WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

Not for publication without
prior consent of this division.

REPORT FOR THE WEEK ENDING SEPTEMBER 1, 1934.

HUNTLEY:

The last week has been decidedly cooler than normal for this time of year. Several days have been cloudy and smoky. A violent thunder storm of short duration occurred during the night of August 30. The amount of precipitation received was comparatively small in proportion to the commotion of thunder, lightning, and wind making up the storm. Sorgo and Sudan grass have made little progress during the week, but alfalfa, in places, has made enough growth to yield a light cutting of hay.

Field work has consisted of plowing, preparing winter wheat seed beds, manuring the plots, and hauling corn fodder.

Maximum temperature, 91°; minimum, 40°; precipitation, 0.27 inch.

SHERIDAN:

Temperatures for the past week ranged slightly below the station average for the same period. The last of the week was quite cloudy, but no rain of consequence materialized. All sorgo and Sudan grass, with the exception of a block of Sudan grass left for seed and some late seedings of sorgo, was cut. Other station work consisted mainly in cleaning grain, hauling building material, and work on the cottage being constructed.

Temperatures for the month averaged slightly under 4° above the station average. Wind movement was considerably above the average, and the total precipitation was 0.16 inch.

Maximum temperature, 94°; minimum, 41°; precipitation, 0.08 inch.

DICKINSON:

The weather was dry and cool, and cloudy four days of the week. August temperatures were normal and seemed very moderate after the extremes of early summer. Rainfall in 1934 to September 1 amounted to 6.91 inches. Deficiency for the eight months was 5.52 inches.

Corn, sorgo, and Sudan grass grown in rows in the forage trials were harvested. Increase patches of millet were hauled and stacked.

A few plums were picked from late varieties, and some tomatoes were harvested in the garden. Tomatoes are of fair quality, and about normal yields are being harvested. All plums have been small and of fair to poor quality; the yields generally were light. Apples and crabs are almost a total failure mainly as a result of a heavy frost the middle of May.

Visitors included Superintendent R. S. Towle and family of the Sheridan, Wyoming, Field Station, and Charles Clark of the Seed Department of the National Grain Corporation, Chicago, Illinois.

Maximum temperature, 85°; minimum, 34°; precipitation, trace.

MANDAN:

Agronomy - The past week has been cool with a small amount of rain. Sorgo varieties were harvested during the week. Yields will be very poor.

The total rainfall for August was 0.25 inch. This low was equalled in 1921 for August. The total precipitation for the year to

August 31 is 6.62 inches compared with the 20-year (station) average of 12.49 inches.

Maximum temperature, 85°; minimum, 37°; precipitation, 0.13 inch.

Cooperative Grazing Experiment - Pastures are becoming short, except the 100-acre which should carry the cattle during September. The 70-acre pasture is very short and will give out before the end of the month. It will be the first season that this pasture has failed to carry the cattle. It was necessary to move the bromegrass steers and the 30-acre steers at the end of 25 days in August, as their pastures were cleaned up. The 50-acre steers just held their own during August. This was because of the cotton seed cake which they are getting. It will no doubt fail to maintain them much longer.

The following are the gains of the steers for August and for the time on their pasture. The 50-acre and the 30-acre steers were not started on their pastures until July 1.

			Gain (pounds)	
Pasture (acres)	Number of steers	Days on pasture	July	Days on pasture
100	10	105	71.0	304.0
70	10	105	32.0	275.5
50	10	60	0.5	88.0
30	10	55	-38.5	36.5
70 (Rotation)	14	105	71.4	223.6
28 (Brome)	5	100	-15.0	176.0
7 (Crested wheatgrass)	4	65	-- -	170.0

Arboriculture - The removing of dead wood from the various tree plantings has been continued during the week. Many blocks have nothing left except a few stumps with a small amount of base growth.

Black walnut and honey locust seedlings in irrigated beds have made more growth during the cool weather of the past ten days than the entire growth made previously.

Horticulture - The removal of deadwood from trees in the several orchard blocks has been completed. Most of the dead wood was due to killing by drought. Some of the trees were also bolted and otherwise treated where treatment seemed to be needed. Apples were examined for blight, but no blight was found. Raspberries were pruned during the week. A considerable amount of seed is being washed out from the different tomato selections. Plum seed also has been washed out. Cuttings of geraniums and Coleus are being made.

Visitors for the week included R. L. Parshall, Division of Irrigation. R. S. Towle and family, on vacation, visited the station on August 28.

ARCHER:

Work at the station consisted of putting in the winter's supply of coal and putting up silage. The silage yields from three varieties of corn produced in the dairy field were as follows: Parson's White Dent, 2,545 pounds; Rainbow flint, 3,614 pounds, and Gehu, 2,345 pounds per acre. Parson's White Dent and Rainbow flint were harvested with a grain binder, but Gehu was cut with a hoe. This method of harvesting gave Gehu the advantage in weight. The sunflowers produced at the rate of 5,833 pounds of silage per acre.

Director W. L. Quayle and Dr. G. H. Starr, University of Wyoming, were station visitors August 30 and 31, respectively.

Maximum temperature, 86°; minimum, 48°; precipitation, 0.31 inch.

August precipitation, 1.51 inches.

AKRON:

The weather has remained cool during the week. Crops, generally, have not recovered since the heavy rains the fore part of August. Sod land grasses have greened up, especially in low places where water stood long enough to penetrate the soil. English sparrows have been especially troublesome the past ten days. They practically ruined the grain prospects in the sorghum nursery, which contained many valuable selfed lines.

Field work has been the harvesting of weed hay, partly to rid the plot field of one of the best crops of Russian thistles and pig weeds within the history of the station. Remainder of the open ground was cultivated during the week to correct the slick smooth surface condition caused by the hard beating rains the first part of August.

Dr. D. W. Robertson visited the station August 31.

Maximum temperature, 92°; minimum, 50°; precipitation, none.

NORTH PLATTE:

The weather feature of the week was a violent local wind and hail storm on the night of the 29th. The hail were small and no damage was done to buildings. Alfalfa had made a succulent growth since the earlier rains. The fourth cutting would have been one of the best of the year. It was stripped and beaten into the ground, a complete loss. There is not time before frost for much recovery. Sorghums were also badly damaged. Over an inch of precipitation fell within about 20 minutes. At North Platte 0.54 inch fell in five minutes. The flow of water from the canyons was heavy, and severe washing occurred in a number of places.

This precipitation brought the total for August to 3.99 inches, which is 170% of normal.

Maximum temperature, 95°; minimum, 54°; precipitation, 1.05 inches.

COLBY:

This has been a fairly cool week. Showers fell over most of this section of the State, but the total here has been only 0.08 inch.

All the sorghum plots are continuing to show a lack of soil moisture. Even the weeds which came up thick in most places after the showers early in the month are not making much growth. All the plots that are to go to wheat this fall, except those to be stubbled in, were worked with the rotary rod weeder, unless some other tool was called for in the outlines. This was deemed necessary even on the corn ground and bean plots, as the corn and bean plants had completely dried up and disappeared and the weeds had come up quite thick.

