Bulletin No. 11 - Crop Report for 1892

University of Wyoming Agricultural Experiment Station

Follow this and additional works at: http://repository.uwyo.edu/ag_exp_sta_bulletins

Part of the Agriculture Commons

Publication Information


This Full Issue is brought to you for free and open access by the Agricultural Experiment Station at Wyoming Scholars Repository. It has been accepted for inclusion in Wyoming Agricultural Experiment Station Bulletins by an authorized administrator of Wyoming Scholars Repository. For more information, please contact scholcom@uwyo.edu.
UNIVERSITY OF WYOMING.
Agricultural College Department.

Wyoming Experiment Station,
Laramie, Wyoming.

Bulletin No. 11.
February, 1893.

Crop Report for 1892.

By the Director and Superintendent Laramie Farm.

Bulletins will be sent free upon request. Address: Director Experiment Station, Laramie, Wyo.
Wyoming Agricultural Experiment Station.

University of Wyoming.

Board of Trustees.
Hon. Stephen W. Downey, President, Laramie, 1897
Grace Raymond Hebard, Secretary, Cheyenne, 1897
Hon. Edward Ivins, Treasurer, Laramie, 1893
Augustine Kendall, Rock Springs, 1893
Hon. John D. Loucks, Sheridan, 1895
Mrs. Mattie Quinn, Evanston, 1895
Rev. Ethelbert Talbot, Laramie, 1893
Hon. Charles L. Vagner, Carbon, 1893
Hon. Edward T. David, Casper, Ex-Officio
State Supt. Stephen T. Farwell, Ex-Officio
President A. A. Johnson,

Agricultural Committee.
E. Ivins, Chairman, Laramie
S. W. Downey, Laramie
C. L. Vagner, Carbon

President of the University of Wyoming.
A. A. Johnson, A. M., D. D.

Station Council.
A. A. Johnson, Director
G. R. Hebard, A. M., Secretary
B. C. Buffum, B. S., Horticulturist and Meteorologist
J. D. Conley, Ph. D., Geologist
Aven Nelson, A. M., Botanist
F. J. Niswander, B. S., Entomologist
E. E. Slosson, M. S., Chemist

Superintendents of Sub-Stations.
LANDER EXPERIMENT FARM, Jacob S. Meyer
SARATOGA EXPERIMENT FARM, John D. Parker
SHERIDAN EXPERIMENT FARM, James A. Becker
SUNDAENCE EXPERIMENT FARM, Thomas A. Dunn
WHEATLAND EXPERIMENT FARM, Martin R. Johnston

Wyoming University Experiment Farm, F. J. Niswander, Sup't
Wyoming University Experiment Grounds, The Horticulturist in Charge
As the State of Wyoming is situated on the high, table lands, and among the great mountains of the West, little is known of its agricultural possibilities. In fact, eastern people regard Wyoming as a great arid region, given up entirely to mining and live stock industries, and not capable of producing farm crops and garden vegetables sufficient to support its own population.

This opinion is a great mistake, and far from the truth. Wyoming has great agricultural possibilities. Many of the lands at the lower altitudes are exceedingly fertile, and only need the magic touch of water by irrigation and the devoted labor of the intensive farmer to yield rich and profitable results. The agricultural resources of Wyoming are capable of supporting a large population. All that is needed is capital to develop the land by utilizing the water of our mountain streams. Experience and observation confirm the opinion that there are no better investments in the West than the development of lands by irrigation.

Never failing crops and a ready market insure great prosperity to the farmer, while the mountains and hills furnish an abundance of splendid grazing lands for his live stock.

The Annual Crop Report, made up from the records and results of the six Experiment Farms and published in
bulletin form, is to show the agricultural resources of the State and point out, by actual experiments, the best varieties of farm and garden crops suited to this climate and altitude. We aim, also, to give the yield per acre, showing to what extent such crops are profitable. Failures, also, are noted and causes given.

