

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

JUL 20 1934

REPORT FOR THE WEEK ENDING JULY 7, 1934.

HAVRE:

Growing conditions for the week were quite satisfactory. Although there was no precipitation, moisture supplies from last week were ample. Temperatures were not extremely high, and wind was moderate. Crop conditions in the Triangle are reported to be excellent. Many fields through this area will have almost 'bumper' yields unless conditions become severe during the next two weeks. Range conditions are improving but hay is light. Live-stock are doing very well.

Hail damage from last week becomes more apparent on some of the small grains. Many heads that were not broken by the stones were injured enough so that they are now blighting. In a general way bearded grains seem to have withstood hail better than non-bearded ones. Thick stands show less damage than relatively thin stands. Marquis was injured more than most wheat, and Prolific spring rye was one of the best. Winter wheats also show less damage than many other wheats.

Grasshoppers are quite numerous but are causing severe damage only in local areas. The 'Says Green Bug' has been increasing rapidly the past two years and is damaging many fields this year. This is a large stink bug that works on grain after heading. It is a sucking insect and after working on the stem, seems to entirely ruin the head. Reports are that the straw is not palatable for livestock if the field is badly infested.

Maximum temperature, 87°; minimum, 39°; precipitation, 0.

JUDITH BASIN:

No moisture of any consequence was received during the week, but the weather continued cool and crops did not suffer severe damage. Corn and potatoes are about the only crops that are making much growth at the present time. The condition of both is above average for this date. Winter wheat is turning, and some of it will be ready for the binder within another week, or ten days. Grasshoppers are 'flying' and are now scattered over all fields. The damage to date is confined to new seedings of crested wheat-grass. Blister beetles are numerous, their favorite food seeming to be the green ash.

Preparations are underway for the Annual Judith Basin Farmers' Picnic to be held at the station Thursday, July 12.

Maximum temperature, 85°; minimum, 41°; precipitation, 0.02 inch.

HUNTLEY:

Although most days of the last week have been seasonably warm, some of the nights have been unusually cool for this time of year, a minimum of 40° having been reached on July 6. Good rains were received south and west of the station during the week, but only a light sprinkle fell locally. Small grains ripened up rapidly during the week, and those plots of winter wheat and oats which had made enough growth to cut were harvested. Spring wheat and barley are turning and should be ready in a few days. The late fallow plots, field peas, and sweet clover for green manure were plowed. The soil was very dry and broke up in an extremely cloddy condition. Grasshoppers continue to move in to the cultivated fields from the surrounding range country. Poisoned bran was spread over the fields twice in the last few days. The kill was quite heavy, but the migration continues.

Maximum temperature, 90°; minimum, 40°; precipitation, 0.07 inch.

BELLE FOURCHE:

Warm, drying weather early in the week caused extensive burning of small grains, but temporary relief was afforded by a heavy shower on July 5 and the subsequent cool weather which prevailed for a couple of days. Oats and barley are maturing rapidly, and spring wheat, winter wheat, and flax are beginning to turn color. Visitors during the week included the following members of the Division of Western Irrigation Agriculture: C.S.Scofield, S.H.Hastings, L.Harris, J.A.Holden, Dan Hansen, and E. G. Noble.

Maximum temperature, 92°; minimum, 42°; precipitation, 0.56 inch.

SHERIDAN:

Quite variable weather prevailed over the week, some cool days, considerable cloudiness, and with high winds much of the time. Winter wheat is ripening fast, oats in the rotations are turning color, and some of the Marquis wheat in the check plots of the rotations is in the soft dough stage and filling just fair. A high percentage of foot rot has shown up in many of the spring wheat (Kubanka) plots in the rotations. The February seeding of Trebi barley and some winter wheat on land cropped to small grain last year, the most of the latter practically a total failure, was harvested. Row crops in the rotations and some bulk fields were cultivated.

Maximum temperature, 93°; minimum, 45°; precipitation, 0.17 inch.

DICKINSON:

Cool weather continued with two showers, which amounted to 0.55 inch. Frost occurred on the night of July 5 in low spots in the district, and tender garden crops were damaged in places, though no effect was seen on the station. Small grains made good progress, but the weather was too cool for corn. Increase fields of corn were cultivated the second time, and corn plots on the rotations were thinned. A few patches of grass were mowed, but the yield of hay was very light. Garden and orchard crops are doing well. Early peas are now too hard to use, and in the early planted garden, beets, carrots, spinach, and potatoes are far enough along to use.

Maximum temperature, 90°; minimum, 33°; precipitation, 0.55 inch.

MANDAN:

Agronomy - The week just past has been favorable for crops. The weather was cool with a couple of good showers. Small grains that recovered at all from the early drought are growing well, but are much handicapped by a heavy growth of weeds. Corn continues to look good, but much of it is late.

The total rainfall for June was 3.78 inches, which is above normal, but there is still a shortage of over 4 inches since January 1.

Maximum temperature, 91°; minimum, 42°; precipitation, 0.83 inch.

Cooperative Grazing Experiment - Native pastures continue to show some improvement. Blue grama grass is making a good growth and is heading out in places. Western wheatgrass has made a light growth for the season and will not make much more growth regardless of moisture. Western needle grass (*Stipa comata*) has also made very little growth.

The steers made gains somewhat below normal for June, except those in the 100-acre pasture. Steers in the other pastures were grazing very short pastures during early June. The 50 and 30-acre steers were not started on their pastures in May. They were turned into them July 1. There is enough feed in these pastures to carry them now for sometime. Two steers from the reserve pasture were taken to Fargo by the Agricultural College for the June slaughter tests.

Following are the gains of the steers for June and for the 45 days.

Pasture (acres)	Acres per head	Gain per head (pounds)	
		June	45 days
100	10	102.0	161.0
70	7	81.5	146.5
50	-	-	-
30	-	-	-
70 (Rotation)	5	60.7	112.5
28 (Bromegrass)	5.6	64.0	96.0
7 (Crested wheatgrass)	1.75	73.8	92.5
Reserve	-	62.9	106.7

Arboriculture - The collection of Siberian pea-tree seed has been in progress the entire week. The crop is extremely light this year, the pods having an average of only about three seeds in each as compared with a normal average of six or seven. It will be possible to collect only about one-third of the amount usually collected. A considerable quantity of Russian olive seed planted last March is now emerging. Part of this seed emerged shortly after planting and was taken by heat and drought in May. Blister beetles are a continual menace to Siberian pea tree and locust seedlings, the new growth being eaten off almost as fast as it appears.

Horticulture - Currants were picked the early part of the week. The crop was very light, and the berries were of poor quality. Juneberries, Golden currants, and Chinese cherries are starting to ripen. The Juneberries seem to be the favorite food of birds of all kinds and are being removed by them as soon as they turn color. Golden currants and Chinese cherries are producing a fair crop. It seems that only the earliest plants among them have a crop this year. A few selections from both of them were made during the week.

Vegetables of all kinds have benefited greatly by the rains of the last few days followed by cool weather. Lettuce, radish, and spinach have been in their prime during the week and yielding very well. Salamander and Hanson lettuce were the best in the variety test conducted this year. New York Improved formed nice large heads but ran to seed almost immediately, as did the Big Boston. Prospects for a good tomato crop seem better at the present time than for several years. The plants are thrifty and have set very well.

On July 2 Undersecretary Tugwell; Knowles Ryerson, Chief of the Bureau of Plant Industry; Lee Strong, Chief of the Bureau of Entomology; and Dr. Bressman and Mr. Porter, Assistants to Secretary Tugwell, inspected the station. Special attention was given to the shelter belt, grazing, and grass nursery experiments. Other official visitors during the day were J.R.Parker, Bureau of Entomology; J.Allen Clark, Cereal Crops and Diseases; U.S. Senator Frazier; Congressman Lemke; J.Talbot, President Farmers Union; Walter Maddock, Exec. Sec. Farmers Union; L.Jones, representing the Minneapolis Journal; President Stringer, State Bank of North Dakota; John Haw, Agricultural Development Agent, Northern Pacific RR.; E.C.Leedy, Agricultural Development Agent, Great Northern RR.; E.Wallace, Associate Press representative; and a number of other Department officers and other visitors.

ARCHER: (Report for the three weeks ending July 7, 1934.)

During the first 10 days of the period there was ample moisture and conditions were favorable for plant growth, but since that time the unusually high temperatures and the lack of adequate rainfall have been detrimental to the drilled crops except millet, which is still in the early stages of growth. On June 28 the temperature reached 100°, which equalled the highest temperature recorded at Cheyenne since 1873. On July 3 the temperature reached 102°. The last two days have been cool. The total precipitation for the first six months of 1934 was 5.23 inches, 21-year average 6.83 inches.

Millet, Sudan grass, and row crops are in good condition, except beans have not overcome the hail damage of June 15. The small grain crops are not so promising. The hail of June 15 damaged the winter wheat to the extent of 45-per cent by shattering. Some of the spring wheat which had just headed, blighted as a result of hail damage. The winter wheats average 15 to 17 inches in height. Other small grains are short.

June 17-23, maximum temperature, 92°; minimum, 42°; precipitation, 0.44 inch.

June 24-30, maximum temperature, 100°; minimum, 49°; precipitation, Trace.