Maximum temperature, 98°; minimum, 52°; precipitation, 0.08 inch.

GARDEN CITY:

The past week has been somewhat cooler than the preceding weeks of July and August. On the night of August 31 a nice shower here at the station was the most recorded at any one time or any set of rains since January 1. This rain came in a slow, easy shower lasting most of the night and amounted to 0.68 inch.

The writer made a trip August 30 over seven counties, making a loop to the northeast, north, northwest, and west, covering the area where the heavy rains of the past two weeks have been reported. This took in the following counties: Ness, Lane, Scott, Wichita, Greeley, Hamilton, and Kearney, returning then to Finney. The first stop was at the C.C.C. camp in northeastern Finney County. The heavy damaging rains have done considerable damage in that area. Before my return to Garden City another heavy rain at that point, caused the Pawnee creek to again go out of its banks in flood stage. The rains have enabled the farmers over the entire

area, except locally, to get their wheat land in shape for seeding. In many places the farmers were in the fields seeding their wheat. All along the line volunteer wheat was very much in evidence. Some farmers were destroying this, others have not touched it, and still others were seeding wheat without re-working the land, depending on the drill to kill the volunteer growth. Very few row crops were in evidence. In a few places good stands were in evidence from earlier rains, and the late rains will suffice to at least make feed. It is unlikely that grain will be matured at any point covered. In a few places crops were just emerged and being cultivated. A heavy rain fell just ahead of us on the return to Garden City, coming to the west edge of town.

Field work this week consisted of getting wheat plots leveled off after the lister cultivator had been used. This was a timely move since this good rain followed immediately.

Maximum temperature, 95°; minimum, 52°; precipitation, 0.68 inch.
Precipitation since January 1, 5.15 inches.

HAYS:

The past week has been one of moderate temperatures and more rain, 1.07 inches August 30 and 0.67 inch the 31st. We are still hoping for more. The ground is in such condition it does not take moisture readily. In many places 4 inches depth finds dry, powdery soil. Volunteer wheat is now starting, and the surface soil is much improved for seed bed preparation work for wheat. All sorghums that had not perished or were not too far advanced are now beginning to make some growth and will produce more feed than seemed possible two weeks ago. As mentioned in a previous report, the best on the Dry Land project is on plots continuously cropped to kafir on which the stalks have been worked into the ground for a number of years. Since the rains the advantage these plots have over other plots where stover has been removed by harvesting or where the kafir follows wheat is more marked than before the drought was broken. And strange to say the corn on continuously cropped corn plots handled in the same manner is the only corn that has come through the drought and is now silking and has live pollen on some of the tassels. It is about 3 feet high. It is not likely there will be a crop of corn worth harvesting, but the fact this corn has come through when that on all other plots passed out is remarkable.

During the week the first operation of tillage was done on another of the date-tillage experiments. The ground plowed before the rains was very dry, but the soil seemed rotten and broke up much better than the soil turned on the two previous dates.

Maximum temperature, 98°; minimum, 53°; precipitation, 1.74 inches.

TUCUMCARI:

Cool, cloudy weather with three rains totaling 1.29 inches aided small crops materially the past week. Seedlings which survived the drought are at last making appreciable growth, and Sudan grass planted a week ago is up to good stand. Favorable weather the next six weeks may enable crops to make considerable bundle feed, although it does not seem possible for a pound of grain to be matured. Work the past week included completion of planting Sudan grass, cultivation of plot and increase crops, and field cultivation of fallows and tree rows.

The first 20 days of August showed a mean temperature of 85° the last 11 days showed a mean of 74°. Precipitation the last ten days totaled 1.83 inches, the total for the month. Total for the year to date is 4.85 inches, and for the 12 months ending August 31 it was 6.22 inches.

Evaporation for the past five months totals 58.187 inches or nearly 4 inches above the long-time average for the six-months growing season. Every month for the past 12 has shown above normal mean temperature.

Ranges are at last showing a green coloration; fall grazing should improve fast, but grass will not have time to mature sufficiently to make winter grazing.

Maximum temperature, 91°; minimum, 61°.

DALHART:

Several local cloudbursts have encouraged the populace to think that possibly the end of the drought may be approaching. Two were reported on the evening of August 31. One was approximately 15 miles northwest of the station, and the other was approximately 30 miles southeast. The one northwest of the station has filled the lake which is one-half mile north of the station, and now the spillway is a raging torrent. We are probably now isolated from town the usual 24 to 36 hours. Only 0.43 inch was received on the station. The wind velocities during the latter part of the week have been higher than was common during the hotter weather. The wind movement for the 24 hours ending August 30 was higher than any 24-hour period since June 14. Soil movement has started the latter part of the week, and there are no apparent means to check this movement on bare fields. Fortunately many of the blow fields in this locality have a good cover of Russian thistles and other weeds.

Dr. C. E. Leighty visited the station on the 29th and left for Washington the morning of the 30th.

Maximum temperature, 93°; minimum, 59°; precipitation, 0.54 inch.

BIG SPRING:

With the exception of the early dates, Station crops have shown a marked improvement during the past week. Milo is heading well now, and cotton and the sorgos are making a rapid growth. A large percentage of the crops of this county were planted early, and as a result were too far gone to be benefited by the recent rains. A large acreage of wheat is being planted for grazing purposes. If a wheat pasture can be obtained, it will be a great relief to farmers who are facing a feed shortage this winter. Much late feed such as Sumac, Hegari and feterita is also being planted with the expectation of at least obtaining roughage. Ranges have revived to the extent that offers of cattle for Government purchase have almost ceased.

Station work has consisted chiefly of cultivating sorghum, and cotton, and sowing wheat in the orchard, evergreen planting, and roadways. Broomcorn from the M.C. plots was pulled and seeded; the yield of brush was light, but it was of fairly good quality.

Maximum temperature, 94°; minimum, 62°; precipitation, none.

LAWTON:

A mean temperature of 70° for the past week - 12° below normal, 0.20 inch precipitation on the 27th, and 1.42 inches on September 1 provided relief and cheer for the distressed condition of farm operations. Rainfall on September 1 was quite variable within the county, providing considerable stock water in some places and but little in others.

Preparation of seed beds for fall sown grains will now likely be possible in most instances, and a good deal of early seeding will also be done.

The cool weather prevailing since August 23 and the presence of some moisture checked the premature ripening and opening of cotton.

Total precipitation for August, 0.77 inch; monthly deficiency, 2.12 inches; total precipitation, January 1 to August 31, 12.38 inches; deficiency for the period, 8.92 inches.

WOODWARD:

There were only two days in August previous to the 22nd when maximum temperatures were below 100°. Since the 22nd there has been only one day when the maximum has reached 95°. Minimum temperatures have been correspondingly lower. Wind velocity has been low, and partial cloudiness has prevailed.

Sorghum crops did not noticeably respond immediately to the 1.81 inches of rain that fell between the 20th and 25th, but the growth has been rampant over the past few days. Roots dug up show an astonishing amount of new growth.

