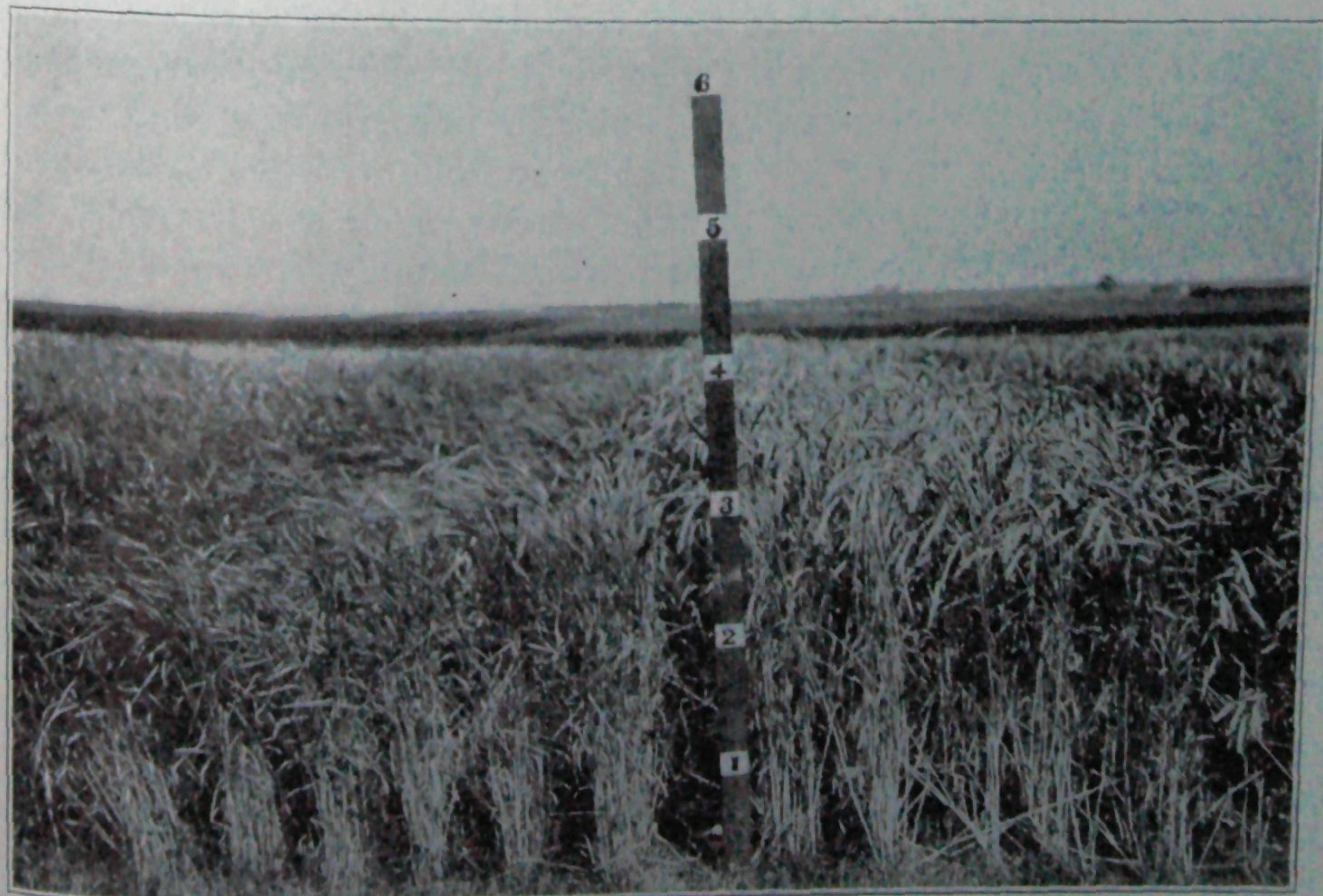
SHALL WE GROW WHEAT OR RYE?

In deciding whether to grow wheat or rye, Illinois farmers should be guided by the following facts. Wheat is in general more satisfactory as a bread grain than rye. The price of wheat is fixed by Congress, and there is therefore less risk in growing it than in growing rye; the price of rye is not fixed, and may be higher or lower than that for wheat when the farmer comes to sell it. This latter point adds to the necessary uncertainty as to yields, the additional uncertainty as to prices. If the farmer's land is adapted to growing wheat, it would seem wise for him to take only one chance instead of two and grow wheat instead of rye.

Rye should therefore be grown only on soils and under conditions to which it is distinctly better adapted than wheat.

ADAPTATION OF WHEAT AND RYE

Winter wheat can be grown on a wide range of soils, varying from clay to the loam types. On all of these soils, the crop responds to rational soil treatment. Rye may well be substituted for wheat on the poor or untreated soils in Illinois. On such soils it will produce greater returns than wheat. Rye also withstands winter-killing better than wheat. It does not lodge badly, and in general the



WINTER WHEAT

WINTER RYE

Fig. 2.—The above figure shows the more serious lodging of winter wheat as compared with rye. The crops shown are growing side by side under the same conditions as to soil and other factors.

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Hessian fly is not known to seriously injure it in this country. In Europe, however, where rye is sometimes grown to the exclusion of wheat, it is often much damaged by the Hessian fly.