It is hoped, therefore, to make this Annual Bulletin of great value to the Wyoming farmer.

It is very difficult to write up this Bulletin from the field notes and tabulated results of the six Experiment Farms. We aim at scientific accuracy, but for many causes, beyond our control, do not always reach our ideal. By an improved and better method for records and blanks for reports we hope to make the Bulletin on Crop Reports for 1893 far superior to the present one.

However, the year of 1892 has been a successful crop year, as shown by the following "Statement of Conditions and Results."

This article has been ably written by F. J. Niswander, Superintendent of the University Experiment Farm. The value of this Bulletin is due to his pains-taking care in compiling and writing up the results from the tabulated reports of the various Farm Superintendents.
STATEMENT OF CONDITIONS AND RESULTS.

F. J. NISWANDER.

During the past summer the Experiment Station has conducted a number of experiments in the growing of crops at the various Sub-Stations, located in the different portions of the State. These experiments have been carried on with a view toward assisting ranchmen and others interested in agricultural pursuits, by determining the best varieties to be grown in the different localities.

The Experiment Station situated on the Pioneer Canal, near Laramie, has an elevation of 7,000 feet. The experiments are carried on at this elevation with a view toward determining those crops best adapted to the soils, climate and elevation of similarly situated localities. The other Stations range in altitude from 4,000 feet at Sheridan to 6,500 feet at Saratoga.

The same crops and varieties, with a few exceptions, were grown at all the different Stations, thus increasing the value of the test and adding to the accuracy of the experiment. Those experiments which seemed to be failures in 1891 were repeated in 1892, but on a much smaller scale than during the previous year, while those whose success seemed assured were repeated on a somewhat larger scale to determine, if possible, how profitably the crop can be grown. While all these experiments were carried on upon limited areas it is a well known fact that upon larger areas the cost of producing a crop is proportionately lessened, while the yield, to a certain extent, is
somewhat decreased. Allowance should therefore be made in estimating the probable cost and profit to be derived by growing certain crops.

Early in June the crops on the Laramie Farm were injured by the breaking of the Pioneer Canal, the heavy snow causing an overflow which swept across the Farm, uncovering and washing away quite a large per cent. of the seeds which had been planted. This, together with the late season (no work being done until the last of April), tended materially to cause a decrease in the yield and acreage, as well as shortening the period of growth. The heavy frosts came as early as August 22, thus giving only a four months’ period of growth, a fair period of growth being on an average at least five months.

At the Saratoga Station a great amount of damage was done because water could not be obtained at the time the crops needed it most. This was caused by the breaking of the dam in the Platte River, from which the irrigating ditches of this section are supplied. Up to the time of the breaking of the dam the crops looked promising and profitable yields were expected. The large flume conducting water to the Station Farm was blown down, which shut off the water supply.

At Lander a cloud-burst in the mountains completely deluged the Farm, destroying crops, ditches, and otherwise doing damage to the experiments planned for the year.

At Sheridan the season was unusually late and the time of planting was delayed by the non-arrival of seeds, which had been ordered for the Farm.

The season at Wheatland was backward and crops could not be seeded until late in the season.
Crop Report for 1892.

The Sundance Farm has no artificial supply of water, and the unusually dry season aided in decreasing the yield and retarding the growth of the young plants. Many experiments were destroyed by drought.

CEREALS.

The soil and climatic conditions of Wyoming are especially adapted to the successful growing of the cereals. Many of the hardier varieties can be grown with profit. At present this industry is not extensive, being confined principally to small plots among the ranchmen, although it promises to be one of the leading crops of the Wyoming agriculturist.

WHEAT.

Wheat has never been found growing wild, and must necessarily be a cultivated plant. There are certain conditions concerning its cultivation and growth which are favorable, other conditions being equal, to increase the yield per acre and make the crop more profitable. These are:

SOIL.