Peaches and grapes picked during the week have been of far better quality than those picked previously.

Work of the week has consisted of picking fruit and cultivating all crops on the place as well as working many rotation plots preparatory to planting wheat.

Maximum temperature, 95°; minimum, 60°.

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REPORT FOR THE WEEK ENDING SEPTEMBER 8, 1934.

HAVRE:

Temperatures during the past week were about normal. There was very little wind. A trace of precipitation was recorded on the 1st, 0.02 inch on the 4th, and 0.46 inch on the 7th.

Corn has matured in fair shape on some tillage methods and was husked during the week. A very good supply of seed corn was secured, although the ears are rather small. The stover will be cut in the next few days. Some of the Dakota Amber sorgo has matured in good condition this season. Third cutting alfalfa hay under irrigation is ready to cut. Alfalfa seed is being cut, some of which has a fairly good set.

Ranges are dry. Beef cattle are in good shape in certain sections. Shipments were heavy last week, and prospects are that they will continue heavy for the next two or three weeks.

Maximum temperature, 87°; minimum, 41°; precipitation, 0.48 inch; August precipitation, 1.08 inches; Precipitation January to August, 6.34 inches.

JUDITH BASIN: (Report for the two weeks ending September 8, 1934.)

There has been no rain of any consequence during the past two weeks. Heavy smoke from forest fires has minimized the burning rays of the sun, and the weather for the most part has been pleasantly cool. The seeding of winter wheat in this locality is going rapidly forward. Soil moisture conditions are poor even on the best of fallow. Nearly all fallow is in a loose and finely pulverized condition. Grasshoppers are quite numerous and undoubtedly will damage any fields where there is sufficient moisture for germination. No seeding has been done to date on the station. Cutting of corn is about completed.

Maximum temperature, 85°; minimum, 38°; precipitation, 0.06 inch.

HUNTLEY:

The last week was again fairly cool with several threatening showers, but only a few light sprinkles of rain fell in this vicinity. Field work proceeded without interruption and resulted in the completion of fall plowing and the preparation of seed beds for fall grains. The drilling of winter wheat and rye will be finished to-day, September 8, in the rotation field and the pasture experiments. Seeding of winter wheat throughout the county has been generally confined to areas where recent precipitation has improved soil moisture conditions to the point where there appeared to be a fair chance that the seed would germinate and grow until the normal fall rains are received. A large acreage of wheat stubble is being disked to cover wheat heads cut off by grasshoppers just before harvest. This is being done in hopes that some fall and early winter pasturage may be obtained. Alfalfa seed was threshed and seed corn was picked from the breeding blocks.

Maximum temperature, 89°; minimum, 39°; precipitation, 0.12 inch.

SHERIDAN:

Weather conditions over the week were variable, some days cool and others hot for the season. The situation with respect to moisture remains the same, a light sprinkle falling this morning, September 8.

Fall plowing in the MC series of plots for all crops was done, with the E plots being subsoiled. Clearing of the remainder of the plots in the rotations to be fall plowed is in progress, the thistles being hauled and stacked for possible use as forage. The remainder of the fall plowing for winter wheat and disking of stubbled plots for that crop in the rotations was completed. Pouring the foundation for the cottage to be constructed is being completed this morning. Flax was harvested from the rotations, with the exception of one plot. On several plots there was nothing to harvest.

Maximum temperature, 93°; minimum, 36°; precipitation, 0.10 inch.

MANDAN:

Agronomy - The past week has been cool for the most part, with a slight amount of moisture. The temperature did not go below 36° at the station, but frost damage was reported on lower ground. Fall plowing was started this week. The ground is so dry that a good job of plowing cannot be done. The plowing is slow and difficult.

Maximum temperature, 89°; minimum, 36°; precipitation, 0.08 inch.

Cooperative Grazing Experiment - Feed on the pastures is becoming less every day. It now looks like the 100-acre pasture would be the only one that can carry the steers during this month.

Horticulture - Late varieties of plums and crabapples were harvested during the week. Emerald, Waconia, and Burwood plums gave fair yields. These varieties are very much alike. Fair yields were also obtained from some of the late native varieties and selections. Tony crabapples gave a high yield, but Virginia trees bore very lightly.

Cuttings of geraniums and coleus have been made. A considerable amount of tomato seed from the different selections has been washed out. Celery has been hilled up.

BELLE FOURCHE:

With the exception of two warm days the week was quite cool. No precipitation was received, and there has not been sufficient rain during the past seven weeks to settle the dust. Potatoes apparently will be almost a failure, and the yields of corn and sorgo will be very light. Sorgo was harvested September 5, and most of the corn has been cut.

Maximum temperature, 89°; minimum, 37°; precipitation, none.

ARCHER:

During the past week the weather was cool and dry with some wind and considerable haze. On the whole conditions were favorable for fall work, which consisted of finishing the silage work, cutting millet for hay, and some miscellaneous experimental work. Preparations were made for a sheep experiment. Sheep corrals were built and the ewes and lambs arrived to-day, September 8. This starts a new project at this station, by which it is hoped to derive some definite information on the harvesting of corn with sheep.

Maximum temperature, 85°; minimum, 36°; precipitation, 0.06 inch.

NORTH PLATTE:

The week has been cool with clear skies and strong winds predominating. Showers occurred on Sunday, September 2. Since that time the surface soil has dried rapidly and some soil blowing has occurred where clean land had been beaten down by the earlier rains. Field operations on the D.L.A. project has been weighing corn fodder, mowing thistles, duckfooting early plowed land, and disking corn and small grain stubble plots for winter wheat. Alfalfa has made but little recovery from the hail injury of August 29. Pastures are now greener than at any previous time this season and are furnishing some late season feed.

Maximum temperature, 85°; minimum, 41°; precipitation, 0.58 inch.

AKRON:

There was a temperature of 90° during the week, but on the whole the weather has been cool and favorable for conserving the soil moisture stored during the heavy rains the middle of August. There was a light shower last Sunday, which according to local reports was heavier in certain sections.

Work during the week was devoted towards general fall field clean-up.

Maximum temperature, 90°; minimum, 38°; precipitation, 0.12 inch.

COLBY:

This was a typical fall week, cool and rainy. Part of the time it was fairly windy, also. Despite several good starts no rain of consequence has fallen. The sorghums seem to be at a stand still and gradually drying again in spots. Most of the plots have not started to head except here and there along the edges. The fallow plots started heading some time ago but are not yet fully headed. MC C plot of corn shows an occasional ear. Weeds, which got a good start after the showers in August, seem to be disappearing.

Maximum temperature, 87°; minimum, 42°; precipitation, 0.08 inch.

HAYS:

The week was generally cool and partly cloudy. The pastures are somewhat greener than a week ago. Feed crops are making very slow recovery and little growth, perhaps due to the cool weather. As yet, none of the sorghums on the Dry Land project has commenced heading. Volunteer wheat is starting on all wheat plots and will require another cultivation to destroy it before seeding.

