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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR THE MONTH OF MARCH, 1935.

HAVRE:

The month was colder than average with a slight excess in precipitation.

The first three days were mild, followed by a week of low temperatures, then fifteen days with the maximum temperature above freezing each day. The month closed with three days with the minimum below 10° . There were however, only three days during the month when the minimum was above freezing. This resulted in a mean for the month of 23.6° which is 4.5° below the monthly mean.

Precipitation as snow was recorded on 13 days with a total of 0.69 inch, or 0.15 inch above the normal for the month. The total snowfall was 9.1 inch, and the ground was covered on approximately 12 days.

Average wind velocity for the month was 8.7 miles, but there were no periods of excessively high wind, and no soil blowing.

A start was made on field work on the 25th, but it was soon stopped by a snowstorm.

The last few days of the month have resulted in some loss of livestock, especially east of Havre. Hay shipped in mostly by relief agencies is being sold at \$18.00 per ton for alfalfa, and \$9.00 for slough grass from Saskatchewan, the latter being of very inferior quality.

Maximum temperature, 68° ; minimum, -20° ; precipitation, 0.69 inch.

JUDITH BASIN:

March was colder than normal, the mean temperature for the month being 25° compared with the normal of 29° . Snow was rather common during the month, falling on 14 days. The total precipitation for the month was 1.33 inches as compared to the average of 0.79 inch. Precipitation during the winter is still much below average. The coldest weather of the month was at the close with a minimum of -18° on March 29. There has been no break in this cold snap as this is written April 2, the minimum temperature of last night being -15° a record low for the month of April.

There was about 4 inches of snow on the ground at the close of the month which should afford ample protection for winter wheat which is still dormant. There was one severe duststorm of about six hours duration on March 25.

It has been impossible to do any field work to date.

Maximum temperature, 65° ; minimum, -18° ; precipitation, 1.33 inches.

HUNTLEY:

March, as a whole, was a month of more wintery conditions than existed during February. Snowfall was heavy and the total precipitation for the month amounted to 2.80 inches which constituted a new high record for the month at this station. Mean, maximum and minimum temperatures were below the average and wind velocity exceeded the

average for the month. The frost being out of the ground, most of the moisture from the melted snows between storms was absorbed by the soil. On six days during the month minimum temperatures below zero were recorded. During all of the colder periods, however, the ground was covered with snow which afforded ample protection to winter wheat.

Winter wheat is reported to be well started in many parts of this locality but on the plots no marked change in the condition of the crop has taken place, and it is not yet possible to estimate stands or the amount of winter injury, if any.

Field work was begun on the plots March 21 but was halted by stormy weather. It was resumed on the 25th and again on the 28th, each time for a day only, due to interruption by storms. The month closed with the ground covered with snow more or less drifted across the plots.

Maximum temperature, 72° ; minimum, -13° ; precipitation, 2.80 inches.

SHERIDAN:

The temperatures for March were changeable, one week was quite warm the next week was quite cold, the latter part of the month being the coldest. The mean temperature for the entire month was the station average for March. Precipitation was recorded on 12 days; the amount is more than the average for the month. The wind was somewhat above normal for the month and there was some soil blowing on several days during the month.

The only field work done was the preparation of the first date of seeding ground which was double-disked and harrowed on the 14th, a snow of 6-8 inches on the 15th made it impossible to seed. Continued precipitation has prevented further field work.

Lambing has been in progress since the 20th and is somewhat slow. Five of the six sows have pigged, two having small litters and the others having eleven and twelve.

Maximum temperature, 72° ; minimum, 2° ; precipitation, 1.49 inches;

Mean temperature, 31° .

DICKINSON:

Although the precipitation for March was above normal for the month much of the surface soil is still too dry for a good job of plowing. Fall plowed land was very cloddy and some of these are still hard and dry. Pastures and grassland are still so dry that little growth will result till a good rain comes.

