

Experiment Station Visited.

(Continued from Page 1.)

over to that of the best, and the results were studied carefully. But it is altogether too much of a job to tell of this on paper. The farmers who were not there this year will have to go next and see and study for themselves, and all those there on this trip should go back again. The moisture experiments, the field peas and the farm machinery, as well as the farm lands of Sherman county have to be seen to be appreciated.

The afternoon of Saturday was spent in the shade of the laboratory building, eating doughnuts and drinking lemonade while listening to an interesting lecture by Mr. Stephens on the work, progress and findings of the station. Those who were as unfortunate as not to be able to go over there can get the principal points of this lecture by obtaining from the Oregon Agricultural college bulletin No. 190, "Wheat Growing After Fallow in Eastern Oregon," by D. E. Stephens and G. R. Hyslop. This bulletin is a good thing to have if a farmer is going to grow wheat.

Howell's Farm.
After leaving Waco the party, under the leadership of County Agent Calkins, visited the farm of Henry Howell, one of the largest and foremost farms of Sherman county. Under the capable management of Mr. Howell this farm has been making an average yield of better than forty bushels to the acre for the past three years. He has been farming this place for the last eighteen years and the fields are in the best of condition.

Several points of interest were discovered in Mr. Howell's methods of farming. First, the tractor operations are done with large tractors; two big 75-horsepower tracklayers being used for this purpose. These tractors are not only maintained on this farm but they are repaired there as well. Mr. Howell is a skilled mechanic, and while doing all of his repair work he has devised a number of rather scientific hitches for pulling plows, drills, weedeaters, and combine.

Besides the machinery exhibit Mr. Howell was also able to show a large acreage of Turkey red wheat that promises a yield of forty bushels this year, and a large body of summerfallow of which no farmer need be ashamed. It was very firm under foot and yet possessed a good soil which conditions were brought about by the use of Campbell packers drawn directly behind the plows and then gone over with the spring tooth harrow. After viewing this farm the Morrow county visitors were made to realize that as yet they have not been doing their best.

Fred Root Farm Visited.
Another very successful farmer of the Gordon Ridge section of Sherman county, which by the way is considered to contain the cream of wheat lands of that county, is Fred Root, who does not follow just the same line of procedure in all his work as Mr. Howell. He uses horses principally but has a tractor which has been used to some extent on the place and not considered to be the greatest success. Mr. Root does not handle as much land as his neighbor but as to yield he gets about the same results per acre. This farm, like that of Mr. Howell, is well kept, the summerfallow is thoroughly worked and kept free from weeds and the moisture well preserved. Mr. Root has a fine lot of growing grain, all Turkey red, but does not expect nearly so good a yield as last season. The long, dry fall worked a hardship on the Sherman county farmers as it did over this way and a very large number were puzzled as to the proper time for seeding. Mr. Root follows the early seeding method consistently and has found this to give best results. Like Mr. Howell, he favors the hoe drill, but at that he fears that a lot of his grain got into the ground a little too deep last fall because of the dry condition of the soil at seeding time.

We had the pleasure, late Saturday afternoon, through the courtesy of Harry Pinkerton, secretary of the Sherman county farm bureau, of visiting a number of fine wheat farms between Gordon Ridge and the Nigger Ridge and was shown what is said to be the finest field of Turkey red in Sherman county this season. It stood better than waist high, was very even all over and is estimated from present prospects to go over 20 sacks per acre.

One cannot fail to be impressed with the very thorough methods of farming in general use in Sherman county. The farmers there have learned their lesson many years ago and they are living up to their knowledge in a very consistent manner. Weeds have had to be kept down and the fight has been a hard one. The rotary harrow weeder is in use almost constantly on the summerfallow and this implement is well liked; it gets the weeds and helps in packing the land. Just here it might be well to give a summary from Bulletin No. 190, referred to above:

"Wheat is the most important crop in Eastern Oregon. About a million and a quarter acres are annually devoted to raising wheat in the eighteen counties east of the Cascade mountains.

"Wheat is principally grown after summerfallow. The area sown to wheat, exclusive of the summer-fallow area, is about equal to that of all other cereals and forage crops combined.

"Winter wheat generally outyields spring wheat, except under irrigation.

"Nearly all Eastern Oregon soils are adapted to wheat growing. On the lighter soils of the drier areas, wheat has been found to be the farmer's most profitable crop.

"Preparation of Soil for Growing Wheat After Fallow.

"Experiments at Moro station show that fall disking of stubble reduces wheat yields. Spring disking before early spring plowing does not pay.

"Spring disking before late spring plowing kills weeds, saves moisture, and increases yields.

"Burning stubble is likely to deplete the soil of needed vegetable matter and ultimately cause it to run together and be more subject to washing and gully-ing. Stubble should never be burned in the fall. The standing stubble holds snow and aids in getting moisture into the soil.