Work done during the week consisted largely of surface cultivating most of the plots being prepared for winter wheat. In some cases it was to reduce the size of clods, and in other cases it was to roughen-up the surface which had been slicked by the rains and was in such condition it would shed any moisture which may fall.

Maximum temperature, 85°; minimum, 45°; precipitation, 0.42 inch.

GARDEN CITY:

Since the last report temperatures have been somewhat below normal. Precipitation was recorded in small figures on two occasions immediately following the rain reported last week. This has been a rather windy week with considerable soil movement over the area. There was no soil blowing on the station.

Field work consisted of harvesting Sudan grass on the two fallow plots which were able to get a start. The growth was scant and short, but it was thought that a prospect might be good for stooling and a late fall growth. The first date of seeding of winter wheat for the foot-rot experiment was seeded, also the winter legume on the organic studies block.

Since the rain of last week we are getting good stands of crops on the plots. They are doing nicely in way of germinating, except three months late. Volunteer wheat is beginning to show up on the plots where wheat was grown in rotation a year ago. This will be destroyed the first of the week before the young plants get too much of a root growth.

Station visitors were Messrs. F. C. Fenton and Hulbert of the Agricultural Engineering Department, Manhattan, Kans.

Maximum temperature, 89°; minimum, 44°; precipitation, 0.04 inch.

TUCUMCARI:

The week has been cool with several cloudy days but no precipitation. Wind velocity was unusually high at times. A storm from the north on September 2, from 5 to 10 o'clock p.m., was so intense that highway traffic was nearly halted. With car lights turned on the visibility often was not more than 10 to 20 feet, and reports state that this dense sand storm occurred over at least a 200-mile front. Amarillo reported wind velocity of 60 miles at the air-port and 40 miles per hour in the down-town district. After the sand storm station cowpeas and beans appeared as if a heavy frost had occurred. Sorghums were "scorched", but less seriously injured than the above crops. In many cases late planted Sudan grass was completely covered.

The combination of drought, extremely hot midsummer weather, serious wind damage, and recently very cool nights united to make crop prospects very poor. Considerable roughage may be produced if rains occur soon and if frost delays until the last of October. No grain will be produced.

Work of the week included cultivation and hoeing of all tree rows, orchard, and vineyard; cultivation of nearly all increase and plot fields; preparation and seeding of wheat and rye plots; and seeding of rye in orchard and vineyard.

Maximum temperature, 94°; minimum, 48°; precipitation for the year to date, 4.85 inches.

DALHART:

Several high winds during the week have brought a recurrence of soil blowing. Fields that are devoid of vegetation blow quite freely. The shower received the preceding week causes this blow condition. An attempt was made to stop blowing in the south field by strip cultivation. No clods were thrown out, as the soil is a fine powder as deep as the shovels will penetrate. It will probably prevent severe blowing through one day's wind. Rye will of necessity have to be planted on bare fields again this winter. Soil moisture sampling shows almost universal

exhaustion to the minimum point for each foot in the 6-foot sampling. Seed dealers report a brisk demand for rye to be used for cover crop and for fall pastures by farmers where showers have been received.

Maximum temperature, 88°; minimum, 46°; precipitation, 0.01 inch.

BIG SPRING:

There has been a decided change in temperature conditions during the past week with the maximum ranging in the low nineties for the greater part of the time. Another rain, which amounted to 0.56 inch was received on September 2. This in addition to the previous ones should help late feed and cotton very materially.

Station milo is heading fast, and the late forage sorghums are making a rapid growth. Cotton is blooming freely and should make fair yields if an early freeze is not received. Cotton leaf worms made their appearance in such numbers this week that it was necessary to spray for them.

Station work has consisted of cultivating cotton varieties and spacing, hoeing weeds from rotations, cultivating fence rows and roadways, discing fallow plots, hauling in cowpeas from rotation plots, picking cotton in dates, and cleaning out feed lots.

Maximum temperature, 99°; minimum, 54°; precipitation, 0.56 inch.

LAWTON:

A rain of 0.58 inch accompanied by wind of high velocity was received on the 2nd. This rain, added to the 1.42 inches on the 1st., put the ground in shape for plowing, listing, and spring-toothing.

Cowpeas were plowed under on the 4th, and preparation of plots for fall seeding of wheat, oats, and barley has been in progress the remainder of the week. Stubble ground that was disked in July plowed very satisfactorily. Penetration of soil moisture is confined to the first foot of soil, usually the first 6 to 8 inches.

Temperatures ranged from a minimum of 53° to a maximum of 94°. The weekly mean of 72° was only 2° below the monthly normal.

A shortage of stock water still exists in this vicinity. Native grass is renewing growth, but the response to improved temperature and moisture conditions has been very slow. Alfalfa has responded more rapidly in growth, and sweet clover grown in paired rows shows considerable evidence that a fair stand will survive.

WOODWARD:

The temperatures over the week have been low, and partial cloudiness and haziness have prevailed. For this reason the sorghum crops are not making the rapid growth they would make with warmer, sunnier weather. However, 2.83 inches of rain which have fallen in small showers since August 20 insure considerable feed.

Many of the trees have reassumed the fresh green of early spring and are making considerable new growth. This, of course, may result in winter injury of the softer parts, especially of peach and grape vines. Flowering plants are starting to bloom as they would have several months ago if the severe drought had not interfered. Most of the wheat over the country will be planted early this fall to insure as large an amount of pasture as possible.

Station work during the week consisted of cultivating fields, orchard, vineyards and nursery; picking peaches and grapes; drilling wheat; and preparing for Field Day.

Maximum temperature, 97°; minimum, 50°; precipitation, 0.86 inch.

N O T E

SUMMARY OF CONDITIONS AS OF SEPTEMBER 8, 1934.

HAVRE - Dry. Precipitation for year to date, 6.34 inches.

JUDITH BASIN -Dry. Soil moisture conditions poor even on the best fallow. Fallow loose and finely pulverized.

HUNTLEY - Dry. Seeding winter wheat confined to areas of local showers.

SHERIDAN - Dry. Precipitation January - August, 6.16 inches.

DICKINSON - Dry. Precipitation January 1 - August 31, 6.91 inches.

MANDAN - Dry. Plowing is slow and difficult.

BELLE FOURCHE-Dry. Not enough rain in last seven weeks to settle dust.

ARCHER - Dry. Precipitation January - August, 8.11 inches.

NORTH PLATTE - Drought broken week of August 18. September 8, pastures greener than any other time this season. (September 10, precipitation, 2.60 inches.)

AKRON - Some water stored from precipitation of 2.96 inches week of August 18.

COLBY - Dry. Weeds that started after August showers are disappearing.

HAYS - Dry. Soil wet to about 4 inches September 1. Volunteer wheat starting.

GARDEN CITY -Dry. Precipitation January - August, 5.15 inches.

TUCUMCARI -Dry. Precipitation for year to date, 4.95 inches. Bad sand storm September 2.

DALHART -Dry. Soil is a fine powder, blowing. No soil moisture.

WOODWARD -Precipitation of 2.83 inches since August 20 insures considerable feed.