The mean temperature for March was 26.2° . This was slightly above normal but was below the February mean. Precipitation amounted to 1.16 inches and was 0.39 inch above normal. This was the most received in any March since 1929. Total precipitation for the three months ending with March was 1.74 inches, just 0.10 inch above normal. For the nine months, July 1934 to March 1935 the total was only 3.95 inches or less than half the normal for the period.

High winds March 26-28 caused some soil blowing. The ground was frozen part of the time on these days or the damage might have been greater.

Maximum temperature, 71° ; minimum, -18° ; precipitation, 1.16 inches.

Snowfall in March, 10.3 inches.

MANDAN:

The month of March has been both mild and cold. During the first week of the month the minimum was below zero on three days, and for the past week has ranged from 12 to 19.

No field work has been attempted, but will start as soon as conditions are more favorable.

The total precipitation for the three months of 1935 amounts to 1.62 inches compared to the 20-year station average of 1.46 inches. The precipitation for March was 1.13 inches compared with the 20-year average of 0.78 inches. Several wet snows fell in March and were of much value to the soil. The total snowfall was 10 inches for the month. Moisture conditions are much more favorable than a year ago. With normal April moisture crops should start out under favorable conditions.

Wind velocity was high on 2 or 3 days during the month and the air was filled with dust. The dust was mostly carried in from a distance. Very little soil blowing took place on the station during this time. The wind averaged 19.3 miles per hour on the 27th and 17.1 miles per hour for the 48 hours covering the 26th and 27th.

Crested wheatgrass showed some green growth by the middle of March.

Maximum temperature, 66°; minimum, -18°; precipitation, 1.13 inches.

BELLE FOURCHE:

Climatic conditions during March were unusual in many respects. The month was comparatively warm, the mean temperature being 3° above normal. Precipitation was 0.75 inch greater than the average for March, and a total of 1.02 inches was received March 3 and 4 in a heavy snow 9.5 inches in depth. Considerable drifting occurred, but the snow melted slowly and most of the moisture was absorbed by the soil. A few showers and a number of light snows were received during the remainder of the month, but not more than 0.16 inch precipitation was recorded in any instance. A brief period of abnormally cold weather followed the heavy snow early in the month, minimum temperatures of zero or below being recorded on two nights. The month was comparatively warm thereafter until March 29 when another cold wave occurred. The temperature dropped to 2° above zero the night of March 29 and remained below freezing continuously during the following four days, causing the soil to freeze to a depth of from 5 to 6 inches.

Wind movement was unusually high, but very little soil movement took place until March 26. An exceptionally strong wind prevailed throughout the night of March 25, and caused the soil to start drifting on a large scale. The high wind and soil blowing continued unabated, except for a few hours each evening, until about noon March 28. Soil movement was most extensive on March 27, when the 2-foot anemometer indicated wind velocities ranging from 24 to 30 miles per hour. Owing to thin stands of small grain being obtained on dry land in 1934, considerable blowing of grain stubble land occurred. Winter wheat fields blew badly, and extensive soil movement took place on all unprotected bare land. Fences in many cases were nearly buried by drifted soil from this one storm. The soil blowing was unquestionably the worst that has ever occurred in the known history of this region.

The dry land rotation field suffered considerably from drifting soil, as control measures were of little avail until blowing of adjacent fields was brought under control by listing. Receipt of about 3 inches of snow on March 29, 30, and 31 temporarily allayed the danger of further soil blowing.

Following the heavy snow storm and cold weather early in the month alfalfa, bromegrass and fall grain resumed growth, and winter wheat made almost perfect recovery. Fall wheat and rye were seriously damaged by the soil blowing later in the month, but owing largely to the abundance of moisture present beneath the thin layer of dry surface soil, none of the grain was blown out. The protective covering and moisture supplied by recent snows have been of great benefit to winter wheat and rye, and with the additional precipitation received early in April, these crops should make satisfactory recovery. Adequate moisture is present in the soil for the germination of early seeded crops, and for all immediate crop needs.

Field work has consisted largely of duckfooting and listing to control soil blowing. Plowing for small grain was commenced.