"Highest yields and best quality of wheat are produced on early spring-plowed summerfallow. Careful experiments at Moro for nine years have proved that the average yields of winter wheat after early spring plowing were 6.3 bushels an acre more than after late spring plowing and 2.3 bushels an acre more than after medium early spring plowing.

"The total increase in yield for early over late plowing in nine years was

167 bushels an acre, or the equivalent of two and one-half years of crop on late plowing.

"Fall plowing and medium early plowing for summerfallow give similar results.

"Late spring plowing for fallow produces low yields and soft wheat.

"The nine-year average yield of ten-inch over five-inch plowing at Moro was only 3 bushels of wheat.

"Medium early plowing in the fall gave slightly higher yields of winter wheat than disk plowing in the fall at Moro.

"The summerfallow should be cultivated frequently enough and in a manner to prevent weed growth and maintain a cloudy mulch.

"The use of the subsoiling packer at Moro did not increase wheat yields. The surface packer gave only a slightly increased yield.

Seed Treatment.

"All present commercial wheat varieties should be carefully treated for stinking smut. For sowing in dry soil, the bluestone treatment is the best. Formaldehyde-treated seed should be sown after treatment and in moist soil. (Mr. Stephens was particular to impress on the minds of the visitors that they should follow the rules of proportion very closely in the treatment of seed wheat; guess work will not do.)

Time, Rate and Depth of Sowing Wheat.

"Good uniform stands of spring or winter wheat are always desirable. Thin or irregular stands encourage weed growth and reduce yields.

"Early sowing of winter wheat at four to five pecks of treated seed an acre gave the highest yields at Moro. Generally deep seeding of winter wheat should be avoided.

"Early sowing of spring wheat always pays. Most spring varieties should be sown at four to five pecks an acre. Largekerneled varieties, like Early Baart, should be sown thicker.

Cultivation of the Growing Crop.

"Harrowing winter wheat in the spring generally reduces yields. The nine-year average yield of winter wheat at Moro was reduced one bushel an acre by spring harrowing. In three of these years an increased yield was obtained from the harrowed grain and in the other six years a decreased yield. If winter wheat is harrowed in the spring it should be done when the soil is not badly crusted or when the crust has been softened by rain.

This summary gives an idea of what was developed by the lectures of Mr. Stephens. The points are all elaborated on in the bulletin, and every wheat raiser of the county should have a copy and study it carefully. It is set out in plain language, free from technicalities and is highly educational.

Arriving at Moro late Friday evening, the visitors had no time to visit the experiment station. They had lunch at Hotel Moro and a meeting was arranged for the evening to hear R. V. Gunn, crop expert from O. A. C. Mr. Gunn is in Sherman county at the present time with his assistants gathering data as to the cost of production of the 1921 crop, and he talked to the visitors concerning the survey made of the 1920 crop. This is a part of the work carried on under direction of the U.

S. Department of Agriculture and the Oregon Agricultural college. A statistical survey of 150 Sherman county wheat farms taken one year ago shows that it cost \$1.90 to produce a bushel of wheat in 1920. A second survey on the same farms is now being taken for the purpose of showing the cost of the 1921 crop and it will be a few months before the summary and average will be available.

Mr. Gunn used charts to illustrate the work. These featured the fact that the \$1.90 cost was cash cost.

The non-cash cost representing such items as the farmers' own labor, rent or interest on his land, seed taken off farm, depreciation of work stock and equipment, etc., totaled approximately 80 cents for every bushel produced.

A detailed analysis of costs on the 150 farms showed that it cost some farmers much more than others. The range of cost varied from \$1 to \$3 per bushel. In other words it cost some farmers three times as much to produce a bushel of wheat as it did other farmers. One big reason for this variation was the yield per acre. For instance, there was 39 farms each of which had a yield less than 15 bushels per acre. The average total cost on these farms was \$2.10 per bushel. There were 53 farms each of which had a yield between 15 and 25 bushels, and on which the average cost was \$1.82 per bushel. There were 28 farms each of which had a yield over 25 bushels per acre, which had an average cost of \$1.84 per bushel. Farming practices as well as quality of land, had something to do with the variation in yield.

A comparison of costs per bushel on the horse-operated farms with the cost per bushel on the tractor-operated farms, shows only a two-cent difference in favor of the tractor-operated farms. The cost per acre, however, on the tractor-operated farms was \$38 as compared to \$30 on the horse-operated farms. The yield per acre on the farms where tractors were used was 24 bushels per acre, as compared to 19 bushels on the farms with no tractors. No doubt part of this increased yield, where tractors were used was due to earlier plowing and more thorough cultivation made possible by the use of the tractors, but the location of these farms was largely on better land. Also the tractor farmers operated larger acreage. They averaged 450 acres as compared to 300 acres on the farms using horses only.

Three years data are to be included in the Sherman county project, the results of which will be available later in bulletin form. In the meantime yearly reports will be issued, the first of which is now available. Morrow county wheat growers who are interested may secure this report by writing to the Oregon Agricultural college at Corvallis, or the office of Farm Management, Washington, D. C.



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