BIG SPRING -Late crops growing from precipitation of 2.94 inches week of August 25 and 1.10 inches since.

LAWTON - Precipitation of 2.28 inches since August 23 put ground in shape for plowing, etc.

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REPORT FOR THE WEEK ENDING SEPTEMBER 15, 1934.

HAVRE:

The first frost of the season occurred the night of the 14th with a temperature of 32°. Showers occurred every day. Corn has been husked and the stover is now being cut. Yields of corn will likely range from less than 5 to nearly 25 bushels. Early seeded winter wheat is up. Mr. J. E. Hodgkiss and Mr. Nelson both with Rural Habilitation were station visitors on the 13th. Mr. Nelson has the grazing work and was with the Forest Service for several years.

Maximum temperature 76°; minimum, 32°; precipitation, 0.53 inch.

JUDITH BASIN:

Several light showers occurred during the week, but not enough moisture was received to be of much value. Winter wheat seeded on clean fallow is emerging with very spotted stands. Grasshopper poisoning on newly planted wheat fields is quite general. Winter wheat on the rotations was seeded during the week. On most plots the soil was extremely dry. Potatoes were dug with yields on all plots averaging about 4,000 pounds per acre. The potatoes were of fair size, about two-thirds of them grading No. 1.

Maximum temperature, 80°; minimum, 35°; precipitation, 0.36 inch.

HUNTLEY:

The fore part of the week was bright and warm, but the last half was cool and cloudy with rain followed by the first frost of the season. Injury by frost was light; with only tender garden crops, sorgo, and Sudan grass showing any effects. The moisture received was hardly enough to penetrate to the depth of seeding of winter grains but should germinate much of the shattered grain which has been disked under for fall pasture.

Field work has consisted of mowing alfalfa, weighing and removing the hogs from sorgo - Sudan grass pasture, planting the smut nursery, and doing some odds and ends of painting.

Maximum temperature, 91°; minimum, 30°; precipitation, 0.46 inch.

SHERIDAN:

Hot weather over the middle of the week was followed by light rain and the first killing frost of the season on the station, although there had been some frost previously in nearby sections. The frost of this morning was quite general and killed practically all tender vegetation on the station, with the exception of the highest cultivated land on the south of the highway, where vines did not appear to be injured.

Clearing land to be worked this fall of Russian thistles and hauling and stacking same was continued during the week. Corn fodder from the rotations was hauled. Not enough ears were formed on any of the corn to husk for grain. The one plot of flax and the remainder of the sorgo and Sudan grass left standing were harvested this morning.

Mr. Babb and Mr. Krause of the Cheyenne Station were here the 13th.

Maximum temperature, 93°; minimum, 29°; precipitation, 0.45 inch.

DICKINSON:

A heavy frost last night killed nearly all that remained green in the fields and gardens. Corn on fallow and the continuously cropped plots on the rotations was cut September 14. A fairly good yield of ears matured on the fallow plot, and the fodder on the spring and fall plowed continuous plots was much better than other plots in rotation. Six loads of Russian thistles were run into the silo. More would have been put in, but even thistle is scarce this year. The soil is so extremely dry that fall plowing and seeding of winter wheat and rye are being further postponed.

Maximum temperature, 93°; minimum, 18°; precipitation, September 1 - 15, 0.14 inch.

MANDAN:

Agronomy: Part of the past week was very cool, and a couple of days were warm for this time of year. High winds blew on two days. A heavy frost occurred on the night of the 14th, when the temperature went down to 24°. Practically all live vegetation was frozen. Fall plowing was completed during the week.

Maximum temperature, 90°; minimum, 24°; precipitation, 0.05 inch.

Cooperative Grazing Experiment: Steers were moved from the 70-acre, rotation, and 50-acre pastures at the end of 15 days in September.

The steers in the 70-acre pasture just held their weight during the 15 days, and their pasture was bare. The rotation steers lost 30 pounds per head, and the 50-acre steers lost 24 pounds per head. The 3 pounds per head daily of cotton seed cake that the 50-acre steers were getting failed to maintain them. They had practically no grass in the pasture. This is the first time in the history of the experiment that the 70-acre pasture failed to carry the steers through the season.

Horticulture: Dead wood previously cut out in the orchards was hauled away, and young trees, set out this spring, were irrigated during the week. The last of the fruit picking and gathering of tomatoes for seed was completed on the 8th. A goodly amount of tomato seed from Selections 2, 4 and 6 has been secured in spite of the rather light crop in general.

Vegetables were almost a total failure. Cabbage, peas, and a light yield of carrots, beets, potatoes, and tomatoes, were the only crops realized on. Owing to drought, heat, worms, smut, and the depredations of black birds, sweetcorn was an utter failure in all plantings.

The grounds are being given the last irrigation before the freeze up. Lawns and existing plantings are in good shape, so far. Ornamental plantings consisting of geraniums, cannas, coleus, and other tender material were finished off by last night's frost, which was severe enough to kill leaves on grapes, potatoes, squash vines, etc.

BELLE FOURCHE:

Abnormally hot weather prevailed for a brief period during the middle of the week, but the last two days were quite cool. The first killing frost of the season occurred on the morning of September 15, following a cold drizzling rain on September 14. The temperature remained below 30° for over two hours, and most of the late crops were damaged. Corn leaves were frosted, but only the tops of potato and tomato vines were killed.

Drilling of the artesian well on the station has progressed to a depth of 2,445 feet. The first water bearing rock (Dakota sandstone) was entered at a depth of 2,400 feet, but the pressure was only sufficient to bring the water within about 300 feet of the top. Drilling will be continued to the Lakota sandstone, at a depth of approximately 2,500 feet, from which a heavier flow of water and greater pressure are expected.

F. A. Hays, Bureau of Chemistry and Soils, has made his headquarters at the station during the week while conducting soil investigations on the Belle Fourche Irrigation Project.

Maximum temperature, 94°; minimum, 29°; precipitation, 0.21 inch.

ARCHER:

During the past week the weather, on the whole, was clear and mild. The first frost occurred during the night of September 14, The temperature reached 27°, which killed all tender plants. A shower totaling 0.22 inch occurred the night of September 8. This made conditions ideal for the seeding of winter wheat on fallow. However, on cropped land the soil was not sufficiently moist, even if the seed germinates, to maintain growth. Work at the station consisted of seeding the winter wheat plots, harvesting beans, and making further preparations for the sheep experiment.

A. R. Midgley, Research Agronomist of the Vermont Experiment Station, Burlington, Vt., and W. L. Quayle were station visitors September 13 and 14, respectively.

Maximum temperature, 85°; minimum, 27°; precipitation, 0.22 inch.

NORTH PLATTE:

The week opened with the heaviest rain of the season, bringing the rainfall for the first 10 days of September to 3.23 inches and for August 5 to September 10 to 7.22 inches. Temperatures were seasonable to high for most of the week and dropped off sharply at the close. Light frost, the first of the season occurred last night, September 14. Temperatures were 1° and 2° above freezing at the bench and table stations, so the frost damage will not be heavy.