July 1-7, maximum temperature, 102°; minimum, 43°; precipitation, 0.38 inch.

NORTH PLATTE:

The weather of this week has produced a wide range in temperature but no change in the moisture situation. July 3 was the hottest day of the year to date with a maximum of 107° at the table station. Much cooler weather has followed, with maximum and minimum records of 76° and 55° on the 6th. Rain has threatened nearly every afternoon and evening, but the only measurable amount of precipitation was 0.06 inch on the 6th. Winter wheat yields on fallow ranged from 1.3 to 19.3 bushels per acre, and averaged 9.0 bushels. Spring grains were harvested on the 2nd and 3rd. On fallow there was sufficient height for binding. A mower was run over other plots chiefly to hold back the growth of Russian thistles. There were few heads except on the plot margins. Corn on dry land is practically at a standstill. Severe burning will begin if high temperatures recur without rain. Second cutting of alfalfa is under way on bench land.

AKRON:

The hottest temperature of the present season was 101° on the 3rd. This hot day was followed by showers which barely missed the station. There was a hard rain in Akron the evening of the 3rd just 4 miles west, but the station gauge recorded only 0.04 inch. Corn thinning, harvesting, cultivating row crops and open fallow land, and threshing received attention. The variety winter wheat on fallow was mowed with reaper attachment and immediately hauled to the machine and threshed. Yields of 2 to 5 bushels per acre were reported from this experiment. Corn stands, which thickened after the rains of June 15, proved very unsatisfactory. Rate and spacing corn project was thinned to specified stands, though the plant spacings on the individual plots was left uneven. Some rotation corn plots had as low as 485 plants.

K.S. Quisenberry spent the fore part of the week at this station, where he was joined on the 5th by D.W. Robertson of the Colo. State College.

Maximum temperature, 101°; minimum, 54°; precipitation, 0.05 inch.

COLBY:

This has been one more hot, dry, and generally windy week. On the 3rd the temperature rose to 106°, the hottest thus far this year. Yesterday the 6th, and this morning have been cooler. A hot wind is blowing this afternoon, and the air is filled with dust.

The small grain harvest was finished the 3rd. The corn is being cultivated to-day for the first time. The dry weather, rabbits, and grasshoppers are making it look pretty sick in places. The sorghums are growing fairly well, except the Early Sumac sorgo. That was replanted and came up to thick stands from the second planting, but the hot, dry weather so weakened the young plants before they became firmly established that many are not surviving.

Maximum temperature, 106°; minimum, 53°; precipitation, 0.23 inch.

GARDEN CITY:

Just another dry report. No rain, plenty of wind and dust. The past six months have been the driest first six months of the year on record, only 4.07 inches having been recorded during the entire period. Most of this has occurred in small showers which did no noticeable good. The average for the same period for 25 years is 9.30 inches.

Field crops are struggling along. Very few of the plantings of June 19, consisting of milo, kafir, Sudan grass, feterita, broomcorn, sorgo, and cowpeas, are emerged sufficiently to list germination dates. Three plots were checked as emerged during the past week. Field corn is struggling along with a valiant effort to survive. During the heat of the days some of it looks as if it would not live through. There have been some casualties, but the stands are still sufficient. There is a sad lack of uniformity in the plantings except for plots B & E. The fallow plot is about in the same class as the A plot. The two listed plots are making a fair second showing. Another variety of sweet clover was harvested this week for seed.

Maximum temperature, 106°; minimum, 60°; precipitation, 0.

HAYS: (Report for the week ending June 30, 1934.)

The past week has been another hot one with the temperature reaching or exceeding 100° every day. Hot winds have been the rule, the moisture received during the previous weeks of June is rapidly disappearing, and the crops are again needing rain.

Harvesting was finished June 26. The harvesting was slow this year owing to some weak points in the combine chargeable to natural wear and to the raggedness and lightness of the crop. All plots except 591A in Field A were harvested, about half of the plots in Field B, only a few plots in Field C, except on fallow, and only two plots in Field D. All the plots of wheat on fallow were harvested, all on corn stubble, on green manured plots, where only light crops of green manure grew last year, and a number of plots of wheat after wheat. The yields on most of the last named will be failures. 27 bushels per acre on a fallowed plot was the high yield of the season, but zero constituted the large majority. The only yields of spring grain were on fallow, where oats made 11.3 bushels, barley 6.3 bushels, and spring wheat made 2.5 bushels.

A very good kill of grasshoppers resulted from a general spread of poison bait (200 pounds bran mash) beginning at 3:30 the morning of the 3rd. Chinchbugs are already making some of the row crops look bad and may cause a great amount of damage.

The month of June provided some interesting weather. Although there were some dry spots in it, generally the rain was very well distributed throughout the month. The total by the Weather Bureau gauge was 5.15 inches, and the Dry Land gauge, 4.85. The evaporation soared to 12.685 inches. June was the second hottest June on record with the temperature reaching or exceeding 100° 10 days during the month.

HAYS:

Although somewhat relieved by rains during June, the drought has been resumed. Pastures are getting brown. Alfalfa has stopped growing on the bottom land. Thus far no growth of alfalfa sufficient for mowing has been produced on the upland. Some of the advanced corn shows top burning, and the later planted row crops are making only moderate growth. High temperatures were the rule during the first part of the week up to and including July 4 when the temperature reached a maximum of 109°. A local shower of 0.09 inch followed. A change in wind direction to the north brought cooler temperatures which have prevailed since. Heavier showers up to good rains have been reported in parts of neighboring counties. Work during the week has consisted entirely of early seedbed preparation including the various methods for winter wheat.

Maximum temperature, 109°; minimum, 53°; precipitation, 0.09 inch.

TUCUMCARI:

Field work the past week consisted of field cultivating portions of crop land where perennial weeds were making some headway and grubbing yucca from fields and roadways. Water tanks were drained and cleaned, the bunk house calsonimed, and miscellaneous clean-up work performed.

The only change in climatic conditions is a gradual increase in intensity of the drought and heat. Precipitation since January 1 totals 1.69 inches, and since the close of August it is 3.06 inches.

Maximum temperature, 102°; minimum, 63°.

DALHART:

There has been a continuation of the drought. The really remarkable thing is that all corn and sorghum seedlings have not died. Where the land was not fallowed last year the plants are no larger than last week. The first two dates-of-planting of the sorghum varieties are showing the most injury. The drilled Sudan plots are practically dead throughout, and the Leoti Red drilled plot is almost as bad. The Sudan in rows shows the most dead plants of the row plots, while the broomcorn plots are next. The feterita plots have the best color of any of the grain sorghums. Milo and kafir in lister furrows are almost as far advanced as surface planted. The fall plowed plots of kafir, milo, and corn are showing the most severe damage from drought. Fallow plots of corn and sorghums are 12 to 18 inches high. The other early planted plots range from 4 to 6 inches in height. The plots planted around the middle of June are still showing insufficient stands. Cowpeas, planted at that time, are still in the two-leaf stage for the most part. The sorghums planted at that time are, where they have emerged, barely large enough to thin.

Maximum temperature, 101°; minimum, 61°; precipitation, Trace;
precipitation January - June, 4.24 inches, normal, 8.78 inches.

BIG SPRING:

The long dry spell, which has prevailed at this Station, was broken on June 30 when 0.97 inch of rain was received. This was the first rain of any value since April 19 when a half inch was received. Two other showers totaling 0.43 inch have been received during the week. The first rain was very local in character and did not cover an area more than three or four miles square. The others were spotted but more general.

Sumac and millet was planted in the rotations, and some milo and kafir plots were replanted. An increase field of Sumac and Hegari was also planted. Other work has consisted of thinning milo, kafir and some cotton in the rotations, and plowing wheat plots and roadways. Some Early Wheeler peaches were picked; the dry weather had caused them to mature at about half their normal size.

Maximum temperature, 101°; minimum, 65°; precipitation, 1.40 inches.

LAWTON:

The intensity of heat and drought injury to row crops and to cultivated and native grasses remains unabated. During the 19-day period, June 19 - July 7, the maximum temperature averaged 100.8°, and the mean for the same period was 86.2°. This is 8° above the normal for June and 4° above the July mean. A little shower of 0.06 inch on July 1 represents the only precipitation recorded since June 16. The total evaporation for the 19-day period mentioned above was 8.164 inches - a daily average of 0.429 inch.

Hopes of a corn crop in southwestern Oklahoma have entirely faded. Sorghums that are not infested with chinch bugs are resisting the hot, dry weather in good shape but such instances are few. The infestation is generally very heavy and under such conditions the crop damage is severe.

Rotation plots of feterita contain only a few live plants. The foliage on rotation plots of kafir is 25 to 50 per cent dead, and a good many plots are attempting to head. Many of the early maturing, chinch bug resisting varieties in the chinch bug sorghum resistance project show striking and favorable contrasts to the susceptible varieties. Corn in rotations 142 and 274, burned beyond recovery, was harvested July 7. These two plots, as usual, succumbed to drought more rapidly than the M.C. plots where the corn is grown in a block of seven plots. Sweetclover, grown in paired rows, is quite brown, but it is still in condition to respond to improved weather conditions. Cotton, and cowpeas continue to demonstrate their ability to resist lots of hot, dry weather.

