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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

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REPORT FOR THE MONTH OF FEBRUARY, 1932.

HAYE:

Precipitation in February amounting to .58 inch, .42 of which came on the last day, was slightly above normal. The temperature departure was 4° above normal with an absolute maximum of 70° on the 27th, which established an all-time record for this month. Persistent strong south-westerly winds during the last week of February removed most of the frost from the ground and melted practically all snow and ice. Soil drifted considerably in some districts west of the station.

Preparation and packaging of seed for nurseries and other experimental plantings was virtually completed, as well as repairing of machinery. The water shortage in Beaver Creek which presented a problem during the first part of the month owing to sub-zero weather was alleviated by the recent thaw. Livestock in general are in good condition.

JUDITH BASIN:

All kinds of weather prevailed during the month of February. The temperature ranged from 16 below zero, the fore part of the month, to 70 above on February 27. The high temperatures that prevailed the last week of the month were accompanied by high winds, which soon melted what snow remained on the ground and caused considerable soil drifting. Soil moisture conditions are very poor and farmers are viewing the coming planting season with a great deal of pessimism.

Winter wheat still remains in fair condition but will need moisture soon to escape damage from soil drifting. Before the warm weather 40 specimen trees of Colorado Blue and Black Hills spruce were transplanted around the buildings and grounds. These trees were removed from the ground with some 200 pounds of frozen soil on the roots, so should start growth readily.

All fallow on the station was ridged with a duckfoot to aid in the control of soil blowing.

Maximum temperature, 70; minimum, -16; precipitation, .29 inch.

SHERIDAN:

The cold weather of the last of January extended over in to the first few days of February. Warm weather prevailed from the 4th to the 11th, which caused the snow to settle considerably, but it did not thaw to any extent in the vicinity of the station. There was considerable thawing at that time from about half way between the station and Sheridan on toward the mountains. Cold weather again prevailed from the 12th to the 19th, after which it was quite warm for the remainder of the month. The mean temperature, 43 degrees, for the last five days of the month equaled the highest previous record for an equal length of time at this station for February. For the entire month the mean temperature was about 3 degrees below the station average for February. Wind movement was slightly below the average. The ground was covered with snow until the last few days of the month, only the remains of drifts being left as the month ended. Precipitation was much below the average.

Considering the amount of snow that melted in a short time, the run-off from cultivated fields was small. There was some washing on the rotation field, especially toward the lower end, but on the other fields there was practically no run-off. Run-off from around the buildings, the shelterbelt and orchard, and from above the station was heavy. The ditch running along the east side of the corral and pasture, which keeps this run-off from the cultivated fields to the east, was taxed to full capacity, even with extra shale filled in on the east bank last fall. Yesterday, February 29, stubble land appeared to be thawed to a depth of from 6 to 8 inches, and was filled with moisture to that depth as much as possible without the water running off.

Maximum temperature, 61, on the 27th; minimum, -19, on the 15th, below zero on 12 days; mean, 20; precipitation, .11 inch.

DICKINSON:

During the first three weeks of February temperatures were about normal, fifteen days having below-zero temperatures recorded, with a minimum of 18 degrees below zero on the 14th. The last week of the month had temperatures well above normal with a maximum of 36 degrees on the afternoon of the 27th. This raised the maximum from the previous record of 63 degrees. The mean temperature of 14.7 degrees was 1.6 degrees above normal, but 13.9 degrees below the mean of February, 1931. Precipitation amounted to only 0.23 of an inch.

All of the snow was gone from the fields by the 27th, but a few drifts remained in the trees.

Winter wheat and winter rye have come through the winter to date in excellent condition.

MANDAN:

Agronomy

The month of February was cold for the most part. There were, however, no extremely low temperatures. The Weather Bureau records at Bismarck show the mean temperature was 16 degrees, as compared with 30 degrees in 1930. The maximum temperature for the month was 65 degrees on the 27th. This is the highest temperature recorded for February during 58 years of record at Bismarck. The minimum temperature was -18 degrees on the 3rd. The snowfall for the month was 2.5 inches and the precipitation was .019 of an inch or about half normal.

The last week of the month was extremely mild. Practically all the snow melted, and a large amount of it soaked into the ground. The Heart River came up rapidly but did not overflow.