Maximum temperature, 72°; minimum, -7°; precipitation, 1.49 inches.

ARCHER:

The total precipitation for March was 0.61 inch. This is 0.11 inch more than the 22-year average. On March 4 a storm occurred, which totalled 0.48 inch, in the form of rain and soft hail. The remainder of the precipitation came in the form of light snow squalls. At present the soil is dry and not suitable for tillage.

In some sections severe soil blowing occurred during the month. However, the station soils remained pretty much in place except the fallow plots in rotation 570, the continuous fallow plot, and alfalfa land which is fallow.

General conditions for farm work are unfavorable and very little has been accomplished. The general attitude is to wait for a suitable moisture supply.

Considering the limited supply of feed livestock came through the winter in fairly good shape, however, in this section, there are still chances for considerable severe weather before spring grazing opens up.

On March 22 five Rehabilitation workers of southeastern Wyoming spent the day at the station studying the experimental results. Director W. L. Quayle visited the station March 22. F. D. Richey, Chief of the Bureau of Plant Industry, E. C. Auchter, Assistant Chief of the Bureau of Plant Industry, and A. C. Hildreth, Superintendent of the Cheyenne Horticultural Field Station visited the station March 27.

Maximum temperature, 70°; minimum, 9°; precipitation, 0.61 inch.

AKRON:

Following the hard, soil eroding wind of February 21, the weather remained calm and serene until March 15, after which extreme atmospheric unrest was almost the daily rule until the end of the month. The period of worst intensity was from the 15th through the week ending

the 23rd. The hard winds were almost equally divided between a generally northwest and southeast direction.

This region is to-day about as badly wind-swept, taken as a whole, as at anytime in the past fourteen years, but in spots of extreme erosion it is doubtful if the soil loss has been more than an inch. This extreme erosion has not taken place on more than ten per cent of the soil in the vicinity of the station.

The station was in the path of two badly eroding fields to the north and west. As a result more soil is drifted into the fences on the north and west sides than in 1926, when the erosion was not so general but about as bad in the uncontrolled sweep streams. Inside we have held our soil by working-out blow spots. On the whole the station has trapped an appreciable amount of silt soil from the adjoining eroding fields.

Rain fell on the 2nd, amounting to 0.78 inch, followed by an even covering of snow on the 4th which netted another 0.44 inch. Aside from two separate trace precipitation this accounts for the rainfall for the month, and was sufficient for placing the soil in good seed bed condition. This exceeds the established average of 0.78 of an inch for March.

Rotation plot seeding of the early spring seeded small grains was accomplished shortly after the middle of the month under excellent conditions for prompt emergence on all types of soil preparation.

Winter wheat is still much of a problem. Stands that emerged last fall and not damaged by the rabbits have started greening up; those worked by rabbits appear to have been damaged up to 90 per cent. This rabbit damage was by digging up the plants. Other plots which did not emerge last fall are doing so now, facing two hazards - one of being cut off by the shifting surface soil and the other that of questionable vernalization.

Maximum temperature, 77°; minimum, 5°; precipitation, 1.22 inches.

NORTH PLATTE:

Conditions at North Platte are similar to those for the plains states generally except that the upper two feet of soil except at the surface contains some moisture carried over from the rains of late summer and fall of last year.

Dust storms have been frequent and severe, although not of the smothering intensity reported from some other places. Much of the dust has apparently been carried in from other regions. This is easily stirred up by even light breezes, so that the air has been clear a very small proportion of the time. Some level hard land fields have blown badly, but practically all of these could have been controlled by cultivation. In the sand hills, it is doubtful whether bare fields could have been saved by any practical method.

Some winter grain fields still survive this far west in the State. The condition improves gradually to the center of the State. Winter wheat is making a heavy growth in the eastern half of the State and spring grains are being extensively seeded. In the west one-fourth of the State there is very little winter wheat survival.

Temperatures have been somewhat above normal. Precipitation, 0.57 inch.