WOODWARD:

The past week was 'just another week' with three days of searingly high temperature, a furious short-lived dust storm followed by 0.04 inch of rain, and fairly high continuous winds.

As the result of dry, hot weather corn planted during April has dried until there is no possibility of a grain yield. Alfalfa is ready to cut for the third time and will give a very meager crop. Some of the cowpeas are beginning to drop leaves badly. Sorghums have recovered well from the beating rain of June 15 and have a good appearance. Many early peaches were harvested. They were small and dry.

Fertilizer tests with wheat have now run for three years. One year spring application of sodium nitrate nearly doubled yields. Aside from that there has been practically no response to any commercial fertilizer. Tests were run on very sandy soil from which it was assumed fertility had been leached.

A flower that pleases everyone is a very dwarf double sunflower which blooms many weeks during the summer. This is handled by nurseries under the varietal name of grandiflorus. The balloonflower (Platycodon grandiflorum) is still making a bright display of blue bellshaped flowers which withstand hot winds and beating rains equally well. The common rose mallow is unequalled for its wealth of color. The everblooming honey-suckle (L. Heckrotti) is blooming as freely now as it was two months ago.

In grape chlorosis experiments, ferrous sulphate sprays have shown good temporary results. All the mulches used have increased vine growth considerably, the best results being with plants where ammonium sulphate has been added to soil in addition to mulch. Where various chemicals have been applied to the soil about plants without mulches no results are apparent.

Station work for the week consisted of planting and thinning sorghums, thrashing wheat, hoeing cotton and windbreaks, cultivating vineyards, and picking fruit.

Maximum temperature, 105°; minimum, 60°; precipitation, 0.23 inch.

N O T E

Mr. A. Mc Ashley, Chief of Division of Purchase, Sales and Traffic, instructs, as follows:

"All officers and employees of your bureau concerned in the drafting of specifications for lumber should be instructed to discontinue the use of the descriptive term 'California White Pine' in advertised specifications for ponderosa lumber, using instead the term 'Ponderosa Pine.' This action is being taken in accordance with the suggestion of the Federal Trade Commission and the request of the Comptroller General."

* * * * *



WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR THE WEEK ENDING JULY 14, 1934.

HAVRE:

Growing conditions were quite favorable during the week. A shower amounting to 0.36 inch accompanied by some hail on the afternoon of the 7th did a small amount of damage to crops. Grain hays were cut on the station during the week, and the yield of these was not materially reduced by the hail. Spring rye yielded better than 5,000 pounds to the acre. Winter wheat is mostly cut. Fallow ground is being cultivated in commercial fields. Land that was cultivated to any extent before the two heavy showers has baked so badly. Prospects for a grain crop continue excellent throughout most of the triangle section. Hay is very scarce, however, and from present indications, prices will be high this year. The 4-H Club Camp for this and Blaine County was held here on the 9th to 11th. Professor D. W. Chittenden, Head of the Animal Husbandry Department, Bozeman, was at the station on the 10th and 11th.

Maximum temperature, 92°; minimum, 43°; precipitation, 0.36 inch.

JUDITH BASIN:

Several days of hot, windy weather have caused rapid deterioration of all spring sown crops and hastened the ripening of winter wheat. Spring wheat and barley have suffered the greatest damage. On two afternoons of the week there was considerable soil blowing. Winter wheat harvest with the binder was started on the station Friday afternoon. Oats are ripening rapidly, and with another week of dry, hot weather will be ready for the binder.

The annual Judith Basin farmers' picnic was held at the station July 12. Attendance was estimated at 4,000. Robert Clarkson, director of Rural Rehabilitation in Montana and Fred Nennion, secretary of the Montana Tax Payers' Association were the principal speakers.

D. W. Chittenden of Montana State College and George A. Morgan visited the station during the week.

Maximum temperature, 91°; minimum, 43°; precipitation, trace.

HUNTLEY:

Hot winds during the week have intensified the effects of drought on all vegetation on the dry lands. Even Russian thistles look wilted. Nearly all plots of small grains have burned ripe, and corn has curled tightly every day. Until recently, corn appeared to be withstanding the drought remarkably well, but its appearance at present is very discouraging. Grasshoppers continue to move from the range land into the cultivated fields in large numbers, especially when the wind blows from the west or southwest. Poisoned bait was again spread over the plot fields and on adjoining areas not pastured by range stock, with good results, although under present conditions such relief is decidedly temporary. Field work has consisted of harvesting small grains, cultivating and hoeing row crops and poisoning grasshoppers.

Maximum temperature 99°; minimum, 45°; precipitation, 0.

SHERIDAN:

High temperatures with considerable wind over much of the week ripened grain rapidly and lowered prospective yields considerably. Harvesting of winter wheat was completed. The most of the barley and a part of the oats in the rotations, all early varieties of both barley and oats, and all bulk fields of barley and oats except some Glabron and Horn barley were harvested. Early varieties of spring wheat appear to be filling fairly well, with Marquis and earlier varieties ripening. Whether durum wheat in the rotations will make any yield or not remains doubtful. Nearly all corn is firing badly, and without more moisture it appears doubtful if the crop will even make forage. Sorgo and Sudan grass, where any of the seed emerged, is making little growth.

Poisoning of grasshoppers was continued throughout the week. Continued poisoning appears to be only just about keeping them down to the level of a few weeks ago, as they continue to move in from the dry range surrounding the station.

Maximum temperature, 100°; minimum, 48°; precipitation 0.

DICKINSON:

About normal weather conditions prevailed during the week, and crops deteriorated because the soil moisture in grain fields is about gone. Early grains are ripening and some harvesting will be done next week. Several plots on the rotations will be mowed as yields from the thin, weedy stands will have no significance. A good many farmers in the district have started mowing small grains for hay. Some of the poorer fields have been pastured. Grains on fallow will produce light to fair yields. Corn is now about a foot high and growing well. Stands of millet are good, but the plants have been wilting during the past few days. About 8,000 cattle have been shipped out of the county in the drought relief work. It is estimated that about as many more will be sent out.

M. J. Peterson, vocational agricultural instructor at Beach with about 20 boys of his class visited the station on July 13.

Maximum temperature, 94°; minimum, 46°; precipitation, 0.12 inch.

MANDAN:

Agronomy: The past week has been warm and dry, since the early part. Crops are showing the need of moisture again. Corn made the most progress during the week among the crops. All fallow plots were worked with the duckfoot, and corn was given the second cultivation.

Maximum temperature 95°; minimum, 57°; precipitation, 0.05 inch.

Cooperative Grazing Experiment: Pastures are showing the lack of moisture and grass is starting to dry up. The cattle appear to be doing well on pasture, but those on the smaller pastures will soon be in need of more feed. The old dam in the reserve pasture is nearly full of water. The water must have come from the rain on the evening of July 6. While a fairly heavy shower fell that evening at the pasture, it must have rained much harder just west of the pasture in the drainage basin of the dam.

Arboriculture: E. J. George and Art Ferber are out on shelter-belt inspection work, the former calling on cooperators and taking shelter-belt data in the territory from Williston, N. Dak., into Montana, and the latter covering the South Dakota-Wyoming plantings. Mr. Ferber reports that the 1930 plantings in his territory are surprisingly good, with the exception of ash which in all cases has been attacked by borers. Only about 40 per cent of the 1934 plantings might be termed successful, the

remainder grading from total failure to fair. Mr. George reports that the old tree plantings that he has visited thus far look remarkably good, some of them showing 100 per cent survival at 10 and 15 years.

Horticulture: The weather during the past week was favorable for vegetables. Sweetcorn, tomatoes, and vine crops which were rather backward a week ago seem to have made up for lost time. Early planted sweetcorn is now tasseling with a few silks showing. Tomatoes of all kinds have set a good crop, and if rain falls in the near future should yield very well. Potatoes are slow in forming tubers and the stand is rather uneven but so far this crop looks promising. Vegetables in use for table at present are as follows: Lettuce, spinach, radishes, kahl rabi, turnips, and cauliflower. Potatoes should be ready in a few days. So far, there are few insect pests in evidence. An attack of blister beetles on the potatoes is the only one necessitating spraying.

A few perennials such as Delphinium, Hemerocallis, Coreopsis, Platycodon, and Gypsophila are in bloom about the grounds. Canna and geranium beds are now much improved and giving a good display on the lawns.

Most of the fruit trees have been making a fair growth, but more rain will be needed soon. Golden currants and Chinese cherries are now ripe, there being a good crop of the currants and a fair crop of the Chinese cherries. Chokecherries are also ripening. The third regular spray of the season was applied during the week. Potatoes were sprayed with lead arsenate to control blister beetles. Hoeing of weeds and washing out of crossed seeds have been in progress.

Official visitors during this week were Clyde McKee, Assistant Director, Montana State Experimental Station, A. C. Dillman and Mr. Butler, Cereal Crops and Diseases.

BELLE FOURCHE:

Hot dry weather prevailed throughout the week, and most all crops are suffering from lack of moisture. Corn is curling badly, but sorgo and potatoes are making good growth. Small grain is maturing rapidly, and oats, winter wheat, and flax are practically ripe. Field work has included disking green manure plots, cultivating intertilled crops and alleyways, dragging roads, hoeing, and weeding. The annual farm picnic was held on July 14, and the attendance was larger than usual. Congressman Theo. B. Werner was the speaker for the occasion.