The grazing experiment which is conducted in cooperation with the North Dakota Agricultural College completed its sixteenth year in 1931. The following table shows the gains of the cattle on the various pastures for the period they have been in operation:

<u>Pasture</u>	<u>Number of years grazed</u>	<u>Average number of</u>		<u>Average gains for period</u>	
		<u>steers grazed</u>	<u>days grazed</u>	<u>pounds head</u>	<u>per acre</u>
100 acre	16	10	150	306.2	30.6
70 acre	16	10	150	306.9	43.9
50 acre	16	10	144	239.8	48.0
30 acre	16	10	113	168.3	56.1
Rotation (70-acres)	14	14	150	271.9	54.4
Brome grass (27.2) *	9	9.33	117	226.2	77.6
Sweet clover (10 acres) **	2	6.13	90	202.0	123.8
Brome grass (10 acres) ***	3	6.83	93	214.2	146.3

* Average acres per season.

** Grazed in 1926 and 1928.

*** Formerly sweet clover pasture.

BELLE FOURCHE:

The first three weeks of February were comparatively cold, sub-zero temperatures being recorded on nine days, but the remainder of the month was unusually warm, and the mean temperature for February was one degree above normal. The last week in the month was much warmer than any other week for February on record at this station. Maximum temperatures of 67 degrees and 69 degrees occurred February 26 and 27, respectively, and are next to the highest temperatures recorded in February during the past 24 years. The temperature remained above freezing for six consecutive days, the daily minimum ranging from 34 to 40 degrees. In no other year since climatic observations were commenced in 1908 has there been more than one day in February in which the minimum temperature remained above freezing, and during the 23-year period preceding 1932 there has been a total of only five days with a daily minimum above freezing.

Precipitation in February was .07 inch and only .40 inch since January 1, which is more than 50 per cent below normal. Most of the snow received during December and the following months was still on the ground March 20, but it was so badly drifted by high winds that very little was retained on cultivated fields. The abnormally warm weather the latter part of February caused the snow to melt rapidly and practically all of it had disappeared by March 1.

The soil of farm fields remains almost as dry as in the previous fall, except in isolated spots where snow drifts were located, and crop prospects for 1932 at present are not encouraging. Winter wheat and rye which germinated last fall are coming up, and fair stands may be obtained on the various plots if sufficient moisture is received at an early date. A high wind February 29 caused a moderate amount of soil drifting which did more or less damage to winter wheat on the plots of the continuous cropping series.

Maximum temperature, 69; minimum, -13; precipitation, .07 inch.

ANDMORE:

February was a favorable month for livestock. Warm weather commencing February 5 removed much of the snow cover by the 10th of the month, and permitted grazing on much land that had not been accessible for feeding. A temporary cold spell lasted from the 12th to the 19th of the month. Beginning with the 19th the weather continued warm until the end of the month. All snow has now disappeared except from draws.

Ardmore, continued:

The stock water situation is better than it has been in several years. Nearly all dams are now full. The two lakes at Ardmore are filled nearly to capacity. Hat Creek has been high for the past two weeks but the ice is still holding.

Winter grains appear to be in good condition and are commencing to green up. Crested wheatgrass has also commenced growth. Alfalfa is commencing to grow in spots where there was a good snow cover.

The plots in the February seeding experiment were seeded on February 23. This is about a week later than in other years.

The steers on feed were shipped to Omaha on February 27. They brought six cents per pound. Individual carcass weights and dressing percentages were obtained at the market.

Farrowing commenced on February 22. To date six litters averaging eight pigs per litter have been farrowed.

The maximum temperature for the month was 69 degrees on February 27. The minimum temperature was -7 on February 4. The precipitation for the month was .07 inch. Not more than .03 inch fell on any one day. Average data for the month are as follows: maximum temperature, 40.6; minimum, 15.5; wind velocity, 7.0 miles per hour. The highest average wind velocity for 24 hours was 15.2 miles on February 13.

ARCHER:

The weather has been mild during most of the month. The minimum temperature has been as low as zero or near zero twice. The last 10 days have been very mild with warm bright sunshine which has caused the winter cereals and early grasses to send up green shoots. During the forepart of the month there were a number of snow flurries resulting in a total precipitation for the month of .20 of an inch. The wind has not been severe and the soil in the winter wheat fields is in good condition.