Wheat, in order to produce a good crop, must have a good fertile soil. It need not be so rich that the entire vitality of the plant is spent in producing a luxuriant growth of straw, but that a good stand of fair height be secured with sufficient strength to prevent lodging. For winter wheat the soil should be rather dry, as the wheat must remain in the ground during the frost and snow of winter, the thaws and freezing of spring, as well as receiving the cold rains of spring and the melting of the snows of early summer.
CULTIVATION.

The object of cultivation is to stir and pulverize the surface of the soil that has been hardened by the melting snows and packed by the rains. There is no soil too fine, as the finer the surface soil the more easily will the moisture be retained for the roots. In a thoroughly pulverized soil the air has free access to the roots of the plant and the organic matter is more readily decomposed.

The plowing need not necessarily be deep, but the thorough pulverizing of the surface is essential. The subsoil may be compact, not baked, but firm. Wheat ground is seldom worked too well at the surface, but may be too deeply worked.

If the ground, after plowing, is lumpy and turns over in large clods, it may be put in good condition by the use of a disc harrow, which cuts and pulverizes the large lumps. If still too rough for the use of a drill, a roller may be used to advantage and the clods crushed; then, by the use of a smoothing harrow, the surface soil ought to be in a finely pulverized condition and ready for seeding. A good and well prepared seed-bed will feel firm, yet yielding, when a person walks over it; no chuck-holes, where one foot disappears, ought to be found. Too much attention cannot be given to the preparation of the land for the raising of cereals.

TIME OF SEEDING.

Now that the seed-bed is prepared, the water from the irrigating ditch may be turned on, if not irrigated before plowing, for a sufficient length of time to wet the soil and furnish enough moisture for the germination of the seed; or, after the seed has been sown, it may be irrigated, providing the fall and amount of water are not so great
as to wash away the seed. Both methods have their advantages and are of equal importance, as the circumstances warrant. The amount of seed per acre varies from one bushel to two, and even more. A bushel and one-half to the acre is sufficient to give a thick, heavy stand and secure a good yield, other conditions being favorable.

For winter wheat the seed should be sown from the middle of September to the first of October, the time ranging, owing to the conditions of weather, soil, etc.

For spring wheat the seed may be sown as early as the weather and soil will permit; the earlier the better. The time of harvesting varies with the conditions of the weather and ripeness of the grain, usually from the middle of August to the first of October. Grain should not be allowed to stand very long after ripening, as it dries so rapidly that it shells very easily and is a loss to the grower. If cut before ripe it is apt to shrink and lose in weight.

The preparation of the ground, its cultivation, etc., for oats, barley, rye and flax* are similar to that of wheat and may be safely followed as a guide in the raising of these crops.

VARIETIES.

The following varieties were grown on the Experiment Farms during the past season, and have been more or less successful. They are recommended to the ranchmen as worthy of trial, as it is thought that the tests given them warrant us in presenting them as the best varieties to be grown. Perhaps others are as good, if not superior, but we have not yet tested their merits.

*Flax is not a cereal, but is considered under this head for convenience.
LARAMIE EXPERIMENT FARM.

WHEAT.

Winter wheat proved a failure. The severe winter was too much for it and the experiment has been abandoned.

Of the varieties of spring wheat the following were grown:

Wellman’s Fife, which gave the largest yield, twenty-six bushels per acre; Australian Club, twenty-one and a half bushels; Improved Fife, Saskatchewan Fife, White Russian, Chili and Velvet Chaff Blue Stem. The last named variety did not mature, as the frost of August 28th injured it. Another week would have been sufficient to have matured the grain. It was shriveled and shrunken.

RYE.

The winter rye yielded fifteen bushels per acre. This piece of rye received no water, except the rains during the season of 1892, which, taken into consideration, is a splendid yield. Of the two varieties of spring rye grown, the Northern proved the better yielder, giving twenty-two and a half bushels to the acre. This, like the winter rye, was not irrigated. The Eastern spring rye also gave a fair yield.