Tillage for winter wheat seeding has been completed and all plots will be put in during the coming week. A small winter wheat nursery was seeded on the 13th. Moisture conditions are ideal, and germination should be complete within a short time.

The unusual climatic conditions of the summer have brought out interesting reactions in different native grass species. Blue grama and buffalo grass showed almost immediate response to the arrival of moisture. Little bluestem (Andropogon scoparius) shows a high percentage of killing, and surviving plants are weak and slow in recovering. Prairie grass (Sporobulus cryptandrus) has made a relatively heavy fall growth, and where not pastured is setting an abundant seed crop

Station visitors include W. W. Burr, C. A. Suneson, J.H.Claybaugh, and J. C. Alder, of the Lincoln Station.

Maximum temperature, 89°; minimum, 34°; precipitation, 2.84 inches.

AKRON:

There was 0.43 inch of rain early in the week, which seems to be sufficient to wet the surface soil down to the moisture stored from the rains early in August. Thus fall seeding operations will be made under favorable conditions for prompt emergence and for sufficient fall growth.

A temperature of 30° on Friday night did limited and spotted damage to tender crops, except in low areas, where the damage was complete to such tender crops as tomatoes. There are still many promising fields of green pinto beans throughout the country which should have at least another ten days of frost-free weather. The recent frost does not appear to have more than nipped the topmost leaves of these still green beans.

D. W. Robertson, T. G. Stewart, and Dean Anderson of the State College visited the station this week end.

Maximum temperature, 92°; minimum, 30°; precipitation, 0.45 inch.

COLBY:

The weather this week alternated between summer and winter. Four days were hot and three were cold, with maximum temperatures ranging from 92° to 59° and minimums ranging from 59° to 35°. It rained all day Sunday, the 9th. Most of the time it was just a drizzle with intermittent easy showers. The total at the station was 0.65 inch, but many localities in this vicinity got much more.

The soil on the station is not wet down enough to insure good germination of wheat, if planted now, without additional moisture falling. Rain threatened nearly every night, but only a trace has fallen since Sunday. Yesterday was cold, and temperatures were near freezing this morning.

Maximum temperature, 92°; minimum, 35°; precipitation, 0.65 inch.

HAYS:

During the week the weather has been generally mild, temperatures ranging from 40° to 95° with some cloudiness and a small amount of rain. Winter rye was seeded for green manure September 14. The late plowing and late disking as seedbed preparation work for winter wheat is being done to-day, and some cultivation for the destruction of volunteer has been done. Soil samples for moisture determinations were taken on a number of plots. Other work during the week has consisted largely of ditch repair and road work.

Maximum temperature, 95°; minimum, 40°; precipitation, 0.36 inch.

GARDEN CITY:

The week has been moderately warm as a whole with cool nights. One day was unusually windy for about 20 hours. This was followed by two days of cooler weather, cloudy and two small showers. Not enough moisture was recorded here to do any good.

The first date of planting of winter wheat for the foot-rot experiment has emerged some but not to a full stand. The second date of the foot-rot seeding was made to-day in a dry seed-bed. The winter peas have not germinated, as there was not enough moisture present and none recorded since planting to cause germination.

Field work this week consisted of seeding, plowing, listing, leveling, and rod weeding. The late preparation plots were plowed and listed and put in shape for planting. All wheat plots, including fallows, were gone over with the rod weeder to kill the growth of volunteer wheat, weeds, and grass which came rushing through after the rain of two weeks ago. The late prepared plots are working in good shape. The early preparation is rough and cloddy enough to afford good protection against soil blowing. The plots are in good shape aside from moisture, for seeding.

Station visitors were T.B.Stinson, Tribune Station, Mr.Grandfield, and Dr.Tysdal. Dr. Tysdal is a member of the Experiment Station Staff of the University of Nebraska. He is here looking over alfalfa fields for wilt, etc.

Maximum temperature, 97°; minimum, 42°; precipitation, 0.24 inch.

TUCUMCARI:

Cooler weather and periods of high wind movement characterized the week. Milo planted the middle of July is showing a few heads, but the leaves are rolling due to lack of moisture. Crops planted late in August are attempting to grow, but winds have injured them. Wheat and rye seeded September 7 have not emerged to stand.

Work included overhauling tractor; knifing late increase crops; fencing wheat and rye plots; cutting alfalfa for seed; and cultivation of alfalfa to kill numerous small weeds between the rows. Only one cutting of alfalfa was made this year. The plants were so short it was necessary to use a buncher attachment, with tin platform, to avoid loss of many stems. In spite of short growth, it appears that the short, dwarfed shoots carry a fair amount of fairly plump seed.

Ranges began growth after the rains of late August, but many plants show no green, giving the range a spotted, semi-bare appearance. At present all grass land is again in need of moisture. Livestock are improving in flesh, but there is still no hope for winter grazing, and late, small crops will offer but little bundle feed. Range improvement of the past two weeks simply means that livestock will go into the winter in somewhat stronger condition than was feared.

Visitors included Messrs. Locke, Johnson, and George.

Maximum temperature, 95°; minimum, 46°; precipitation, none.

Precipitation since January 1, 4.85 inches; since September 1, 1933, 6.22 inches.

DALHART:

With a total of 1.36 inches of rain in two showers during the week, the prospects for securing stands of winter wheat and rye this fall are much brighter. The first rain of 0.65 inch came the evening of the 8th. Winter rye was seeded for a cover crop on the first four days of the week. All cultivated tree plantings and the vineyard were seeded first. The plantings made Monday are showing excellent emergence to-day, Saturday. As the moisture content of the surface soil was too low by Thursday evening to expect germination, it was thought best to delay further seeding as the worst of the areas that would blow were already seeded. Friday night of this week another rain of 0.71 inch was received. Planting will be resumed Monday, the weather permitting, of the rest of the cover crop and of the rotations of winter wheat and rye and the winter wheat varieties. Three days should finish the seeding. While the showers were rather general, the amounts in different localities varied considerable. We probably received about average amounts of the two showers.

Visitors during the week included Messrs. George, Locke, and Johnson of this Division, and B.F.Kiltz on leave from the Oklahoma A & M.

Maximum temperature, 94°; minimum, 44°; precipitation, 1.36 inches.

BIG SPRING:

The first real norther of the season is on hand to-day, and it presents quite a contrast to the warm days which have prevailed during the rest of the week. More warm weather and also rain are needed to mature fair yields of cotton and sorghums on the station. Milo is in full head now, and has been wilting some during the past few days. If more rain is not received during this critical period, grain yields will be sharply reduced. Station work has consisted of disking and seeding roadways, cultivating late planted increase feed, hauling dirt, and hoeing out fence rows.

Maximum temperature, 95°; minimum, 62°; precipitation, none.

WOODWARD:

There have been showers on six days of the past week, with a total rainfall of 0.86 inch. This makes 3.59 inches since August 20 when our "wet spell" started. Farmers are all exceedingly busy preparing land and planting it as rapidly as possible, so as to secure as great an amount of wheat pasture as they can. Sorghums have responded to the plentiful supply of moisture very slowly because of the continuously cool weather. Milos are responding more rapidly than kafirs, as is usually the case to either favorable or adverse conditions. Alfalfa, much of which was nearly dead, seems to be responding very slowly to the moisture in the soil. Only over the past week has much new growth started.