Drilling of an artesian well on the station was commenced early in the week. An 82-foot standard rig and other regular oil well drilling equipment is being used. Water bearing sands are expected to be encountered at a depth of 2,400 to 2,700 feet, but the contract specifies drilling to 3,300 feet if necessary, the hole to be large enough to permit the installation of a 6 5/8 inch casing at the lowest depth.

Maximum temperature, 94°; minimum, 52°; precipitation, 0.15 inch

ARCHER: :

During the past week the weather was hot and dry with hot winds at times. The average maximum temperature was 98°. The total precipitation for the first two weeks of July was 0.44 inch. The extreme heat and very dry conditions are causing serious injury to crops.

The drilled crops are burning badly on the best methods of tillage. Corn has been rolling for the past two weeks and appears to be approaching the danger point. Potatoes, beans, Sudan grass, and millet are holding their own, and the sunflowers in the dairy field continue to grow. The pastures are parched, and the dairy cows that received no

other feed than the native pasture affords, even though changed to grass that has not been grazed this season, continue to drop in milk production. All winter wheat seeded on or before September 15, 1933, ripened, and that on the rotation plots was harvested, mostly with the mower. It is quite light in weight and gusts of wind scatter it badly, therefore, it was decided to let the varietal plots stand until dry and then cut and thresh them immediately.

Work at the station consisted of painting, cultivating corn and sunflowers in the dairy field, and cultivating rotation plot alleys. The cultivation of row crops in the experimental field is in progress.

Dr. K. S. Quisenberry of the Division of Cereal Crops and Diseases and Director W. L. Quayle of the University of Wyoming visited the station July 10 and 12, respectively.

Maximum temperature, 100°; minimum, 53°; precipitation, 0.06 inch.

AKRON:

The week has been excessively warm and hence unfavorable for the fall maturing crops. Corn, especially, is curling markedly during the heat of the day. Beginning Saturday the maximum temperature was 97° for two days, then 99° for three days, then 101°, and yesterday 106°. This is the highest summer temperature ever recorded at this station. The past high was 105° on July 15, 1925. The summer maximum has been above 100° during only 10 of the past 27 years.

Harvesting has been in progress, but major attention had to be directed again to weed control on the fall maturing crop experiments. Winter wheat has been ready to thresh the past week, but only this morning has it been possible to make the start. The highest yield threshed was 3.9 bushels per acre on fallow. These plots are being mowed with reaper attachment then hauled directly to the machine for threshing.

Maximum temperature 106°, minimum 55°; precipitation, 0.02 inch.

NORTH PLATTE:

Weather continues hot and dry. Maximum temperature has been 100° or higher for five successive days with records of 106° and 108° on the 12th and 13th. Corn has deteriorated rapidly. Much of it is now apparently burned beyond recovery. First tassels are beginning to appear on the better rotation plots, with plant heights between 3 and 4 feet. Spring plowed plots after small grain are so badly burned that tassels will not be produced.

Soil samples taken during the week show that there is practically no available moisture in small grain plots that are free of weeds and upon which the grain had died before the rains of June 14-17. It seems unusual with over 2 inches of rainfall during June that there was no storage in clean land of this kind. There was some increase in plowed fallows, which may be accounted for by the fact that a higher water content previous to the rains permitted more rapid penetration to depths beyond easy escape by evaporation.

Visitors during the week included Chancellor Burnett, Dean W. W. Burr, and a party of University Regents.

COLBY:

This has been the hottest week of the year. The maximum temperature has been above 100° every day but one. Including today the maximum temperature has been above 100° for 7 consecutive days. Yesterday the maximum temperature was 112°. The previous high was 109° on June 30, 1933. There were two showers this week of 0.11 and 0.03 inch, respectively. The winds have been very hot, but not very hard, except on the 8th when the wind blew hard all day and nearly all night. There was some soil blowing that day.

Corn is suffering very heavily from the drought, heat, rabbits, and grasshoppers. Even the sorghums are beginning to wilt badly, and many of the young, tender plants are dying. The sorghum plots were all cultivated the first time this week. The ground was generally dry and loose with only scattering weeds. The sorghums range from 4 to 10 inches high.

Maximum temperature, 112°, minimum, 63°; precipitation, 0.14 inch.

GARDEN CITY:

This has been the hottest week of the year so far, and the highest temperature ever recorded here in 45 years was registered Friday. The temperature was 111° with an 8-mile wind. It is surprising how much punishment crops can take. The field corn was cultivated this week. It is dying rapidly under the prevailing hot, scorching winds. Grasshoppers and rabbits are also taking a toll. Another round was made Friday morning at 4 o'clock with bran mash. Rabbit poison was also scattered, but the rabbits do not seem to be taking to the grain. Poisoned salt blocks will be tried to see what results can be obtained. A number of rabbits have been shot lately, but there are plenty for replacement. We never saw so many rabbits in one place at one time before. Most of them are so thin that they make only a fair shadow, but they can still eat when they find something green.

Kafir is up on the seed-bed alternates and on a couple of fallows on the rotations. Other plots show only a scattering stalk now and then. If rain should come any time this month Sooner milo will be planted and perhaps one of the early kafirs. It is doubtful if any of the June planting will mature if it should come up now.

What a mess it is going to be to try and get the wheat plots prepared for the July 15 methods. Every effort is going to be made to get the job done in as good shape as possible, but the plots may not look like anything when finished.

Maximum temperature 111°; minimum, 80°; precipitation, 0.

HAYS:

Although there was recorded on the project 0.42 inch of rain on the 11th, the week must go down as one of the hottest and driest on record with maximum temperatures ranging from 92° to 117°. Only one day did the maximum temperature fail to reach 105° and that was the first day of the week. Hot winds have been frequent. The highest temperature, 117°, occurred yesterday the 13th. This was followed by scattered clouds, local showers, and some hail, but Hays received no rain and escaped the storm. 117° is the highest maximum temperature on record at Hays for a period of 42 years. The highest previous record was 114° June 25, 1911. Evaporation from the free water surface ranged from .338 to .643 inches per day during the week. The loss of water for the week averaged .518 inch per day.

Needless to say all crops, grass, shrubs and trees are suffering severely from drought and heat. Pastures are brown. Row crops are wilting severely each day, and many of the plants are actually dying. Early corn is suffering many burned tips.

Work during the week has consisted of finishing the first operation in early seedbed preparation for wheat and rye, disking of plots which are to be plowed later, thinning of row crops, and cultivating all row crops.

Maximum temperature 117°; minimum, 70°; precipitation 0.42 inch.

TUCUMCARI:

The past week was the hottest on record, with a mean temperature of 87°. The evaporation total, 3.668 inches, also set an all-time record. Hot winds from the south have seared leaves on shade and fruit trees, and the watering of lawns and shade trees brings but temporary relief. No crops exist in this immediate locality, and it is likely the past week of hot, dry weather has spelled the finish of many struggling fields over the county where showers had enabled farmers to plant. No range grass has started, all old grass has been consumed, and farmers are complaining that weeds in cultivated fields are becoming too few and far between to support cattle which have depended on this feed the past month or two.

Maximum temperature, 106°; minimum, 67°; precipitation, 0;
Precipitation the past 10½ months, 3.06 inches.

DALHART:

The drought continued and the temperatures reached rather sustained high maximums for the week. Maximum temperatures of 104° were reached on three days. In spite of these high temperatures, the sorghums on rotations continue alive. The variety sorghums, where rye was used for a cover crop, are not standing the drought and many plants continue to die. All row plots where there is available moisture in the soil are standing the punishment unbelievably well. A rather striking difference is noticed in the kafir, milo, and corn on early fall plowing in comparison with spring plowing. The fall plowing has been suffering severely for over a week and they are considerably drought shortened. This is true even for the duplicates in the north and south fields. Soil moisture sampling shows that this difference is due to more stored moisture in plot A.

Maximum temperature for the week 104°; minimum, 66°; precipitation, 0.04 inch.

BIG SPRING:

Weather conditions over the greater part of the county have remained unchanged - hot and dry. The local rain that the station received a couple of weeks ago has caused all feed stuffs and cotton to make a good growth where stands had been obtained. The Sunac and Hegari, which was planted on July 2 has emerged to good stands. An increase block of Sudan grass hay was cut this week, but it was very light. It headed so short that it was necessary to use a grain binder to cut it. Weeds have germinated very profusely since the showers, and it has required all available teams and cultivators to get them under control.

What promised to be a good fruit crop last spring is now developing into more or less of a failure so far as peaches are

concerned. Some Early Wheeler peaches were picked this week. They had ripened at about half their normal size. Other varieties are drying up on the trees. The Evergreen planting was cultivated and hoed, and considerable plot thinning was done during the week.

Maximum temperature 99°; minimum, 70°; precipitation 0.