A conference for study of North Platte results and planning of future work held at Lincoln on March 26-27, was attended by Nebraska agronomists, John S. Cole, A. L. Hallsted, J. F. Brandon, H. E. Weakly and L. L. Zook. These were joined by O. R. Mathews and J. B. Kuska at North Platte on the 28th and 29th.

COLBY:

March was dry, warm, windy, and dusty with considerable soil blowing most of the time. It was the worst March ever experienced at this station. Dust storms, some of which were the worst since the oldest residents can remember, occurred frequently during the first half of the month and daily during the last half. On several occasions it has been as dark as night in the day time.

Destructive soil blowing covers a wide area. There is such an extensive acreage of land which is bare of vegetation that the winds encounter but little obstruction over long distances. Huge drifts are piled up along the fences, in the road ditches, and elsewhere where there is a thistle or other obstruction. In many fields where wheat sown last fall has not sprouted on account of the dry condition of the soil the seed has been laid bare by the wind removing the soil covering.

In the vicinity of the station and over the southwest three-fourths of the county there is no wheat alive at this time, except perhaps in some isolated small patches. Towards the north and east there are still many fields of wheat which look promising. Even these are in many cases showing the effects of a shortage of moisture. Many are showing the effects of soil blowing.

The spring plowing for small grains on the Dry Land plots was done on the 28th. The ground was dry, except where the scattering thistles had caught drifts of snow. No seeding has been done. Under the conditions existing at this time it appears desirable to delay seeding until some moisture falls.

John S. Cole and A. L. Hallsted visited the station March 31. O. R. Mathews is here at present working up some moisture data.

Maximum temperature, 77°; minimum, 15°; precipitation, 0.33 inch.

Precipitation, 48-year average, 0.83 inch. Precipitation, January 1 to March 31, 1935, 0.64 inch; 48-year average, 1.70 inches; 1934, 1.44 inches.

HAYS:

March added one more dry month to the drought, contributing only 0.15 inch precipitation. It is the sixth consecutive month that has yielded less than 0.80 of an inch of precipitation. The total precipitation for the six-month period ending with March 31 was 1.72 inches.

The drought has been accompanied during the month by several days of medium to high winds heavily laden with drifting soil. The 15th, 20th and 26th were especially bad, vision having been zero several hours during the three days. Artificial lights were necessary most of the day. Pioneers say these dust storms were the worst ever

experienced in western Kansas. Heavy dust storms but less severe occurred the 16th, 17th, 18th, 21st, 22nd, 23rd, 24th, 25th and 30th. The soil carried by the wind was very light and much of it was carried high in the air. Most of the soil that filled the air and caused darkness came from a distance. There were only a few fields in this locality on which the soil was moving badly. While conditions are bad, this locality has suffered much less damage by erosion than many other sections. As a matter of fact practically all of the soil movement in this county may yet be arrested by tillage if work is not too long delayed. On recent trips a small area between Garden City and Kalvesta and another small area between Garden City and Scott City were observed which are so heavily covered with blow soil it is doubtful if tillage will be effective. These are the only spots observed where tillage would not arrest the soil blowing.

The wheat on the Dry Land project is generally in very bad condition due not so much to soil blowing but to the absence of moisture in the soil at seeding time and the continuation of the drought since that period. The stand of live wheat on the plots varies from zero on corn stubble plots to 90 per cent on three-year fallow where the roots have already penetrated to a depth of five feet. On ordinary fallow the stand varies from 20 to 50 per cent and the wheat looks poorer than it usually looks at this time on late fall plowing.

The small areas of wheat south of Hays for a distance of 30 miles and west for about the same distance, and another small area about Dighton which earlier produced a good growth and furnished pasture for a large number of cattle during the winter, is now deteriorating very rapidly. A large percentage of it is already dead. The indications now are that practically all of the promising wheat reported earlier in localities in Kansas west of Hays has deteriorating very rapidly. A large percentage of it is already dead. The indications now are that practically all of the promising wheat reported earlier in localities in Kansas west of Hays has deteriorated to the extent that no amount of rain can make a crop. This same condition exists in some areas as far as 30 miles east of Hays.