BARLEY.

Of the different varieties of barley grown, the Man- shury proved the best. The other varieties grown were Vermont Champion, Highland Chief, Two-Rowed Duck Bill, Black Barley and Hulless. Any of these may be grown with profit, but preference should be given to the four-rowed varieties—Vermont Champion and Man- shury.
OATS.

Oats have proved to be large yielders and a valuable crop to ranchmen on the Laramie Plains. The following varieties are recommended: Excelsior, Welcome, White Russian, Early Archangel, Henderson’s Clydesdale and Golden Giant Side. The Black Tartarian may also be mentioned, as it is grown by several ranchmen, who report large yields.

FLAX.

Only one variety of flax, New Russian, was grown, which produced nice, plump seed and a fibre of good length.

LANDER EXPERIMENT FARM.

WHEAT.

At Lander winter wheat did well. The following are the varieties giving the best returns: * Red May, Fulcaster and Fultz. Of the spring varieties Saskatchewan Fife and Velvet Chaff Blue Stem are to be recommended.

RYE.

Winter rye and spring rye grew well, giving fair yields as well as producing a superior quality of grain and an excellent quality of straw.

BARLEY.

The following varieties are to be recommended in their order: Vermont Champion, Manshury, New Black, Highland Chief and Hulless. Had it not been for the heavy floods the yield would undoubtedly have been far beyond that of any of the other Stations.

*The number of bushels per acre cannot be computed from the crop record sent to the Director. Only the amount on hand was reported.
OATS.

Early Archangel and Golden Giant Side are each of excellent quality, and it is difficult to say which is the best for this locality.

SARATOGA EXPERIMENT FARM.

WHEAT.

No winter wheat was grown at this Station. The following varieties of spring wheat have been given a trial and are to be selected, as they have proved successful beyond our expectations: Saskatchewan Fife, Chili and Velvet Chaff Blue Stem. The last named variety has been a decided success and produces a nice, plump berry of good color and excellent milling properties.

RYE.

Both the winter and spring varieties gave good yields and are considered a paying crop.

BARLEY.

The following varieties were given a thorough trial, and are considered as excellent ones from which to choose by those desiring to raise a successful crop: Duck Bill, Okshots, Vermont Champion, Hulless, Highland Chief, Manshury and the New Black. Of the hulless varieties, New Black and Hulless gave the largest yields, while of the hulled varieties, Vermont Champion and Manshury are considered the best producers.

OATS.

This farm paid especial attention to the raising of oats during the past season. The following varieties were
grown: Welcome, Black Tartarian, White Bonanza, Hopetown, Early Archangel, Golden Giant Side, Wide-awake and Henderson's Clydesdale. These were all very heavy, none weighing less than thirty-six pounds per bushel, while each of the several varieties weighed as high as forty-three pounds per bushel, among them being Wideawake and Henderson's Clydesdale.

BUCKWHEAT.

Buckwheat, at this Station, proved to be a profitable crop, a yield of fifty-three bushels to the acre being the result. It matured in ninety-three days, the Japanese variety being the one grown.

SHERIDAN EXPERIMENT FARM.

WHEAT.

Winter wheat at this Farm yielded twenty-seven bushels per acre, demonstrating the fact that this section is especially favorable to the growth of winter wheat. Fultz, May and Fulcaster are suggested as varieties adapted to this locality by the experiments of 1892. Of the spring varieties, Okanagan Valley, with a yield of twenty-four bushels per acre to its credit, is especially desirable. Other varieties recommended are Wellman's Fife, Saskatchewan Fife and Velvet Chaff Blue Stem. Polish Wheat, commonly called Mammoth Rye, produced eighty-three bushels per acre.

RYE.

Winter varieties are not so prolific as the spring varieties, producing only eighteen bushels per acre to thirty bushels of Northern Spring.
BARLEY.