WOODWARD:

The maximum temperatures for the week have averaged 105°, and, since winds have been continuously high, the drying effects on foliage have been extreme. Constant watering on all spring plantings of nursery seedlings have been necessary, and this watering has in some cases been futile. Plants have needed water faster than they could take it from the soil regardless of supply. There is a scourge of red spider, especially on American elm and redcedar, and this is particularly hurtful under the dry conditions. Crape-myrtle ordinarily blooms well under high temperatures, but the past week hundreds of buds have withered without opening. The tree which looks especially fresh and inviting at this time is *Ulmus parvifolia*. This tree has never suffered freeze injury as has the Chinese elm. It has the characteristic, under some conditions at least, of growing very slowly the first few years after which growth is rapid. It shows remarkable promise both at Woodward and Tucuman, despite the fact that nurserymen have failed to recognize it as valuable for the twenty years it has been on trial in the Southwest. Another shade tree of promise for the southern plains is the Chinese pistache, though authorities seem to agree that it is too tender for conditions here.

Much of the land from which wheat was harvested has been cultivated with the one-way during the past week. This is the only implement which would make any effectual impression upon it. The rod weeder has been of remarkable help in cleaning out tenacious rooted scattered weeds on fallows and other cultivated land. Other work for the week consisted of cultivating sorghums, cotton, and cowpeas, thinning sorghums, picking fruit, spraying vineyards and nursery, and hoeing and watering nursery.

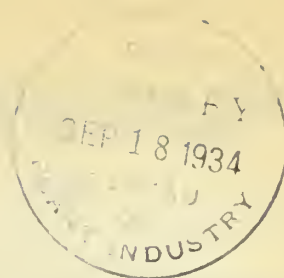
Though some of the sorghums are knee high, they are not appreciably suffering for lack of moisture. Smaller sorghums do not yet seem to have overcome the setback given by beating rains in June. All corn on the rotations and first three dates of planting tests was cut because practically dead.

Maximum temperature 108°; minimum, 73°; precipitation, 0.05 inch.

PENDLETON:

The high point of the week was the visit of Under Secretary Rexford Guy Tugwell, Dr. E. N. Bressman, and Knowles A. Ryerson, Chief of the Bureau of Plant Industry on the 10th. During the past week ideal harvest weather has prevailed, moderate temperatures, no rain or dew to delay early morning starting of combines. Many farmers have completed their harvest, and on the station the combine harvesting was completed on the 12th. About a week's work with the nursery and stationary threshers remain on the cereal project. The longshoremen's strike has created a serious gasoline shortage, with enough in Pendleton to supply local needs for only 24 hours. There is plenty of gasoline in Portland, but pickets prevent trucks or the railroads from moving it to distributing points. Several flour mills in the county have had to shut down, as all their available storage space is filled and they are unable to move any of their flour by water.

Maximum temperature 92°; minimum, 42°; precipitation, 0.



WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR THE WEEK ENDING JULY 21, 1934.

HAVRE:

The week was generally hot and dry, which is forcing maturity on all small grains. The maximum of 99° on the 19th is the highest temperature for the season to date. Evaporation was over .4 inch on 3 days with a total for the week amounting to 2.521 or .608 above the average.

Some of the early oats were harvested as were the winter wheat varieties. Most of the barley nursery was harvested. Corn was not so permanently damaged by the hail as small grains and now shows more prospect than other crops. It will, however, need more rain, and there is danger of grasshopper damage to the silks. Flax is becoming weedy and shows very little recovery from the hail. It was injured more than was at first apparent. Spring rye in the commercial fields was cut for hay. Fallow on the plots was duck-footed.

Ranges are drying rapidly. Livestock are generally in good condition where not overstocked. Many ranches are overstocked due to light sales last fall because of the low prices at that time.

Director F. B. Linfield was at the station on the 19th.

Maximum temperature, 99°; minimum, 51°; precipitation, trace.

JUDITH BASIN:

The weather continues hot and dry with no prospects for relief. Spring wheat is drying up rapidly, and some of the poorer methods will hardly pay for the harvest. All winter wheat, oats, barley and spring rye on the rotations were harvested during the week. Corn continued to make some growth, although the leaves roll badly during the day. The leaves on the Caragana are dropping, and many of the older boxelder trees are showing signs of the drought.

The steers on the pasture trials were weighed during the week, a summary of the weights follows:

Pasture	Date pasturing began	Average initial weight	Average weight July 16	Average total gain
Bromegrass	April 20	960	1,205	245
Crested wheatgrass	April 20	959.3	1,215	255.7
Native grass	<u>June 20</u>	1,054.3	1,112.5	58.3

The animals are allotted to the pastures on the basis of 1 animal to 6 acres. The food on the native pasture was practically exhausted July 16, 28 days after pasturing began, while the bromegrass and crested wheatgrass still had a good growth of grass 90 days after the cattle were turned in.

Maximum temperature, 96°; minimum, 47°; precipitation, 0.09 inch.

HUNTLEY:

High temperatures and drying winds have caused further deterioration in dry-land crops. New stands of alfalfa are badly burned, and old stands are making no further growth. Despite injuries from drought and grasshoppers, corn is holding up well. The older plants are in tassel. Sorgo and Sudan grass are making a slow growth and as yet show no effects of drought. Alfalfa seed is beginning to set. Field work has consisted of harvesting the remainder of the small grains, boeing, and poisoning grasshoppers.

Maximum temperature, 102°; minimum, 56°; precipitation, 0.

SHERIDAN:

High temperatures prevailed over the entire week until this morning (7/21), which is cloudy and much cooler. The remainder of the spring wheat in the rotations dried ripe, with the exception of that on the 1 plot in Rot. 570, the most of which emerged late. Marquis in the check plots was harvested early in the week and was fairly well filled, although shrunken some. The remainder of the durum in the rotations, with the exception of the 1 plot mentioned, is being cut today. A part of the barley in Field I, on fallow and sorgo ground, was threshed. On that part where sorgo was grown last year the yield was slightly over 8 bushels per acre, and on 3.2 acres of fallow, rogued and threshed separately for seed, the yield was about 25 bushels per acre. This morning, while cloudy and cooler, the most of the corn appears to be in fair condition with a possibility of making more growth with either cooler weather or rain. Some of it, however, appears to be burned beyond recovery, without height enough to cut with any machinery.

Mr. Ferber of the shelterbelt division of the Mandan station was at the station on the 20th.

Maximum temperature, 105°; minimum, 55°; precipitation, 0.

DICKINSON:

Hot, dry weather hastened the ripening of small grains and slowed down the development of late forage crops. Corn and millet wilted on most fields during the heat of the past few days. About one-half of the small grains on the rotations and varietal experiments were harvested. Crested wheatgrass is being harvested on the station. Yields of all crops are very light. All grains on fall plowing on the rotations are a total failure.

Visitors during the week included R. L. Shotwell, H. M. Jennison, Fox, Heaton and Griffith, Dr. C. B. Smith and family of Washington, D. C., J. A. Clark, K. S. Quisonberry, division of Cereals Crops and Diseases.

Maximum temperature, 105°; minimum, 59°; precipitation, 0; precipitation, July 1-21, inclusive, 0.67 inch.

MANDAN:

Agronomy: The past week has been extremely hot and dry, with hot winds on two or three days. All small grains burned badly during the week, and are prematurely ripe. A number of the grain plots have been mowed, as they contained very little or no grain. Corn made some progress, but wilted badly on several days. Crested wheatgrass, for seed burned badly, and much of it will not produce seed of value.

Maximum temperature, 107°; minimum, 56°; precipitation, 0.06 inch

Cooperative Grazing Experiment: All pastures dried up and turned brown during the week. Blue grama grass, which was making a good growth, is now at a standstill. The crested wheatgrass was grazed down so closely that it was necessary to move the steers to the reserve pasture.

Horticulture: Rain is needed by all horticultural plantings. The dry, hot weather is especially hard on closely planted trees and on young trees set out this spring. Some of the latter are being watered by pail in order to, if possible, prevent their dying.

Cultivating and hoeing have been in progress throughout the week. The nursery was irrigated. Sandcherries and a few of the early plums are starting to ripen. Chokecherries and Golden currants are ready for picking. Fair crops of the currants and chokecherries are being produced. Strawberries and raspberries are almost total failures this year.

107°F. was too much for vegetables. The heat scalded the fruit on tomatoes, shriveled corn and peas, and flattened cabbage and cauliflower. Late planted corn is still holding up, as are vine crops and beans. Portulacca and amaranthus do not seem to mind dry weather, much time has been spent in fighting these pests in the vegetable rows.

Hoeing has been carried on among the shrubs on the grounds. The recent irrigation caused the ground to bake among the trees and shrubs, besides stimulating weeds.

Visitors for the week included Dr. H. M. Jennison, Prof. of Botany, University of Tennessee; R. L. Shotwell, Asst. Ent. Bozeman, Mont.; F. D. Butcher, Ent. Div. of Insect Pest Survey; and J. Allen Clark, and A. C. Dillman, Cereal Crops and Diseases.

BELLE FOURCHE:

Abnormally hot weather has prevailed throughout the week. A temperature of 102° was recorded on three successive days, and the accompanying nights were unusually warm. A number of light showers were received, but in no instance was the precipitation more than sufficient to settle the dust. Corn is commencing to burn on some cultural treatments and is curling badly on all plots. Maturing of small grain has progressed very rapidly, and most of the spring wheat is ripe. Harvesting of barley, oats, and flax has been completed and cutting of spring wheat is in progress.

Maximum temperature, 102°; minimum, 58°; precipitation, 0.15 inch.