Station activities have consisted of routine daily and granary work and some machinery repair and overhauling. Office work has consisted of preparing Cereal report and compiling specific data for the University of Wyoming. The usual quota of late winter and early spring letters are arriving.

Maximum temperature, 65; minimum, 0; precipitation, .20 inch.

AKRON:

February was characterized by mild sunny weather which made it a pleasure to be engaged on the outside. A blizzard of slight intensity was experienced the 3rd. This storm was apparently more severe west of here towards the mountains. A wind of considerable intensity prevailed on the 10th and 11th, the 48-hour average velocity being 16.6 miles. This caused some soil blowing over the countryside. Sleet and snow the afternoon and night of the 16th netted .16 of an inch precipitation.

About 35 farmers gathered here the 4th, not having received word of the calling-off of the Feeders' Day. Fortunately enough College and commission farm officials were here to improvise a satisfactory program. About 200 farmers gathered at the station the 18th for the Fourth Annual Feeders' Day. The eleven lots of lambs and the eleven lots of pigs attracted the attention of all those present. The afternoon program at Akron was highly appreciated by the crowd.

Maximum temperature for the month, 70, on the 27th; minimum, zero, on the 3rd; precipitation, .25 inch.

Press releases from the Colorado Agricultural College and Experiment Station for February 10, 1932, on the cooperative-feeding experiments at the Akron Station contain the following statements:

"Russian thistles, an abundant weed pest on eastern Colorado farms, was ground fine and fed as a roughage (to lambs), and found to be worth \$4.58 a ton in feed replacement value.

"It was also proved for the first time in Colorado that bean straw is equal to sorgo fodder cane when they cost the same, for fattening lambs.

"In the first experiment of the kind in the west, it was proved that flax, a home-grown protein feed, is not poisonous, although many believe it is. Pigs fed flax at the rate of four-fifths of a pound daily showed no ill effects.

"In the first experiment of the kind in Colorado, wheat showed that it was equal to corn, pound for pound, when fed to pigs.

"Three years' tests prove that when hog millet is ground extremely fine, it is practically equal to corn for fattening pigs."

NORTH PLATTE:

The month of February for the most part was mild and open. Temperatures ranged from -6 to 70. The mean at North Platte was 26.6 degrees, which is 6.2 degrees above normal. Below zero temperatures were recorded on only three days. There was .39 inch of precipitation in the form of snow which remained on the ground about eight days. Mild temperatures during the last four days of the month removed all frost from the ground. Field work in preparation for spring wheat seeding was begun on February 29. Winter wheat is sprouting but none has emerged. Kochia Scoparia seed began germinating profusely on February 24.

GARDEN CITY:

Weather conditions during February were open, temperatures during the first ten days of the month were cold and near zero part of the time. The last twenty days of the month were quite warm, in fact too warm for February. Wheat began to show considerable greening up and started growth. Stands that looked very poor improved considerable, but unless exceptional stooling takes place many fields will have light stands, possibly 60 to 70 per cent of normal. General conditions of wheat fields in this area are not much if any above 60 per cent of normal.

Soil moisture is adequate for early spring growth and spring tillage work. The ground is quite ash and loose on the surface and some damage from soil blowing has already occurred, although we have had very little windy weather.

Precipitation for February totaled .33 inch, or .49 inch below the 22-year average. The total precipitation this year for January and February amounted to 1.37 inches, or .27 inch above the long-time average for these two months.

Farmers are seeding spring grains. Early spring weed growth is starting in many places. Small grain plots were seeded on the dry-land station yesterday, March 3. Many elm trees are in full bloom. To-day, March 4, winter weather has again made its appearance, a minimum temperature of 16 degrees above zero was recorded at eight o'clock, accompanied by a hard north wind and driving snow. Maximum temperature, for the month, 80 degrees on the 28th; minimum, 2 above on the first day of the month.

HAYS:

The first half of the month was characterized by cloudiness and occasional light rains and snow, while the latter half was generally clear and warm, the temperature averaging about 17 degrees higher. On the 28th the maximum temperature recorded was 82 degrees, the second highest on record. The snow left over from previous month together with the additional snow and rains made the fields very soft and country roads nearly impassable after the frost disappeared. Very little wind movement occurred during the month.