Of the varieties of barley grown, Vermont Champion produced the greatest number of bushels per acre, yielding thirty-six bushels, while the other varieties vary from thirty-five to twelve bushels per acre. Manshury and the two-rowed Duck Bill are considered as excellent crop producers.

OATS.

The following varieties of oats were grown: Probstierre, Clydesdale, Welcome, Hopetown, Tartarian, White Belgian (which yielded forty-three bushels per acre), Early Archangel, Golden Giant Side and Wideawake. Any of these may be relied on as crop producers and are recommended for this locality.

FLAX.

New Belgian produced twenty-one bushels of seed. The fibre was of good length. The New Russian did not produce as much seed per acre.

SUNDANCE EXPERIMENT FARM.

WHEAT.*

Only spring wheat was grown at this Farm. The following varieties are suggested as suited to this section: Velvet Chaff Blue Stem, Saskatchewan Fife, Whittington, Niagara, Red Oregon and Northcotes Amber.

RYE.

The Northern Spring variety was the only one tested.

*It is impossible from the crop record to determine the acreage or the yield per acre, as the report is incomplete.
While other varieties may be readily grown, this has given satisfaction and is of good quality.

BARLEY.

The following varieties of barley were grown and are to be recommended: Manshury, Highland Chief, New Black, Vermont Champion, Hulless and two-rowed Duck Bill.

OATS.

The following varieties have been found well adapted to this locality, producing bright, clean straw and a good quality of grain: Early Archangel, Golden Giant Side and Black Tartarian.

WHEATLAND EXPERIMENT FARM.

WHEAT.

At this Station wheat was grown equal in quality to that of any of the great wheat producing States. The yield was far above the average. A good market and this section will soon equal any wheat producing State in its output of grain. Only two varieties of winter wheat were grown—May and Fultz, producing twenty-four and twenty bushels per acre, respectively. The spring varieties gave large yields and no doubt will prove more profitable. Of the three varieties grown—Saskatchewan Fife, Velvet Chaff Blue Stem and White Russian—the last named variety produced thirty-four bushels per acre. The grain is plump and possesses good milling qualities.

RYE.

The one variety of rye, Giant, grown produced twenty-seven and a half bushels per acre.
BARLEY.

Three varieties were grown—New Black, twenty-six bushels per acre; Highland Chief, thirty-two bushels per acre, and Manshury, thirty bushels per acre, all of which are to be recommended for this locality. The grain is plump, of large size and bright, and appears to be excellent for malting and feeding purposes.

OATS.

Only three varieties of oats—Early Archangel, Golden Giant Side and White Russian—were grown. These yielded, respectively, forty-four, fifty-one and forty-three bushels per acre, weighing forty-two, forty-six and forty-two pounds per bushel. This is a remarkable yield from newly broken western land, and only goes to show the resources of our State.

FLAX.

This seems to be one of the most profitable crops grown in Wyoming, producing long fibre and good rich seed. At this Station the New Russian flax yielded thirty-eight bushels of seed per acre, and the New Belgian gave thirty-four bushels per acre.

CORN.

Wyoming is not a corn producing State, although it has been grown with marked success in different portions of the State. Owing to the facts that our seasons are so short, the nights cool and the small amount of rainfall, the raising of corn is not as promising as that of other crops. The small amount of rainfall can be overcome by irrigation,
but the length of season and cold nights are objections which cannot be overcome by artificial means.

When corn is to be grown by irrigation it should be planted in rows three feet apart. If for fodder purposes, drills are better than hills. The same care in the preparation of the ground as for wheat needs to be exercised in order to secure the best returns.

On the Laramie Plains corn has proved a failure, owing to the early frosts, which prevented it from maturing.

At Lander three varieties matured seed. These were Dakota Dent, Minnesota King and Rideout, or Mercer. The period of growth extended from May 24th to October 9th, a period of 138 days.