ARCHER:

The weather was hot and dry. The average maximum temperature was 97°. On July 15 and 16 the maximum temperatures were 101°. A light shower occurred July 20.

Some of the corn is burned beyond recovery, but most of it would be greatly benefited by rain. This is also true of the millet, Sudan grass, potatoes, and beans. The wheat, oats, and barley have either ripened or are in the process of ripening. The trees are showing marked need of rain.

Practically all weeding in the experimental field was completed during the week. There remains some weeding at the farmstead. The last of the second corn cultivation is in progress, and preparations for threshing and harvest are underway.

On July 19 the annual Farmers' Field Day was held at the station. About 400 farm folk and about 100 business men and others from Cheyenne were present. U. S. Senator Joseph C. O'Mahoney, Dean J. A. Hill and Director W. L. Quayle of the University of Wyoming, Mr. M. A. Thrasher of the Board of Trustees of the University of Wyoming, and Mr. W. E. Mullen, President of the Cheyenne Chamber of Commerce, made short speeches. The main speaker, Mr. Ed. F. Green of Omaha, Nebr., discussed the Farm Credit Administration set up.

Maximum temperature, 101°; minimum, 57°; precipitation, trace.

AKRON:

The extremely hot temperatures reported last week continued without break to the end of this. The past nine consecutive days have recorded maximum temperatures of 100° or above, a record not duplicated during the past twenty-seven years.

Threshing has held major attention during the week, with good progress made towards clearing the land for succeeding crops. Another week should about complete this work.

Fall maturing crops, particularly the corn, which stands about knee high, have suffered very markedly from the extremely hot dry weather. With the exception of corn it seems as if most crops would hold out for some time yet. Corn, however, promises to dry up without tasseling.

Maximum temperature, 105° on 4 days; minimum, 59°; precipitation, 0.

NORTH PLATTE:

There has been no abatement in the severity of the heat and drought here. Maximum temperatures have ranged between 102° and 109°, yesterday being the 15th consecutive day with the maximum 100° or above. The highest number of such temperatures in any previous year was 12. A shower of 0.46 inch on Monday was less than the evaporation for that day. Evaporation for the week was 3.348 inches with a new record high day of .708 and .836 inches at the table and bench tanks respectively on the 20th. Less than 20 per cent of the corn in this part of the State would now recover with abundant rain.

W. P. Snyder, who has been superintendent of the station since it opened in the spring of 1904, died July 20 from the after effects of an appendicitis operation.

COLBY:

Today is the 14th consecutive day of maximum temperatures above 100°. The high temperatures are accompanied by very hot winds nearly every day. Local showers have fallen in this section of the State, but no precipitation has fallen here.

Sorghums are holding their own, but are not making any progress. The corn is not all gone yet. The pinto beans dried up completely last Sunday, although they appeared in fairly good condition on Saturday. The listed corn was cultivated this week to level the ridges before it tasselled out. Some tassels are beginning to show. There were not many weeds and only a trace of moisture in some of the ridges. Corn following small grain made much better growth so far than following row crops. Rabbits and grasshoppers continue to thin stands. All the July tillage work for wheat was completed this week. There was some moisture below 6 inches on all the plots, so that a fair job was done. Listing after barley was almost like quarrying rock, however.

Maximum temperature, 108°; minimum, 64°; precipitation, 0; average daily evaporation, .569 inch.

GARDEN CITY:

Western Kansas is breaking numerous records these days. Today is the 14th consecutive day with a maximum temperature of 104° or over, and the 27th day this year with maximum temperatures of 100° or above. All this is accompanied by high winds and heavy evaporation. One day the wind velocity averaged 9.6 miles and the rest of the week it has been from 12 to 17.9 miles per hour. Evaporation has been running around 3/4 inch. Friday it was .823 inch.

All the kafir that came up sufficiently to thin has been thinned. No plowing has been done to date. The ground is too dry and more harm can be done to succeeding crops by trying to work the plots now than to delay until it should rain. None of the nilo has emerged sufficiently to do any thinning.

Maximum temperature 108°; minimum, 73°.

HAYS:

Possibilities of growing even small yields of feed crops are rapidly fading as the season advances with continued dry soil and extremely high temperatures, plenty of hot winds, and a goodly number of insect pests that like dry weather. The stands of row crops, originally good, are being daily reduced by drought and insects. A one day trip in company with officials of the Forage Division and Soil Erosion Division Wednesday through the northern tier of counties of the State from a point north of Hays to a point north of Manhattan revealed the fact that nearly all the corn in that section is burned beyond any possibility of making grain and much of it cannot even make fodder. Conditions over much of that trip looked even worse than conditions about Hays. Southern Nebraska is in like condition.

Work during the week has consisted in a date operation of implements in the seedbed preparation experiments for winter wheat, collection of a number of soil samples, correction of some drainage ditches, and hoeing out some undesirable weeds, including some bind weed which has crept over from an adjoining field of bind weed.

Maximum temperature, 111°; minimum, 70°; precipitation, 0.02 inch. The lowest maximum during the week was 108°, average 109°. average daily evaporation, 0.678 inch.

TUCUMCARI:

A rain of 0.69 inch the night of July 14 was the heaviest precipitation on any date since early November and brought the total since the close of August to 3.75 inches. Optimism, hunch, premonition, or that elusive phantom called hope seemed to indicate that this rain would be followed by others, so the past week the tractor was kept running from daylight to dark in preparation of land for planting, with planters following as closely as possible. Indications of rain every evening spurred on the work. Rain has not arrived, hot winds and high temperatures have dried the soil to below the seed in most instances, and apparently planting will eventually have to be repeated unless seeds now in the ground are not injured by the intense heat. All plot planting has been done, and the field cultivator has covered all crop land this week.

The second highest temperature ever recorded here, 107°, occurred July 14. The mean temperature of the month to date far exceeds all past records, 85° compared with a long-time mean of 78°.

	Week ending July 14	Week ending July 21
Mean temperature	86.5	85.7
Absolute maximum	106	107(read July 15)

DALHART:

The continuation of the dry and hot weather has further reduced the prospects for a crop on the station. There is no decided change in the condition of the crops from the preceding two weekly reports except that the prospects for the variety plots of grain sorghums decrease daily although none of the plots could be definitely abandoned at the present time. The truly remarkable thing is how the variety plots stay alive, at a height of 4 to 8 inches, through the excessive heat and with no apparent available moisture in the soil. During the week a comparison was made of the plants in the rows now, which have an average height of 4 to 5 inches, with the plants which were removed in thinning approximately four weeks ago. This comparison definitely showed that the larger part of the plants in the rows now are no larger than they were four weeks ago. The rotation plots continue to grow slowly, and many could make a fair yield if rain would come soon. A rain of 0.24 inch the night of the 14th was completely gone from the soil by the next afternoon.

Maximum temperature 105°; minimum, 65°; precipitation, 0.24 inch.

BIG SPRING:

High winds and high temperatures during the past week have not improved the crop situation in the section of the country. Many farmers and ranchers are hauling water for their stock as their home supply has become exhausted.

Station crops are holding up fairly well but are making very little growth. The sorghums were planted late and have not reached the heading stage, so they are not suffering to such a great extent as yet. Three varieties of cowpeas were harvested this week; they will produce a very light yield of hay. The milo and cotton spacing plots were thinned. It was difficult to obtain desired stands as the original stand was so spotted. Other work has consisted of cultivating increase fields and duckfoot cultivating fallow plots.

Maximum temperature 103°; minimum, 70°; precipitation, 0.

LAWTON:

The current period of heat and drought represents the longest continuous period in the station records. Precipitation of only 0.06 inch since June 15 and an average maximum temperature of 101.9° from June 19 to July 22 has been disastrous to native grasses, legumes, and most of the sorghums. Pastures are as brown as in the winter and water for livestock and domestic use is a serious problem in many vicinities.

The M. C. corn plots were harvested July 16. Grain on some of the ears was approaching maturity. The variety was Hays Golden, which appears, by far, to be the surest one for this section. Cotton and cowpeas are showing the effects of the drought, and Boll weevil have been present in the cotton since the first of the month. Both crops, however, are still in condition to respond to favorable weather conditions. Fruit on the following varieties of grapes has shriveled and dried to the extent that yields are a total loss; Beacon, Captain, Iona, Carman, Bailey, Campbells Early, Niagara, and Sheridan. Some edible fruit will be obtained from Manito and Clocta.

Dr. John H. Parker and Dr. R. H. Painter, both from the Kansas State College, recently spent several days studying the chinch bug sorghum resistance project.

WOODWARD:

Saturday July 21 is the 14th day that the maximum temperature has been not less than 104°. During this time no minimum temperature has been less than 73°. The sorghums planted in rows wither during the day and sowed feed is beginning to burn badly in spots. Earlier dates of cowpeas and soybeans are drying and dropping leaves. Cotton is still struggling into bloom and setting squares, emphasizing its suitability for dry land conditions. Peaches picked during the week have consisted of "fuzz, pith, and pits."

The dwarf silvery leaved tamarix, *T. hispida*, now has terminal spikes of clear pink bloom. *Indigofera kerkilowi* appreciates watering, but is growing freely. The fresh appearance and blooms lingering over much of summer make it very satisfactory. *Parosela frutescens*, a dainty desert plant with very finely divided leaves is luxuriating under the present hot dry conditions. *Fontanesia Fortunei* has long, narrow, lustrous leaves and is making a most vigorous growth. Willow-like in appearance, it gives promise of supplying the long sought "dry land willow."

