

Winter Wheat on the W. X. Sudduth Farm near Lavina.

FARMING ON THE BENCH LAND

By Dr. W. X. Sudduth, Billings, Montana

How to Select the Homestead.
As livestock is a necessary adjunct to the highest success in farming in the semi-arid belt, a location should be made adjacent to as much free range as possible. Naturally this will take the settler into the more broken sections of the country, where he can find some smooth land on the bench or along some small stream, where small diversion dams may be put in and flood waters turned out on small bottoms for orchard and garden, thus insuring a comfortable home life, as plenty of domestic and stock water is absolutely essential to success.

When to Come.
The new settler should move onto the land he intends to improve by November 1 at the latest. It would be better for him to be there by October 1, so as to get up his house before winter sets in, although in this section of Montana people winter in tents and do not suffer greatly. Still, to a person coming from the more humid east the better plan is to put up as comfortable a house as he can afford. During the winter months material can be gotten on the ground for stables, corrals and fencing, and the early spring

months can thus be left free to break up the new sod. If a person waits until spring to move onto his claim, too often the summer is well along before he has gotten up his house, stables and corrals, and the dry weather sets in before he fairly gets started breaking, and the result is he loses a whole year.

Outfit Required.
Let us suppose then that the new settler has moved onto his claim in October, has gotten his building well out of the way and is ready to start in breaking by the middle of March, or by the first of April at the latest. His horses should have been grained all winter, and thus be in good shape for a good spring's work. He should have at least four good 1,400-pound horses to put a 14-inch sulky plow, and five would be better; he would thus have an extra horse to change off with and run his seeder. He should plow shallow, say 2½ to 3 inches, if his sod is tough, and should roll each half day's breaking before leaving the field, so as to secure a sod mulch and conserve all the moisture that may fall during the spring and summer. He should count on getting 60 days' breaking during April, May and June, besides

doing the other work needed to be done. If he averages 2½ acres per day and attends to the other work that must be done to put in a crop he will do well. This should give him 150 acres broken up and leave him 10 acres wild pasture on his homestead, which will be all that he will need if he follows "soiling methods" of handling his livestock. The plan as here outlined presupposes that the settler has bought ten grade Jersey heifers, bred to calves in March, and ten Doroc Jersey gilts, bred to pigs in April, out with him in his car; also brought corn enough with him to run him through the first winter and spring. His horses he had better purchase where he locates, as horses brought from the states do not do well the first season and will not stand up to the spring work like horses that are acclimated.

What Crops to Put In.
Now as to crops to be put in to take care of the amount of livestock above described. In the first place, on the first breaking, artichokes should be dropped in every second furrow close up to the edge of the sod. Two furrows should then be plowed and another row of tubers planted. The rows would then be 28 inches apart, which would give them plenty of room. The sod should be rolled so as to make a perfect sod mulch, and the pulverizer run over it once, which is all the attention the crop will need, as there will be no weeds the first season. At least five acres of the very first plowing should be put into artichokes and the next ten acres should be put into potatoes. Under suitable conditions the

field will run from 50 to 150 bushels per acre.

The next crop to put in is Canadian peas. For these the sod should be single disked. Twenty-five acres of peas sown broadcast and then disked in for hay and then 25 acres that are intended to thresh should be drilled in with a Planet Junior seeder, driven by a single horse. Twenty-five acres should be put in roots, such as sugar beet, turnips, carrots and rutabagas. Five acres should next be put in soy beans. Twenty-five acres can then be put in bald barley. Ten acres can be put into macaroni wheat, and last 20 acres should be seeded to alfalfa. A good stand of alfalfa can be gotten on sod just as easy as a stand of flax. The seed bed for this latter should be thoroughly prepared by disking and harrowing, and the seed drilled in and harrowed at once, after which it must not be interfered with by harrowing, as the plant is very tender and is easily broken off. It will not furnish much forage the first year, and hogs and cattle and horses must be kept off it. The chickens will, however, enjoy it and repay in abundant eggs. The second season it will furnish a soil crop for cows and hogs during the summer and hay for winter. In this connection I want to say that the Canadian peas will furnish all the soil crop needed the first year. The land that has been in roots and peas can be back set in the fall and farmed the second year the same as if it had been summer fallowed. This would give nearly 90 acres the second season for barley or macaroni wheat. The 30 acres of barley and macaroni wheat land, which should be fall plowed, can be used for roots, peas and tubers the second season. By growing a succession of inter-tilled crops the land can be cropped every year, or at least three crops out of four years can be grown successfully. After the first year, however, all root crops, peas and beans should be drilled in rows, so they can be tilled.

What Returns May Be Expected.