THE PRICE OF WHEAT AND RYE

The price just now being offered for the 1918 rye crop is considerably lower than that fixed for wheat. This is in harmony with usual conditions, the price of wheat having been 25 percent above that of rye as an average of the ten years preceding the war, even tho the price of rye ranged above that fixed for wheat during a considerable portion of the year just past. If we assume, however, that the price for rye is to be somewhat less than that fixed for wheat, there are still two very good reasons why we should grow rye on the lands that are somewhat better adapted to it than to wheat or other crops: first, because it will increase by that much our supply of bread grain, which is so necessary to the successful conduct of the war; and second, because on such soils rye, even at present prices, will likely be as profitable as any other crop which can be grown.

GROWING FALL WHEAT SAVES LABOR

The growing of fall wheat in the rotation is of special importance in helping to distribute more evenly the man and horse labor required in crop production. The work of plowing, soil preparation, and seeding comes in late summer, when farm work is not especially pressing, and it can therefore be done with the least amount of conflict with the growing of other crops, such as corn, oats, and hay. Also, the harvesting of fall wheat usually comes at a time when corn is fairly well laid-by and oats are not as yet ripe. The wheat harvest may conflict somewhat with hay-making, especially in the case of clover, but the wheat crop reduces by that much the corn and oats acreage. This helps to cut down somewhat the greatest rush of work, or "peak load", which usually comes at the time of oats seeding and corn planting. As a general rule, the introduction of fall wheat into the rotation makes possible a much better distribution of labor, and this is particularly important during the war, when the labor supply is certain to be short and the need for handling it to the best advantage is of vital importance.

YIELDS AS WELL AS ACREAGE SHOULD BE INCREASED

In attempting to increase the production of wheat, we should not only increase the acreage planted, but we should make every effort possible to maintain or increase the yields per acre. This will be best done by making careful use of all manures produced on the

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farm; by growing legume crops such as the clovers, soybeans, and cowpeas; by using mineral fertilizers, such as limestone and phosphate, where these are needed; and by good methods of soil preparation, cultivation, and general good farming practice.

DANGER FROM CHINCH BUGS

Perhaps the greatest objection to the more extensive growing of wheat in the corn belt is the danger from the chinch bugs, which may breed in the wheat (or in rye, if that be grown), and then destroy the corn. The corn-belt farmer must therefore be prepared to drop wheat out of the rotation if the chinch bugs begin to appear in dangerous numbers.

PREPARING THE SEED BED

The seed bed for wheat should be plowed as soon as the preceding crop is removed. As a rule, five to seven inches will be found a desirable depth. During a dry season or on soils which are most seriously affected by drouth conditions, it is well to disk the fields before plowing. This will help to retain the moisture and kill the weeds that spring up after the previous crop has been removed.

As soon as the ground is plowed it should be harrowed. This will break up most of the clods. Some time before seeding, a good double-disking and a stroke with the spike-tooth harrow will be found sufficient additional preparation for wheat ground.

If the previous crop was one such as soybeans or cowpeas, plowing is not necessary unless the soil for that crop was poorly prepared and carelessly cultivated. A thoro double disking and harrowing will develop a satisfactory seed bed in most instances. If corn has been removed for silage, treatment similar to that for soybean ground is satisfactory. In some sections, wheat is seeded between the rows of corn with good success. This considerably reduces the labor required, but the yield will be somewhat less than on a well-prepared seed bed.

CHOOSE A STANDARD VARIETY

It is very important to use a variety of wheat well adapted to local conditions. There is a marked difference in varieties. Some varieties winter-kill much worse than others, while certain kinds lodge and shatter badly. It is well to use varieties which grade and sell best on the market. As a rule, hard wheats command higher prices than soft wheats.

There is not so large a number of varieties of rye as there are of wheat, nor is the difference in varieties so great.

WHEAT VARIETIES FOR ILLINOIS¹

Northern Illinois.—Continued tests have shown that Turkey Red is the highest yielding variety for northern Illinois. Turkey Red is a bearded hard wheat. It is one of the best kinds for resisting winter-killing. Minnesota Reliable, Kharkof and Malakoff are other promising wheats for this section.

Central Illinois.—The leading varieties of wheat are, Turkey Red, Malakoff, Fultz, Hungarian, Pesterboden, Kharkof, and Dawson's Golden Chaff. Red Wave and Red Cross are two other standard wheats much used in many localities.

Southern Illinois.—Hard wheats are not well adapted to southern Illinois. The more important varieties which are successfully used are Fulcaster, Economy, Indiana Swamp, Harvest King, Missouri Pride, Rudy, and Poole.

TIME OF SEEDING AND AMOUNT OF SEED

Wheat should be seeded early, but not ahead of the time when there will be danger from the Hessian fly. Dr. S. A. Forbes, for many years State Entomologist, recommends the dates indicated in Fig. 1. So far as possible these dates should be observed. As indicated above, the Hessian fly does not usually attack rye, and therefore in seeding rye it is not so important to follow these dates closely. Rye may be seeded before or after the planting of wheat; the seed bed for rye should be prepared about the same as for wheat.

As a rule, wheat is seeded at the rate of five pecks per acre. This amount is increased sometimes to a bushel and a half per acre. Rye is seeded at about the same rate.

¹For further information on varieties of wheat and rye send for Illinois Experiment Station Bulletin 201, "Yields of Winter Grains in Illinois."