Last spring discs of the one-way were treated with "Stoodite", a hardening material, at moderate cost. They are as sharp now as at the beginning of the season, although at least 200 acres of dry hard soil have been worked with it.

Weekly station work consisted of mowing weeds in fence rows, disking fields and trees, watering trees, shrubs and nursery, picking fruit, spraying vineyard, cleaning seed wheat, and sprouting grapes.

Maximum temperature, 109°; average daily maximum temperature 106°; minimum temperature 73; precipitation, 0.



WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

JUL 24 1934

Not for publication without prior
consent of this division

REPORT FOR THE WEEK ENDING JULY 28, 1934.

HAVRE:

The week was dry. Traces of precipitation were reported on 3 days. The nights have been warm, with temperatures rather high. Small grains are ripening rapidly and harvest is progressing. Most of the spring grain will be cut by the middle of the coming week. Flax is starting to bloom but is generally weedy with prospects of a very light crop. Corn is growing some and is silking. Combining of early spring grains was started in this locality. Prairies are very dry but livestock is generally in good shape. Shipment from the prairies has started. Second cutting alfalfa hay under irrigation is being cut. Gardens are drying. Grasshoppers seem to be decreasing, although poisoning of the plot field continued until this week. There seem to be as many on the prairies as in the fields. Maximum temperature, 94°; minimum, 50°; precipitation, trace.

JUDITH BASIN:

The feature of the past week was a two day rain July 24 and 25. The rain came too late to be of any benefit to small grains, but it will revive pastures and be of immense value to corn and potatoes. Threshing will be delayed until next week. All harvesting on the rotations will be completed today. Only a few odd plots on the Cereal and Forage projects together with a 20-acre field of crested wheat-grass remain to be harvested. Russian thistles are making a good growth since the rain, and all rotation plots promise to have a bumper crop of them before frost.

Dr. Quisenberry is spending several days at the station in the interest of winter wheat improvement. Other recent station visitors have included J. A. Clark, Cereal Crops and Diseases; Mr. Williams, Extension Forester, U. S. D. A.; and E. E. Isaac and Sam Sloan of the Montana Extension Service.

Maximum temperature, 87°; minimum, 47°; precipitation, 1.27 inch.

HUNTLEY:

A shower early in the week brought some relief from the heat of the previous ten days but was of little benefit to crops in the matter of available moisture. Sorgo and Sudan grass are the only crops which have made any noticeable growth during the week. Corn appears to be at a standstill and, although badly wilted most of the time, might still make a fair yield of forage and some grain with a little more rain. The older plantings of alfalfa will yield a light second cutting, but the young plots are dried up. Field work has consisted of soil sampling, cultivating fallow, and hoeing weeds.

Maximum temperature, 95°; minimum, 55°; precipitation, 0.56 inch.

SHERIDAN:

Temperatures over the week were somewhat lower than last week, with two fairly cool days. The average temperature for the week was somewhat above the station average for the same period, however. During the coolest weather about 75 per cent of the corn still appears to be in fair condition with a possibility of some further growth, although still very short.

All winter wheat, except some of the varieties, and the remainder of the barley, except some of the varieties and some miscellaneous late-cut plots, were threshed during the week. Just fair yields (much below the station average) were obtained on fallow, while all other tillage methods except corn ground were practically a complete failure.

Some of the grain yields are as follows, in bushels per acre:

	Average yields			High	Low
	On fallow	On corn ground	After small grain		
Winter wheat - rotations	20.9	13.9	3.3	27.7	1.3
Barley - rotations	27.3	10.6	4.3	27.3	2.3
Trebilcock - variety test	43.5				
10 acres	25.1				
Vaughn - variety test	41.3				
1.8 acres	25.6				
Burns - variety	37.8				
1 acre		11.6			
Glabron - variety	33.2				
0.5 acre	22.7				

The wide variation in yield between the plots in the varieties and on the same treatment in the rotations and fields is rather difficult to account for. The bushel weight in the varieties was much heavier, but all were cut at about the same stage of ripening, and the varieties were the latest sown and the latest ripening with the exception of Vaughn and Glabron, with which all dates were about the same for each variety.

Sheep and hogs were weighed and all sheep with lambs to be sold were placed on better pasture, consisting largely of stubble fields and some corn.

Mr. W. L. Quayle, Director State Farms, and Dr. K. S. Quisenberry were at the station during the week.

MANDAN:

Agronomy: Part of the past week was hot and part reasonably cool, with one cloudy day. No rain of value fell. Crops dried up further. Corn curls nearly every day and is badly in need of moisture. All small grain plots that showed any prospects of making a yield were harvested. The others had been mowed. Crested wheatgrass was cut for seed. Only a few pounds of seed will be obtained from all the seed blocks.

Maximum temperature, 97°; minimum, 52°; precipitation, 0.08 inch.

MANDAN, (continued)

Cooperative Grazing Experiment: Pastures dried up more during the week and are now in rather poor condition for grazing. The small pastures cannot hold out long without rain.

Horticulture: As the weather continues hot and dry the vegetables deteriorate. The only ones available at the present time are turnips, cabbage, cauliflower, peas, kohlrabi, and a few tomatoes. Sweetcorn which was in the roasting ear stage dried up before it could be used. The later plantings of sweetcorn are still looking good and if rain comes before fall night produce a good crop. Tomatoes in the breeding project are still holding their own and commencing to ripen. The crop is small and undersize but with little evidence of disease so far.

Hemerocollis, Chinese Delphinium and Coreopsis are the only perennials in bloom about the grounds. Canna beds are now very showy and should be so for the next month or six weeks.

Golden currants, chokecherries, and a few plums were picked during the week. The Golden currants and chokecherries yielded fair crops. A few new selections of these fruits were made. Opata, Oka, Tecumseh, Minn. 113, Minn. 62, and a few other plum varieties are now ready to pick. Yields will be light, and the quality of the fruit not up to standard. Sandcherries are bearing fair crops and are now ripe.

Fruit trees are being sprayed with Verdol to test the efficiency of this spray in the control of red spider. This pest is unusually bad this year, infesting almost all the different fruits and being particularly severe on currants, gooseberries, raspberries, plums, and some of the apples.

Visitors for the week included Dr. C. E. Leighty, T. E. Stoa, North Dakota Agricultural College, and H. C. J. Whitfield, Soil Erosion, Forest Service.

On Friday morning, July 27, Dr. C. E. Leighty and J. M. Stephens left the station enroute to Dickinson substation and other stations in the Northern district.

ARCHER:

Temperatures were more moderate than during the previous week. This change was accompanied with a total of 0.62 inch precipitation, 0.56 inch of which occurred during the night of July 24. This wet the soil to a depth of about 6 inches and refreshed the crops but was not sufficient to cause the corn, potatoes, Sudan grass, and millet to recover. Other crops, for the most part, are ripe or burned beyond recovery. Pastures have improved slightly. In some sections the precipitation was sufficient to fill water-holes.

Work at the station consisted of threshing winter wheat and weeding operations while the grain was too wet to thresh.

Dr. G. H. Starr of the University of Wyoming visited the station July 23 and made notes on the bunt treatment experiment.

Maximum temperature, 88°; minimum, 46°; precipitation, 0.62 inch.

AKRON:

The run of daily temperatures above 100° was finally broken this past week after 11 consecutive days. Local showers have been common over this section during the week, but in most cases the precipitation was entirely inadequate for the needs. Threshing was completed except for the nursery. Weed control also received attention. The rough pig weed and Russian thistle are quite persistent in their efforts to dominate the vegetation during this hot dry season.

Maximum temperature, 103°; minimum, 54°; precipitation, 0.22 inch.

NORTH PLATTE:

The week brought the long looked for break in temperatures. Following 16 consecutive days of maximum temperatures ranging from 100° to 109°, the past four days with a high mark of 90° have been a pleasing contrast. Showers have freshened vegetation somewhat. The first dew in many weeks has occurred, and on two mornings there has been a light fog.

Early fall plowing has been in progress on D.L.A. plots during the week. On account of the extremely dry soil this has taken an unusual amount of power, but it seemed desirable to destroy the Russian thistles that had continued to make some growth in spite of limited moisture. Temperatures: Maximum, 106°; minimum, 58°; precipitation, 0.31 inch.

COLBY:

After 15 days of maximum temperatures of over 100° every day the weather gradually cooled off this week until Thursday when the maximum was only 82°. It was a showery week with rather heavy rains in parts of this section of the State but with almost no rain here. Corn which started to head last week is making no progress and is gradually burning where it has not been eaten off by rabbits. The sorghums are continuing to hold their own on most of the plots. Weeds are scarce.

Maximum temperature, 107°, minimum, 56°; precipitation, 0.04 inch.

GARDEN CITY:

The heat wave which has prevailed in western Kansas for so long has moderated considerably, and there has been very little wind the past week. Crops continue to suffer throughout the entire area. In the farming area west of Garden City where farmers depend upon the irrigation water from the lake, fed from the river, crops are in bad condition. The water has been inadequate from the beginning, but sufficient was available so that the crops germinated and made a fair growth during the earlier part of the summer. Now the water is all gone, and the crops are in worse condition than where irrigation is not practiced. A large portion of the dry farming area is short on crops since germination was so incomplete. How these crops have held up is amazing. It is so dry that even thistles and weeds are drying up and pastures are a memory.