Maximum temperature, 86°; minimum, 14°; precipitation, 0.15 inch.

GARDEN CITY:

Lindsey A. Brown has been appointed as Agent in charge of the cooperative dry-land work at the Garden City station, effective April 1, replacing H. J. Clemmer, who recently resigned to take up work in South Dakota in the Soil Erosion Service. Mr. Brown was born at Windsor, Colorado; attended the Colorado Agricultural College from 1925 to 1928, specializing in agronomy and chemistry; graduated from the University of Nebraska, receiving the B. S. degree in 1930 and M. S. in 1931; and received the Ph. D. degree from Pennsylvania State College in 1934, following advanced work in soils, chemistry, and plant physiology.

At the time of his appointment Mr. Brown was Pedologist in the Conservation and Survey Division of the University of Nebraska, employed in making and supervising soil surveys of western Nebraska counties and related work on soils. He is author of several scientific papers on soils, and author or joint author of additional ones on county soil surveys in Colorado, Nebraska, and Pennsylvania.

TUCUMCARI:

High winds and drought have combined to make general conditions in this locality more serious as each week passed. Precipitation the past 19 months totals 8.40 inches, with a total of 7.03 inches since January 1, 1934. Early March showers moistened fields sufficiently to permit listing, but only a very thin layer of moist soil exists. Wind movement was the highest of any month on record and averaged 151 per cent of the normal March movement.

Crop failure in 1934 left fields practically bare last fall, while livestock have been permitted to eat every bit of vegetation from fields, leaving them not only bare, but well dust mulched, ready to move in every slight wind. Many fields listed six weeks ago have blown practically level. Station fields were surface cultivated and held surprisingly well until the past ten days. Listing has been started and it is not likely land listed this late will prove troublesome. However, crop prospects depend entirely upon precipitation, for practically no stored moisture is present, other than that turned up by the lister.

Wheat on the plains portion of the county has been terribly buffeted, but some fields still show promise; in other neighborhoods the wheat is blown out and fields cleaned to the old plow depth, with roads impassible due to sand drifts. Many row crop fields are also swept clean to the lister bottom.

In spite of warm weather throughout March, no reduction in amount of grain and roughage required for livestock can be seen, shipments of feed increasing rather than decreasing. Native grass will not make appreciable growth until good rains occur.

Maximum temperature, 80°; minimum, 38°; precipitation, 0.56 inch; average wind velocity, 10.3 miles per hour.

DALHART:

Soil blowing for the third year continues to be the most distressing problem. March continued dry and the rather high daily winds gave an opportunity for almost daily dust clouds. Not always was the soil blowing in this immediate vicinity, although it seemed always to be, but great clouds of dust came from the north on numerous occasions. There was more actual soil movement near the station than at any time since the spring of 1933. So far we have suffered the loss of very little soil from the eroding action of the winds. We have gained some on a few plots in the North field and, of course, the sand fences along the south and west lines hold their maximum capacities most of the time. Toward the latter part of the month it was necessary to erect the sand fence along the remainder of the South fence. This sand fence, which is the 5-foot picket fencing used by Highway Departments for snow-fences, really checks the sandy soil into a drift which shifts back and forth from one side of the fence to the other. The drift may reach the height of the fence but enough sifts through the pickets from time to time to keep from 6 to 24 inches of the pickets exposed. After approximately two years of using this fencing for a sand fence it is obvious that we have had no crop or plot damage on the plots adjacent to the sand fence. The drifts may in time spread out to the plots. Winter wheat plots adjacent to the fence have died for lack of moisture, as

attested by soil samples, while suffering no sand damage. The pasture now has sand drifts extending out into the pasture from a southwesterly direction. The pasture is now protected on the west by a sand fence.