Lilacs are blooming, the intense heat and withering of the leaves perhaps acting as the dormant period of winter would. It is not improbable that other plants normally blooming in the spring will bloom this fall. This spring the foliage was very heavy on all plants, and it is probable that they did much toward maturing buds and wood before they were checked and withered by the heat and drought of July and August. Crape myrtle is making a particularly fine showing since the rains set in as are a number of other fall blooming plants such as caryopteris, parosela, many salvias, and asters. Shrub althea and the mallows are starting to bloom all over again. There will be a festive display of color during the remainder of the fall.

Work for the week consisted of drilling wheat in windbreaks, drilling clover, treating seed wheat to prevent smut, repairing machinery, counting wheat samples, spreading manure in orchard, cleaning fence rows, making nursery cuttings, budding trees, picking peaches and grapes, and trapping gophers.

Maximum temperature, 97°; minimum, 47°; precipitation, 0.86 inch.

PENDLETON:

Work on the station the past week has consisted chiefly of clearing up odds and ends of the season's work. Corn is the only remaining crop to be harvested. Precipitation for the crop year September 1, 1933, to August 31, 1934, was 12.71 inches, this was 1.24 inches less than the 5-year average. A good rain of at least an inch is needed now to start the weed growth on fallow before seeding time. Our fallow soils are dry to a depth of 5 inches. To date we have had no rain in September, the days have been bright and warm with cool nights. From the station we are distributing a new wheat for trial among the farmers of this section, which is winter hardy, smut resistant, non-shattering, and about as early as Federation.

This wheat is a cross between White Odessa and Hard Federation. On the station the Federation variety has outyielded the hybrid about 2 bushels per acre. It is hoped that this hybrid wheat will replace Albit and Hybrid 128, which it outyields on the station. The Soil Erosion Service of the Interior Department is planning an erosion control district in this county comprising about 25,000 acres, lying east and north of the station. The Soil Erosion Service will furnish seed of grasses and legumes, equipment for seeding, supervise seeding, furnish material for and build dams in the gullies, the farmer furnishing the power to grade and pull drills. The farmer has everything to gain and nothing to lose in such a program. C.E.Hill, formerly of the Waterville, Wash., Station is in charge of the preliminary work on this project and has spent several days on this station.

Maximum temperature, 78°; minimum, 35°; precipitation, none.

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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

Not for publication without
prior consent of this division.

REPORT FOR THE WEEK ENDING SEPTEMBER 22, 1934.

HAVRE:

The first killing frost of the season occurred on the 19th with a minimum temperature of 23°. Since then it has been stormy, and to-day snow is falling. In the mountains, snow has been falling since Wednesday. Roads are drifting some, and to the west are almost impassable. Some sleet has fallen. This has caused a large amount of damage to trees, as very few leaves have fallen. Winter grains were seeded and most of the corn stover was cut. Third cutting alfalfa hay is ready to stack. The remaining alfalfa seed was cut. Superintendent Dan Hansen of Huntley was a visitor on the 21st and 22nd.

Maximum temperature, 78°; minimum, 23°; precipitation, 0.40 inch.

HUNTLEY:

Much of the last week has been cool and damp with foggy mornings and one light rain which turned to snow before the storm ceased. A light frost was received after the shower, but the injury to garden crops was small. Sorgo and Sudan grass are showing more damage as a result of the frost of a week ago than was apparent during the first few days after its occurrence.

Reports from neighboring dry-farming localities state that the precipitation of the last two weeks has been sufficient to germinate early sown winter wheat and that seeding operations are being rushed. Because of the acreage of wheat being stubbled in this year, the total area in winter wheat this fall will probably be greater than that sown a year ago.

Poor drying conditions have delayed haying operations. Some of the alfalfa cut a week ago is still too damp to haul.

Maximum temperature, 83°; minimum, 31°; precipitation, 0.19 inch.

SHERIDAN:

The extended drought finally was broken here at least temporarily by heavy snow on the evening of the 19th. About 8 inches of snow fell on the station, the heaviest snowfall yet recorded here for September. This brings the total precipitation for the month to date to 1.13 inches, still considerably below the station average for the month. Apparently, however, the moisture has penetrated so that shallow plowing will now be possible with a moldboard plow. Plowing with the tractor disk plow was continued over the first three days of the week on plots in the rotation field that could be paired so as to plow with a one-way plow. It appears now that plowing of those plots that could not be paired may be done with a 2-way plow. Seeding of winter wheat in the rotations and extra tillage plots and of all winter rye was completed. More land also was cleared of Russian thistles, which were stacked for hay.

Maximum temperature, 84°; minimum, 29°; precipitation, 0.80 inch.

MANDAN:

Agronomy - The past week has been cool and dry. Corn fodder was hauled in during the week. The yield was very light, running from 600 pounds per acre in the rotations to 2,250 pounds per acre on fallow. Potatoes were dug. The yield was very light, and the potatoes were poor. The yield was 14 to 17 bushels per acre.

Maximum temperature, 84°; minimum, 25°; precipitation, Trace.

Cooperative Grazing Experiment - The steers continue in fair condition, but those on reserve pasture are getting short of feed. The 100-acre steers still have enough to eat in their pasture.

Horticulture - Potatoes were dug on September 20 and 21. The vines of late maturing varieties had been killed by frost on the night of September 14, and the potatoes skinned easily upon being run through the grader. Yields were low and small sizes predominated. Long shapes in some of the varieties indicated considerable spindle tuber present. Katadin, a new variety put out by the U. S. D. A., was the highest yielder under test, but the tubers were somewhat immature at digging time. Spacing hills at 14, 20, and 24 inches apart in the row seemed to have but little effect on the yield this year. Other work included watering budded stock, washing out plum seed, and hauling brush.

Arboriculture - A small crew has been engaged through the week cutting out the dead trees in the station shelter belts and tree blocks. A tractor will be used to remove the roots later.

Visitors of the week included Director F. P. Trowbridge and Prof. J. A. Munro, N. Dak. Agricultural College; and F. E. Cobb, State Forester, Bottineau, N. Dak.

BELLE FOURCHE:

Cold, raw, windy weather prevailed throughout most of the week. The first snow of the season followed a light rain September 19. The ground was covered with wet snow to a depth of nearly 2 inches, and a total of 0.43 inch precipitation was recorded. The snow disappeared rapidly, but a heavy frost occurred the following night, and only the more hardy crops escaped injury.

Fall plowed land has been too dry all fall to enable the hard soil lumps to be worked down into a possible seed bed, until after the recent rain and snow. All winter wheat plots were prepared for seeding during the latter part of the week, and plowing of corn stubble plots was completed.