At Saratoga none of the corn reached maturity, but it was fit for roasting ears by September 11th.

At Sheridan only a few ears matured, not a sufficient amount to warrant the cultivation of corn on an extensive scale.

No corn was matured at the Sundance Farm. This seems to show that corn is not adapted to this section.

At Wheatland a fair yield of the following varieties was secured: Dakota Dent, Rideout and Minnesota King, the yield being thirty-two bushels, forty bushels and twenty-two bushels per acre, respectively, weighing seventy pounds to the bushel, unshelled. This section seems to be the best adapted for the raising of corn of any in the State.

ROOT CROPS.

At no place do root crops do as well as in Wyoming. The soils of the State are especially adapted to the grow-
ing of beets, turnips, rutabagas, carrots and potatoes.* The best soil is a sandy loam, and Wyoming is unusually blessed with such a soil.

PREPARATION OF LAND FOR SEED.

As early in the spring as possible the ground should be plowed to a good depth, say eight inches. Unless the sub-soil is loose, the sub-soiler should be used, making the earth loose, porous and mellow to a good depth. If crops have been taken from the ground the preceding year, a dressing of good fine stable manure will add greatly to the richness of the soil and will more than pay, by the increased yield, for the trouble and time of applying it. After plowing, the harrow and roller should be used in order to break the clods and pulverize the ground, making a good, smooth seed-bed. Having thus prepared the ground, it is now ready for furrowing. The furrows should be about twenty-four to thirty-six inches apart. Throw the earth up in ridges, so that the irrigating water may be carried the length of the furrow between the ridges.

PLANTING.

Sow plenty of seed, as it is easier to thin out than it is to transplant. Then, again, it insures an even time for ripening, as all will be ready for harvest at the same time. Sow the seed on top of the ridges. A small hand seeder, such as a “Planet Jr.” will greatly facilitate the planting of the seed. It may be sown by hand, but the distribution of the seed is not so even.

CULTIVATION.

As soon as the plants reach a suitable size, which will be in from four to six weeks, they may be thinned. This

*Potatoes, while not a root crop, will be considered under this general head.
is rapidly done by using a sharp hoe and cutting at right angles to the row, or they may be thinned by hand. The weeds should be kept down by frequent cultivation, using a horse cultivator or hoe. Frequent irrigation while the plants are small will give them a good start.

Carrots should not be disturbed while growing. Turnips, rutabagas and beets do not suffer handling.

**Harvesting.**

Nearly every farmer has his own peculiar method of harvesting. That of plowing out the roots is used, perhaps, more than any other. A potato fork is an excellent tool for harvesting root crops. After being topped the roots may be thrown in piles, and if left for a day will keep much better than if pitted or placed in the root cellar at once. A convenient pit may be made by digging a circular hole in the ground twelve to twenty-four inches deep, of any desired diameter. Cover the bottom with straw, and place the roots in a pile within the pit. This being done, cover the roots thickly with straw and then with sufficient earth to prevent freezing.

**Value of Root Crops.**

Many stockgrowers object to feeding roots, especially turnips and rutabagas, to milch cows, because of the belief that they give a bad taste to milk and butter. If turnips and rutabagas are kept growing until mature they are not strong or bitter, and may be fed without the least injury to milk or butter. If cows are fed in the morning, immediately after milking, there is not the danger of this taste from turnips or rutabagas. Beets and carrots are preferable as food for milch cows, as the unpleasant taste is entirely avoided.
Carrots are good for horses. Work horses do better on a peck of carrots and a peck of oats than they do on two pecks of oats.

Sheep relish the roots, and there is no doubt but that they are of great benefit when properly fed.

When hay is scarce or of poor quality roots form a good substitute for a portion of the daily ration of stock. In recommending the growing of root crops for stock, we do not advise anyone to make this a specialty, but do advise every ranchman to raise a quantity sufficient to form a portion of the winter food for his stock.

VARIE'TIES.