Let us see what returns should be reasonably expected from 160 acres the first year. First, as to the amount of foliage to be raised the first year:

Twenty-five acres of Canadian peas cut for hay would yield five tons per acre, making 125 tons, worth at the lowest \$5 a ton, or \$625. Twenty-five acres of peas, left to ripen, would yield seed worth \$375, and some hay. Five acres of soy beans would yield seed worth \$125. Five acres of artichokes would yield, at a low estimate, 75 bushels, and ten acres of potatoes would yield a similar amount. The fifteen acres of tubers then would give 1,000 bushels, worth 50 cents a bushel or \$500.

Five tons to the acre would be a low yield for the root crops, and as twenty-five acres were to be put in this character of crops, and they are worth \$5 per ton for feeding livestock, the roots alone would give, say, \$625.

The barley would yield twenty-five bushels on sod, making 625 bushels, worth 75 cents a bushel, or \$400; and the ten acres of macaroni wheat would yield 250 bushels, at 60 cents per bushel, or \$150. The alfalfa would not yield any cash returns the first year.

The secret of success the first season lies in shallow plowing and immediately rolling the sod, so as to form a sod mulch that serves to conserve the moisture and makes success possible the first year.

By following out a system as above outlined the new settler can make good the very first year, and by the third year he will be ahead and ready to buy out his less provident neighbor, who is depending on grain crops alone.

SUCCESSFUL DRY FARMING

By Mr. E. C. Cooley of Bozeman, Montana.

The "old timer" says dry land farming is a failure except in occasional good years. This is chiefly because and greed has led men to spread over more territory than they can till well. I know a farmer in Montana who was nearly "all in" so far as credit and expectation of paying for his land went. Three years ago he didn't know whether his creditors were going to let him go on or sell him out. He got a Campbell's Soil Culture Manual, studied it, bought more horses and harrows and began to follow its teachings. In 1907 he got 50 bushels of winter wheat per acre on 700 acres and in 1908 he got 46 bushels per acre on 300 acres, and made \$14,000 above expenses.

Four harrowings last May and June increased his crop 19 bushels per acre over that of his neighbor who followed Campbell up to that point but hadn't the nerve to draw his young grain. He attributed his success to thoroughness,

in conservation of moisture, preparation of seed bed, and harrowing his grain in the spring.

The old method of plowing to a depth of two or three inches, leaving the land to dry out or grow weeds, careless seeding and neglect, do not merit success likely with that style of farming on unirrigated lands. Dry land farming in order to succeed means better farming. Where the work is done intelligently and diligently and done at the right time there are too many shining examples of splendid harvests on Montana dry lands to warrant the opinion that they can not be successfully farmed. To make these lands produce good crops observe these points:

1. Water is essential.
2. You can store water by tillage.
3. Seven to ten inches more water is found underneath a surface which has been summer tilled than beneath an untilled surface adjoining.
4. Plow five to six inches deep.
5. Harrow immediately after plowing, before the furrows dry out.
6. Keep a dust mulch by harrowing during the summer. Don't let weeds grow and waste the soil water.
8. Harrow the grain in the spring.

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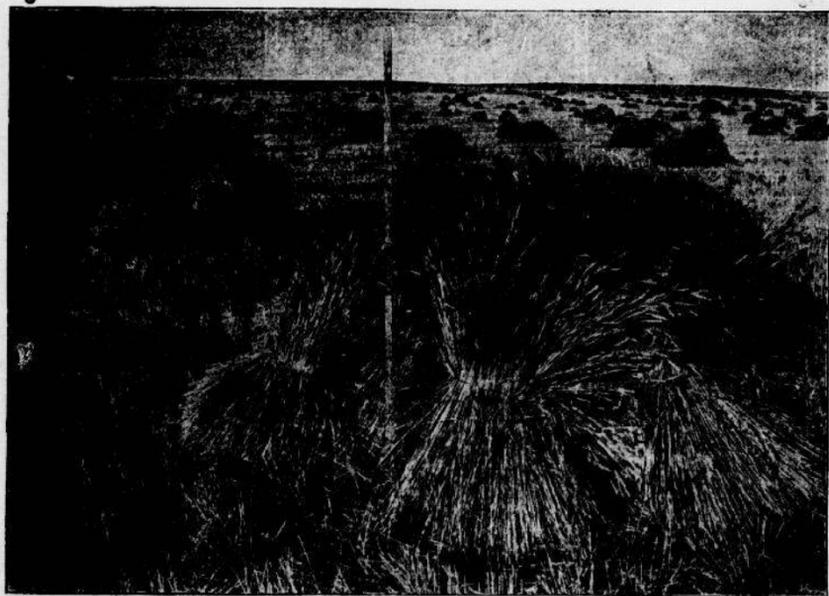
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Field of Turkey Red Winter Wheat, 1908 Crop, 250 acres raised at Broadview Farm, 17 miles south of Lavina, Montana, by W. X. Sudduth. This field averages thirty bushels to the acre.