No spring crops or spring tillage work, except for prevention of soil blowing, has been done. The apricot trees, east of the vineyard, peach, and hybrid plum trees are just finishing blooming. There cannot be very much moisture available so that the rather full and open blooms were unexpected. Buffalo and grama grasses, as well as other pasture grasses, have been showing green at the base for over three weeks. This is unusual for several reasons, chief among them being that it is earlier than usual and also that it shows, on the station at least, that stands of these grasses are not materially reduced after two years of drought where there has been no covering of blown soil on the plants or eroding of the soil from around the roots. Rye continues to hold the soil in the tree plantings and the vineyard. The less hardy grape vines in the vineyard continue to show the characteristic dead stems. The less drought hardy varieties will, at any season of the year, develop a cleavage crack from the base to the top of the stem. With the possible exception of Concord, Delaware, and probably Cloeta the roots retain considerable vigor under these conditions. There have been 51 stems out of a total of 70 vines which represent 16 varieties that have suffered this damage. To this date there are 33 varieties, represented by 120 vines, which have not suffered this stem cleavage. Replacements in the tree plantings has not been attempted on account of unfavorable climatic conditions. A few Chinese elms were replaced along the South fence.

The mean temperature for March was 49° or 6° above normal; precipitation, 0.27 inch; wind velocity, 8.8 miles per hour, or .4 mile above normal. The wind velocity at the 2-foot elevation in the pasture was 12.6 miles per hour; the pasture location has no wind diversion from the anemometer.

BIG SPRING:

Weather conditions during the month of March have been unusually favorable for this time of the year. Although there have been several occasions when the air was saturated, or at least it seemed so, with dust, which created very unpleasant conditions, it was always consoling to know that it was not of local origin. There has only been one occasion thus far when the wind has been strong enough to start soil movement to any extent. It is very probable, however, that this section will get its share during the next month or so when there are young crops to be damaged.

Two fairly good rains were received during the month making a total of 1.88 inches, which is nearly an inch above the average for the station. Temperatures were very mild during the entire month, 31° the minimum was recorded on only one occasion. This warm weather together with the rains has caused many of the farmers to start planting feed stuffs and cotton.

Spring plowing and listing of plots in the rotations was completed during the month; some leveling of fall listed plots was also done during this time. Other work has consisted of making replacements

in the evergreen planting, plowing under wheat here and hoeing weeds. Considerable shrubbery was planted around the grounds, and a new vineyard was started. The vineyard consists of thirty-four varieties of grapes.

Maximum temperature, 86°; minimum, 31°; precipitation, 1.88 inches.

LAWTON:

March weather was dominated by recurring periods of high wind velocity, alternating from the north and from the south, and several days of heavily dust-laden skies that reduced daylight visibility to a distance of 300 to 400 feet up to $\frac{1}{4}$ to $\frac{1}{2}$ mile. In a few instances the heavy fogs of dust were borne by wind of moderate to very low velocity, and the fine particles of silt, ranging from red to very light gray - depending upon the wind direction, settled rapidly. Some spring tooting on uncropped fields and plots was necessary to control soil blowing, but such soil movement has not been a serious factor in the farm operations in this vicinity. However, a rapid loss of surface moisture accompanied the high winds that prevailed during the month.

The monthly precipitation included three rains from March 3 to 10 that varied from 0.08 to 0.58 inch, and three showers on the 21st, 22nd, and 23rd, that ranged from 0.02 to 0.26 inch. The monthly total of 1.31 inches was only 0.32 inch below the normal. Rainfall on the 10th was quite irregular in amount and distribution throughout local territory. In the extreme northern part of the county a heavy rainfall was accompanied by hail with damaging crop effects, and in the eastern part of the county a torrential rain produced heavy field erosion.

March temperatures showed a range of 23° to 62° in the minima and from 48° to 83° in the maxima. The monthly mean of 55.9° was 4.9° above normal.

Wheat made a rapid, vigorous growth in March, especially where winter grazing had not been practiced. Jointing was evident in most varieties the latter part of the month and an occasional pustule of leaf rust was noted on susceptible varieties March 25. Plot marginal effects are very pronounced this spring and the crop in general, wherever observed shows a distinct need of additional moisture. The first distinct flight of adult chinch bugs was observed migrating into the wheat plots March 25.