Laramie Experiment Farm.

The following varieties have proved themselves, on the Laramie Experiment Farm, as worthy of trial, and are recommended to others who wish to test their merits:

Long Island Improved Rutabaga, which produced on one acre over ten tons; Lang's Improved Rutabaga yielded eight and one-half tons per acre.

The beets grown on this Farm were sugar beets, which yielded seven to eight tons. Owing to the overflow of the irrigating canal the yield was lessened, as ten tons is considered a fair crop. The large Mangel Wurzels would produce at least twice as many tons per acre. At least fifteen pounds of seed should be sown to the acre. (See Bulletin No. 9.)

The carrots grown were the White and Yellow Belgian, each of which gave fair yields, demonstrating that they can be grown successfully.

Those varieties of potatoes which proved the best were Early Rose, Polaris, Early Maine and Empire State.
LANDER EXPERIMENT FARM.*

No rutabagas or turnips were grown at this Station as field crops.

The sugar beets were the Klein Wanzleben and Vil-morin’s Improved, both of which promised well.

A number of standard varieties of potatoes were grown on this Farm, any of which will do well with proper cultivation and a fair growing season. Early Rose, Beauty of Hebron, White Elephant and the Early Ohio are given the preference, although any early variety is profitable.

SARATOGA EXPERIMENT FARM.

The root crops at the Saratoga Farm were so injured by drouth that the test, as far as the best varieties to be grown are concerned, is not satisfactory. Rutabagas, turnips, carrots and potatoes were alike unsatisfactory.

The varieties recommended for Lander are suggested for Saratoga.

Sugar beets at this Farm yielded eight tons per acre, with an average of fourteen per cent. of sugar. No doubt under more favorable conditions the yield in tons can be increased at least fifty per cent.

SHERIDAN EXPERIMENT FARM.

This Farm, during the season of 1892, has made an excellent showing in the production of root crops, the soil and climatic conditions being suited to their growth and cultivation.

Two varieties of carrots were grown, the White and Yellow Belgian, producing 310 and 250 bushels per acre, respectively.

*The yield per acre was not reported.
The only variety of rutabaga grown was the Improved Purple Top, which yielded 431 bushels per acre.

Sugar beets did the best of any of the roots, and exceeded the expectations of the Superintendent. The greatest yield was twenty tons per acre and the smallest twelve tons. They were rich in sugar, the *Klein Wanzleben* producing twenty-three per cent. of sugar—no variety yielding less than fifteen per cent.

Of the varieties of potatoes grown, the following are recommended:

Ironclad, Halo of Dakota, Early Ohio, Early Rose and White Elephant. The Bill Nye variety proved a failure, although another season might place it in the front rank.

**SUNDANCE EXPERIMENT FARM.**

Very little can be said concerning the best varieties of root crops to be grown in this section of the State.

Sugar beets yielded from two to seven tons per acre, with an average of twelve per cent. sugar.

No doubt any variety of rutabaga, turnip or carrot will give excellent results.

Of the varieties of potatoes to be recommended are the Early Rose and Pride of the West.

**WHEATLAND EXPERIMENT FARM.**

At this Farm rutabagas yielded eight and one-half tons per acre, the Long Island Improved doing the best. The roots were solid, of good size, and not woody or bitter.

The Superintendent reports that the Yellow Belgian and Improved Long Orange carrots yielded over eight tons per acre. This is a remarkable yield, and clearly

*No report as to the yield and acreage was sent the Director.*
shows that the sandy loam of this section is especially adapted to the production of root crops.

The sugar beets produced from twelve to fourteen tons per acre and were very rich in saccharine matter, yielding as high as twenty-one per cent.

A large number of varieties of potatoes were grown on this Farm during the season, most of them giving good returns. Those which proved the best are Rose Seedling, Mammoth Pearl, Beauty of Hebron and Early Rose. The Bill Nye variety did not do well, a large number of other varieties proving more prolific.