Irrigation on the station has been in progress daily all summer, but the crops are none too promising. In some instances the stand is not so good. This portion does not look as favorable as crops on dry land in a normal season. At any rate it is nice to be able to look around and see something resembling a stand and still green. The field corn on the D.L.A. plots is on the last lap. It

never got high enough to cut. It averages about knee high on plots that germinated reasonably early, and this is about dried up. The replanted corn is only a few inches high and doing as well as the earlier, it is dying too.

Maximum temperature 107°; minimum, 60°; precipitation, 0.14 inch.

HAYS:

After a period of 18 days of maximum temperatures ranging from 101° to 117°, lower temperatures and threatening storms the past three days have been an acceptable change. The sky is clear again and more 100° weather is indicated.

The suffering of crops, which has been very serious, has been lessened to some extent by lower temperatures the past three days, but much damage has been done. Corn and sorghums generally are suffering more on plowed ground than where planted with a lister, especially where the ground had been previously blank listed, cultivated, and the old furrows nosed out at planting time. Kafir planted by splitting ridges is much less vigorous and is suffering more than that planted by nosing out the old furrows.

Corn on the dry land project, although badly wilted every day, is not burning so seriously as that seen over the country but it is so stunted it seems impossible for it to make sufficient recovery to produce grain yields before frost even with the most favorable weather that might occur. It ranges in height from 8 to 18 inches. Kafir on plowed ground ranges from 2 to 6 inches, and many plants have already perished. Kafir planted by splitting ridges varies from 2 to 6 inches but averages slightly better than that planted on plowed ground. Kafir planted by nosing out old furrows ranges in height from 6 to 12 inches and is suffering much less than that planted by other methods. Work has included the cultivation of listed row crops, a small amount of soil moisture work, and a continuation of repair of drainage ditches and roads.

Maximum temperature, 108°; minimum, 62°; precipitation, 0.05 inch.

TUCUMCARI:

Two showers, 0.48 inch on the 24th and 0.16 inch on the 27th, were very beneficial in assisting seedlings to emerge, although of no appreciable aid to trees nor ranges. Plots planted a week to ten days ago are extremely variable, some showing excellent stands, while on others the stand is spotted. Favorable weather should spur late planted crops on to rapid growth--lack of rain the next ten days would probably cause the death of most seedlings.

Soil samples this week showed MC, milo plots to contain from 4.5% to 6.3% moisture in the first foot. The top 2 inches was dry, recent rains had added moisture to the next 3 or 4 inches, and the lower portion of the foot was dry, no moisture penetrating that deep since last fall. Thus station seeds and seedlings have been lying in a thin moist "sandwich", with dry soil above and below.

Temperatures have moderated greatly, days have been partly cloudy, with wind velocity and evaporation much lower than during preceding weeks. Recent showers have caused ranges to show an occasional green leaf upon close examination, although a cursory glance would indicate no change in the brown coloration of the landscape.

Maximum temperature, 101°; minimum, 63°; precipitation, 0.64 inch. Precipitation since January 1, 3.02 inches.

DALHART:

The drought continues with more moderate temperatures since the first of the week. Three showers during the week did not furnish moisture for plants but gave relief from the excessive temperatures of the preceding two weeks. It still remains a mystery why all sorghum plants on the first two dates-of-planting have not died. The drilled plots and the broomcorn plots are definitely dead. The forage sorghums are practically dead. While the grain sorghums are dying, there is still green showing on most all plants. The rotation plots, until this week, had hardly suffered beyond recovery. Two corn plots, rotations 88 and 89, died during the week. Several milo plots are beginning to show dead plants. Where ~~there~~ is moisture for plant growth, as on parts of fallow and margins of other plots, the milo is starting head emergence. Corn is tasselling on rotations where the plants have not died. Cowpeas, soybeans, and peanuts on cropped land are alive but have made no growth since the two weeks following emergence. Soybeans on fallow are blooming at 8 to 10 inches high. Milo on continuous cropping where milo disease had been so bad in previous years appears green and vigorous. The resistant milo, which was used for planting this year, is apparently taking advantage of moisture stored in the soil in other years when the plants died while young. An immense soil cloud, which rolled out of the north, Friday evening, apparently harmed only the cotton. The cotton leaves are blackened and burned today from this wind. This was easily the worst dust storm for one-half hour which we have had for over two months.

Maximum temperature, 105°; minimum, 63°; precipitation, 0.38 inch. Total precipitation for the year to date, 4.90 inches.

BIG SPRING:

Two light showers were received during the week, but they offered only temporary relief. The high winds which prevailed during most of the time soon counteracted any benefits that might have resulted from the moisture received. Many farmers report that both cotton and feed have deteriorated more during the past week than any previous time. The soil moisture has now been used to the point where the crops will go down fast unless rain is received soon.

Station sorghums in rotations and increase fields are growing some and still present a healthy appearance, but it will not last long after they start heading. Cultivating and hoeing weeds has occupied the greater part of the time during the week. Several varieties of grapes were picked, from which some fair yields have been obtained. Most varieties have had to be picked a little green in order to beat the birds to them.

Maximum temperature, 100°; minimum, 70°; precipitation, 0.53 inch.

LAWTON:

Searing temperatures with daily maximums ranging from 100° to 107° continued without a break the past week. The water situation within the county and some of the adjoining counties is being relieved to some extent by emergency wells and the release of water from some of the mountain lakes.

Kafir on the rotation plots in field A was harvested July 27. Only a few heads were exserted. On a majority of the plants only the tips of the heads were out of the boot. An appreciable percentage of the plants were dead and the live plants were not vigorous enough to produce grain. It is probable that a fairly good second growth will develop this fall if weather conditions improve.

Cotton has been blooming only in the top of the plants for some time. A few plants have one or two small bolls set but most of the plants are barren. Cowpea foliage is burning, and but little vine growth has been made. The ground is too hard and dry to permit plowing the crop under for green manure. The corn plots were hauled in and weighed on the 28th. A little immature grain was obtained from each plot.

The wind velocity the past week has been quite low, ranging from 48 to 135 miles for the 24 hour period. Apparently, this is responsible for considerable reduction in the high evaporation that has been so prevalent during the month.

WOODWARD: . . .

Over the past few days there have been occasional cloudiness and scattered showers and temperature has been lower than previous weeks. Sorghum crops about the country were planted unusually early this year, and many have reached the heading stage when a free supply of moisture is essential. Lacking moisture they simply tumble over. However, even at this stage many would sprout from the base and mature grain, if rain were to come soon. Rowed sorghum on the station was planted a month later than most of that about the country. It is wilting badly and some leaves are firing, but it still has capacity for heavy yields in the event of late rains.

Soy beans have a more withered appearance each day but haven't burned. Cowpeas are at a standstill, but will respond to rains. It will be interesting to note the "come back" of soybeans as against cowpeas if rain comes. Mung beans seem to remain fresher under severe drought than any of the other legumes, though varieties tried at the station haven't given the promise that cowpeas and teparies have over the past several years. Teparies are burning worse probably than any other beans or peas.

Cotton plants are very small, but stubbornly proceed with blooming and setting bolls. In the event of rains it is not expected they will make the rampant vegetative growth they would further south and at lower altitudes. Possibly the cool nights check this and stimulate the plants to produce fruit. This may explain why cotton on the high plains and at the northern edge of the cotton belt has produced such heavy yields.

The trumpet vines are blooming as freely as if there were no drought. The Heckrotti honeysuckle which seemed discouraged with blooming a week ago has apparently started all over again. Some exceedingly ornamental native flowers such as ironweed, spiderwort, verbona, etc., are making a fine show in the garden.

Station work for the week has consisted of picking fruit, watering trees and nursery, grading plot roads, and hauling brush.

Maximum temperature, 105°; minimum, 65°; precipitation, trace.

PENDLETON:

The past week has been very hot, dry, and with extremely low humidity, as low as 5 per cent in some localities. On three days the maximum was over 100°, fortunately the nights were cool. July 26, the maximum reached 106° and the minimum that night was 55°. In the big combine strings of 27 and 33 horses or nules, several animals were lost on the hottest day, due to the greater heat in the center of the string. The majority of the farmers are through harvest, only a very small percentage of the total acreage remaining uncut.

Umatilla County has been placed in the secondary drought group of counties, primarily to take care of the Butter Creek area, where large numbers of cattle and sheep are wintered over each year. The plan is to drill wells to provide water for this stock during the winter. This creek usually provides water to irrigate a fair sized tract of alfalfa land, but this year there was no water in the creek. The hot weather has killed the apids on the late sown peas, and better yields are expected in the late foothill areas. Work on the station has consisted of rod weeding the fallow, hoeing weeds along fences, and hauling in grain from field plots.

R. S. Bosser, Vice Director Oregon Experiment Station, spent a half day here on the 24th. C. Edwin Hill of the Soil Erosion Service, Pullman, Wash., was here on the 26th in the interest of a proposed erosion control district.

Maximum temperature, 106°; minimum, 41°; precipitation, 0.