Spring seeded oats have made a normal growth to date, but the crop shows considerable leaf tip injury from high winds and blowing soil.

The spring growth of alfalfa and sweetclover responded rapidly to the warm weather in March, using most of the available soil moisture. Stands of both crops were noticeably reduced by the drought in 1934, but sweetclover grown in rows on a terraced hillside field still retains a stand sufficient to produce a good crop. Windy weather, so far, has delayed the spring seeding of sweetclover and alfalfa that is usually done about March 15.

About 9,500 pounds of Korean Lespedeza seed is being distributed to farmers, free of charge, through the County Agent Office this spring. Past observations and scattered trial plantings in this county do not offer much encouragement to the one who proposes to grow this crop, especially under the past and the present weather conditions.

Corn planted March 14 emerged to good stands by the 24th.

WOODWARD:

The unseasonably warm weather of March with two light showers stimulated the winter wheat to rapid and early development. It has a heavy leaf growth and is beginning to joint. It is also beginning to show signs of entire exhaustion of moisture in large spots over fields. On terrace ridges without rain it will be dead in a very short time while valleys back of ridges show little advantage over nonterraced land. The best wheat is that planted late. It made moderate fall growth and is now benefitting by moisture stored in the soil. That planted early made an excessively heavy growth due to long periods of light rains in September, October, and November, and exhausted its moisture. Wheat planted on fallow has a very fair appearance, also, still having some stored moisture to support it.

The prospects for a good wheat crop over the country, generally, are very slight. Without more than usual rainfall it cannot make a paying yield and at its advanced stage it is in great danger of being severely injured by a late severe freeze.

Even apple trees, which usually bloom after danger of frost is past, are now beginning to bloom. Peaches have set fruit. Most of April blooming shrubbery has already shed its blossoms. The flowers of Chinese elms came out in early February and were killed. Several plants which have never bloomed before bloomed this year.

The sky has been dark with dust on many days, but this comes largely from the bare plains to the west. There has been little soil movement locally because of the very heavy covering of wheat.

Work of the month has consisted largely of transplanting and shipping nursery stock, pruning trees and grape vines, planting tree seed, disking orchard and vineyard, hauling brush, cultivating bare plots and fields to prevent soil blowing, graveling roads and extending water lines in nursery.

Maximum temperature, 85°; minimum, 18°; precipitation, 0.90 inch; wind velocity, 9.9 miles per hour.

PENDLETON: (Report for the two months February and March, 1935.)

Precipitation for February was 1.05 inches the same as the six-year average. The mean temperature for February was 37.2° or 3° above normal. During February on the station the rotation and increase fields were prepared for spring seeding operations. Many farmers plowed a considerable part of their acreage for fallow. A considerable acreage of spring wheat was sown in February. About 6,000 acres of wheat was killed by the cold weather in January, mostly in the Helix section, all the winterkilled wheat being Federation spring wheat which was fall sown.

March was a very disagreeable month for field work, with cold winds, heavy frosts in the mornings, snow and rain squalls. The mean temperature for March was 40° or 4° less than normal. Precipitation in March was 0.96 inch, or 0.53 inch less than normal. Precipitation since September 1, 1934, was 9.47 inches or 0.32 inch less than the normal for the period September 1 to March 1, inclusive. On the station the spring wheat on the rotation plots was seeded on March 1. Alfalfa and sweet clover were sown on March 22. A Soil Erosion grass nursery consisting of a collection of 121 grasses from Eastern Oregon, Eastern Washington, Idaho, Nevada and Northern California was planted on March 23.

The garden pea acreage has increased this year, two new canneries in this section stimulated the increase acreage in green peas. Growers of seed peas are receiving a very good price for their seed, 6.5 to 12.5 cents a pound. Peas have been more profitable than wheat the past four years.

NOTE:

The weekly edition of the Station Reports of this division will be resumed beginning with week ending April 20, 1935. The letter for that date should cover the period April 1 to 20.

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