FORAGE CROPS.*

At all the Experiment Farms forage crops were grown, both for pasture and for hay. The following crops are suggested as being suitable for most portions of the State:

Those best suited for hay are Timothy, Alfalfa and Red-Top. The native grasses do the best, and when possible to grow them are the most profitable. Blue Stem, Grama Grass and Blue Joint are the most prolific and nutritious.

At the Wheatland Farm the Superintendent cut from one acre of alfalfa three crops of hay, which, in the aggregate, amounted to seven and eight-tenths, or nearly eight, tons per acre in one season. These were cut July 6th, August 3rd and September 26th.

For pasture the native grasses are the best, although Red-Top, Red Clover and Italian or English Rye grass are to be recommended.

The English Rye grass is a rapid grower, nutritious and hardy.

English Rape is an excellent forage crop, the large, juicy leaves furnishing a large amount of nutriment.

*The subject of grasses and forage plants will be treated of in a future Bulletin from this Station.
GENERAL SUMMARY.

From the crop experiments of 1922 the Wyoming Agricultural Experiment Station recommends the following varieties for the various sections of the State. These recommendations are based upon tests which were made by the Station:

SOUTHERN WYOMING.

- Wheat, Spring — Wellman’s Fife, Australian Club, Saskatchewan Fife, White Russian, Chili and Velvet Chaff Blue Stem.
- Rye, Spring — Northern, Eastern.
- Barley — Vermont Champion, Manshury, Highland Chief, Black and Two-Rowed.
- Buckwheat — Japanese and Silver Hull.
- Flax — New Russian, European.
- Sugar Beets — Klein Wanzeleben, Vilmorin’s Improved.
- Rutabagas — Long Island Improved, Laing’s Improved.
- Carrots — Long Orange, Yellow Belgian, White Belgian.
- Potatoes — Early Rose, Polaris, Early Maine, Empire State.

WEST CENTRAL WYOMING.

- Wheat, Spring — Saskatchewan Fife, Velvet Chaff Blue Stem.
- Rye, Spring Varieties — Northern, Eastern.
- Barley — Vermont Champion, Manshury, New Black and Highland Chief.
- Oats — Early Archangel, Golden Giant Side.
- Sugar Beets — Klein Wanzeleben, Vilmorin’s Improved.
- Rutabagas — Long Island Improved, Laing’s Improved.
- Carrots — Long Orange, White and Yellow Belgian.
- Potatoes — Early Rose, Beauty of Hebron, White Elephant and Early Ohio.

EASTERN WYOMING.

- Wheat, Spring — Niagara, Whittington, Red Oregon, Northcote’s Amber.
- Rye — Northern Spring.
- Barley — Manshury, Vermont Champion, New Black.
- Oats — Early Archangel, Golden Giant Side and Black Tartarian.
- Sugar Beets — Klein Wanzeleben, Vilmorin’s Improved.
- Potatoes — Rose Seedling, Mammoth Pearl, Beauty of Hebron and Early Rose.

NORTH-EASTERN WYOMING.

- Wheat, Spring — Okanagan Valley, Wellman’s Fife, Saskatchewan Fife.
- Rye — Northern Spring, Mammoth (Polish Wheat).
- Barley — Vermont Champion, Manshury, Two-Rowed Duck Bill.
- Oats — Probstriere, Hopetown, Welcome, Early Archangel.
- Flax — New Belgian, New Russian.
- Rutabagas — Improved Purple Top, Lane’s Improved.
- Sugar Beets — Klein Wanzeleben, Vilmorin’s Improved.
- Carrots — Yellow and White Belgian, Long Orange.
- Potatoes — Ironclad, Halo of Dakota, Early Rose, Early Ohio, White Elephant.

NORTHERN WYOMING.

- Wheat, Spring — Okanagan Valley, Wellman’s Fife, Saskatchewan Fife.