No field work of any kind was done during the month due to wet fields and although the surface soil soon dried off the soil beneath remained too wet and sticky to work satisfactorily.

With the advent of warm weather winter wheat fields and the plots on the project rapidly greened up and some growth took place. Fields that looked bare from the roadside now appear green on the better methods of seed-bed preparation. The wheat has come through the winter in good condition and no injury from winter killing is apparent. A few fields are being pastured and with continued favorable weather more pasturage will become available, thus relieving the feed shortage to some extent.

Maximum temperature, 82; minimum, -2; mean maximum, 47.5; mean minimum, 24.6; mean, 36.0; precipitation, .50 inch, below normal .33 inch.

TUCUMCARI:

Station work this month has consisted chiefly of fence building, making of wire heading baskets, and prevention of soil movement. Wind velocity has average only normally high, but several periods of very high movement occurred.

The month was exceptionally warm, the second warmest on record, while precipitation compared closely with the long-time average. The minimum temperature for the past week was 26 degrees, with a maximum of 81 on the 28th.

In 1930 and again in 1931 February was warmer than the following March and the same condition is probable this year. Such seasons prove disastrous to the few, small orchards in this locality

Tucumcari, continued:

Chinese elms are budding, fruit trees are far advanced, and weed seedlings in sheltered spots are growing rapidly.

Rabbits have been very numerous this winter and in spite of frequent forays on them, damage to young trees has been rather severe. They have not attacked unprotected mulberry seedlings and have injured comparatively few Chinese elm. A large number of the latter were wrapped or have been poison-sprayed, but even those not protected have shown but little injury. Rabbit attack on evergreens, however, has been very severe. Arborvitae have been most seriously injured, although seedling pines less than one foot tall also have been severely attacked. Poison paints are applied to these with difficulty and even those painted three times have been injured.

Maximum temperature, 81; minimum, 15; mean for month, 47; precipitation, .50 inch; average wind velocity, 6.0 miles per hour.

The lowest recorded temperature in 1932 to date was 8 above zero on January 8, an unusually high minimum.

DALHART:

In general mild weather prevailed during February. The lowest temperature of 13 degrees was recorded during the first few days of the month. The maximum temperature of 79 degrees was recorded on the 27th. The last week of the month was especially mild with high mean daily temperatures. Spring growth really started during the last seven days of the month. Winter wheat and rye made no growth during the winter previous to this time, while the growth more than doubled during the past week. Chinese and American elms are in full bloom now. Both leaf and flower buds have started swelling to color on the early plants. Lower temperatures are needed to retard growth at the present time.

There is not sufficient moisture in the soil, except on fallow, to sustain a vigorous growth of wheat or rye at this time. There was apparently sufficient moisture in the surface soil to permit germination of oats and barley which were seeded during the past week.

Pruning of fruit trees, shrubs, and grape vines is occupying the station force at the present time.

Maximum temperature for the month, 79; minimum, 13; precipitation, .46 inch. There was considerable soil movement on four days during the month.

DIG SPRING:

Weather conditions during the month of February have been very unusual in that the temperatures were mild and the rainfall excessive. There were but four nights during the month when the temperature dropped below the freezing point, and only two when the maximum was below 28. Rainfall during this time was more than has fallen during February in the past 20 years. Precipitation ranging from a trace to 1.17 inches daily was received on nine successive days during the month and totalled 3.81 inches. This may be compared with the 30-year average of .67 inch for the month.

The warm weather together with plenty of soil moisture has caused all of the peach trees and many of the plums to be out in full bloom at the present time. It is probable that these blooms will be killed before the frost-free period is reached.

When the soil was dry enough to work, the lister has been kept busy in the increase fields. Other work has consisted of ginning cotton and pruning the vineyard, shrubs, and hedges around the grounds.

Maximum temperature for the month, 85; minimum, 22; precipitation, 3.81 inches.

LAWTON:

The mean temperature of 49 degrees in February is 6 degrees above the 14-year average as determined from the Lawton Station records.

Fruit trees, deciduous ornamentals, and evergreens that have remained so full of sap all winter, will be severely injured if hard freezes occur late in March or early in April as they did last year. More dead wood was taken from shade trees when recently pruned than in any former year. Practically the entire top was killed in the Paper Leaf Mulberry, and a good many of the Chinese elm had to be cut back rather heavily.

Spiraea, Japanese Quince, and Forsythia were in full bloom by March 1 or a little before while Nudiflorum has been in bloom nearly a month. Apricots and peaches are also blooming quite freely.

Rainfall recorded on 10 dates in February amounted to 1.87 inches. Soil already saturated by excessive winter moisture dried slowly, and only a few days of field work were possible during the month.

Lawton, continued:

Spring oats in the variety test and the rate and date-of-seeding test, and oats and spring barley seeded on the rotation plots February 8 and 9, emerged to good stands February 24 to 26. In the rate and date-of-seeding project it has been possible to seed only two dates so far, February 8 and March 1.

Most of the oats seeding on the surrounding farms will be done several weeks later than last year, and it is quite likely that the acreage will be reduced in view of the fact that liberal supplies still remain in the hands of growers. Seed is quoted locally at about \$0.13 per bushel.

Wheat, winter oats, and winter barley renewed spring growth quite rapidly the latter part of February. Nebraska 28 wheat and some of the winter oats varieties are again attaining sufficient early growth to encounter injury from late spring freezes.

Trimming of small grain plots is about completed, and considerable plowing and disking on rotation plots are in progress. Spring plowing, disking, and spring-tothing on some of the rotation plots are necessary at a much earlier date this year than usual in order to control a vigorous growth of winter grass, and a good many weeds that are already in a thriving condition. The soil has run together this winter and turns up in a rather unsatisfactory condition when plowed.

Alfalfa now has a spring growth of 6 to 8 inches, and sweet clover began to show new growth about the middle of February.

Observation of the growth of Austrian winter peas during the past two winters that have been so favorable to this crop indicates that sufficient winter growth to afford grazing is not at all likely.

The minimum temperature in February was 23 and the maximum was 85.

WOODWARD:

The fore part of February was devoted to cleaning up field work which had been delayed by weather conditions previously. The last of the cotton was picked and sorghums from fields were threshed. From the 13th to 21st fog and rain was of almost daily occurrence and time was devoted to repair of machinery and making of grape cuttings and other plants for propagation the coming season.

Woodward, continued:

The latter part of the month was devoted largely to the digging, sorting and storing of nursery stock for shipment to cooperators.

Aside from a few snappy mornings the fore part of the month the temperatures have been mild. Due to this buds are showing pink and probably will be killed by late freezes. Many flowering shrubs have bloomed two or three weeks in advance of their usual time.

Maximum temperature, 79, on the 28th; minimum, 15, on the 4th; precipitation, .82 inch distributed over seven days.

PENDLETON:

The coldest weather of the winter occurred during February, with a temperature of 9 below zero on the 9th. A temperature of -6 occurred on the 4th. These were the only sub-zero temperatures during the month. Although light snows fell several times during the month, the total snow did not exceed three inches.

Considerable damage was done in the fields of Umatilla County by "run-off". Many fields have countless small ditches washed in them, some of the largest ditches are from one to six feet deep. The major part of the precipitation occurred during the latter part of December, and all the January and February precipitation was lost through "run-off".

Most of the fall wheat in this section was seeded during the first ten days of November, when rains and cold weather halted the seeding. The fall sown wheat did not emerge until the last week in February. The stands are good and the wheat is now growing rapidly.

Maximum temperature, 68; minimum, -9; precipitation, 1.16 inches.

N O T E:

Attention of field men is again invited to the fact that, in submitting manuscripts for approval, to be delivered at meetings or for outside publication, such manuscripts should be submitted to this division in triplicate. One of these copies is retained in this division. Copies in duplicate are then submitted to the Chief of Bureau, with recommendation. When action is taken by the Chief of Bureau, he retains a copy and returns one copy to this division which then returns it to the author submitting request for approval.

In this connection, the following memorandum is again quoted:

"B.P.I. Memo. No. 593.

July 28, 1931.

MEMORANDUM FOR HEADS OF DIVISIONS.

Gentlemen:

In future in submitting papers by members of your staff for approval by the Chief of Bureau for outside publication or presentation at meetings, it is requested that the form letter, a supply of which is enclosed, be used. In requesting permission for the presentation of papers at meetings, such form letter should be attached to and submitted with Form 61, as is indicated in the letter.

Very truly yours,

sgd. K. F. Kellerman

Acting Chief of Bureau."