Visitors included J. W. Wilson, Director, S. Dak. Experiment Station; A. L. Baker, Ardmore Field Station; J. M. Cooper, Sheep Experiment Station, Dubois, Idaho; and F. A. Hayes, Bureau of Chemistry and Soils.

Maximum temperature, 86°; minimum, 27°; precipitation, 0.43 inch.

ARCHER:

During the past week the weather was unsettled with rather extreme temperatures. The fore part of the week was threatening, during which time a light snow and freezing temperatures occurred. Most of the winter wheat seeded on fallow land has emerged with fair stands, but hardly any of that seeded on cropped land has emerged. Most of the season's vegetation is dry, and the leaves are falling from the trees.

The lambs are being herded in the corn field, and the ewes are cleaning up the silage field after the cows had cleaned what they would from it. It is apparent that the ewes are much more efficient than the dairy cows in cleaning up a field. The dry stock are doing well on the Sudan grass and Russian thistle pastures, where the dairy cows could not maintain production.

Work at the station consisted of hauling hay and spraying white weed.

Maximum temperature, 85°; minimum, 28°; precipitation, 0.09 inch.

NORTH PLATTE:

Winter wheat varieties and the winter wheat in the D. L. A. project were seeded during the week. The weather was cool and windy during most of the week, but no frost has occurred as yet. Owing to the cool weather late seeded feed crops have made rather slow growth.

Maximum temperature, 83°; minimum, 34°; precipitation, 0.13 inch.

AKRON:

Thursday was a disagreeable day such as to preclude any outdoor field work. Snow fell at one time for about 10 minutes. Generally the weather was favorable for the consummation of fall work. The rotation plots were finally made ready and seeded Friday. There is good prospect for prompt emergence on at least half of the plots. The cereal varieties are being seeded to-day with excellent prospect for prompt emergence on both cornland and fallow preparation. The fall maturing crops are at last showing some indication of ripening. There will be a light crop of dry beans and of the grain sorghums on fallow.

Messrs. Coen, Thom, and Foster, connected with FERA surveys, visited the station during the week.

Maximum temperature, 90°; minimum, 33°; precipitation, 0.15 inch.

COLBY:

This week has been dry and generally cool and windy. A light killing frost occurred on the morning of the 21st. Very little damage was done even to garden crops. Having gone through such a hard season, the vegetation seems to be able to stand anything now. On some of the corn plots in the M. C. series, stalks that came up in May and never got over a foot high are still green. The sorghums are making almost no headway. Some of the fallow plots that started heading at the beginning of the month are not yet fully headed. Pastures have greened up some.

The winter wheat and rye plots were seeded the first of the week. It was not necessary to use the one-row drill for any of the row-crop plots this year. The growth on the corn and bean plots had disappeared long ago, and the milo growth was not heavy enough to interfere with the big drill. There was some moisture in the seed bed on all the plots, but it is doubtful if there was sufficient moisture on any to insure prompt germination. The ground was clean and in excellent condition otherwise. Soil samples showed moisture down to a depth of 2 feet on the fallow, but almost none beyond the first foot in the cropped plots.

Maximum temperature, 88°; minimum, 30°; precipitation, Trace.

HAYS:

There was a narrow escape from frost on the morning of the 21st. Although good rains have been reported in various parts of the State, they have been very local in nature. It appears that drought has been resumed in this section. Sorghums continue making very slow gains, only a few heads showing at this time.

During the week all surface tillage in preparation for seeding winter wheat was finished, and stake setting in preparation for drilling of the plots was finished the 21st. To-day soil samples are being collected for moisture determinations from one series of plots to represent the date of seeding condition. Seeding of winter wheat will begin Tuesday the 25th if favorable weather conditions continue.

Maximum temperature, 98°; minimum, 33°; precipitation, Trace.

GARDEN CITY:

This has been a week of rather high wind and soil blowing. On several days the dirt was moving on all sides of the station. One night the temperature dropped to a little below 32° but did not stay down long enough to do any damage beyond marking tender vegetation.

The soil moisture which was recently recorded is all gone, and the soil is in about the same condition it was during the summer. The second date of planting of wheat for the foot-rot experiment is not up yet, and the first date has not emerged to a good stand. The winter peas have not emerged and will not until we get a good rain. Weeds were burned along the fences this week with the weed burner. Mexican sand-burs were cleaned off the plots and piled for burning as soon as dry enough. One good the late rain did was to cause these burs to germinate all over the station so late that they can not produce seed. Stub tongues were built and put in the drills for using the tractor. This will be a big time saver when it comes time for seeding the plots. Heretofore the teams have been used on the drills for planting.

There will be very little grain matured in this section of Kansas this year. All along the valley and up on the ridge where farmers were able to irrigate their fields before planting and obtained fair to good stands of sorghum or corn, the crops are about to the stage now they should have been a month or more ago. There is not a possible chance for these to mature seed before frost. In some fields the crops range from just past the bloom to no blooming or heading at all. Bird damage on the earliest of these fields has been unusually heavy. Livestock seems to be holding out exceptionally well. It is surprising how the cattle are keeping in good condition on wheat stubble and thistles. The farmers have put up every available acre of thistles for hay and in a few instances are cutting Mexican fireweed (Kochia scoparia) for hay.

Maximum temperature, 95°; minimum, 32°; precipitation, none.

TUCUMCARI:

Climatic conditions have varied greatly the past week, with the exception of continued drought. On the 20th the maximum reached 92°, to fall to 40°, the lowest recorded this fall, that night. Periods of calm have been preceded and followed by unusually high winds. No precipitation has fallen this month, and with a total of only 4.85 inches since January 1 the late, small crops are making but little headway. It is unlikely that sufficient growth will be made to cover the ground to minimize soil movement effectively.

Many cattle have been killed or shipped out of this locality the past six weeks, but the pitifully scant range grass and occasional crop of bundle feed will be far from adequate to carry the remaining livestock through the coming winter. Some work has been done the past week in harvesting Yucca glauca and running it through the station silage cutter. This is the only range plant in this locality growing in sufficient abundance to offer any practical solution to the problem unless exceptionally high priced feed is shipped in. State College has been requested to analyse this chopped yucca.

Caliche has been hauled to roadways, and late cultivation to kill noxious weeds has been performed.

Maximum temperature, 94°; minimum, 40°.

DALHART:

This week saw the completion of the winter wheat and rye seeding. Winter wheat was seeded in moist soil, but it is considered doubtful if stands will be obtained. High winds on two days, Thursday and to-day, Saturday, have dried out the surface soil and caused severe injury to emerged rye seedlings on exposed slopes. The rye seeded in the trees and vineyard now shows up to good advantage with good stands and apparently with vigorous plants. The high wind movement is causing considerable worry as to how severely our soil may blow this winter. Without subsoil moisture it is going to be virtually impossible to control soil blowing with high wind movement.

Maximum temperature, 91°; minimum, 37°; precipitation, Trace.

BIG SPRING:

Temperatures this week have been very warm during the day, but the nights have been very cool. The late feed crops, which made such rapid growth after the August rains, are now showing the need of more moisture. Some of the milo plots are burning and probably will not develop the sucker heads under present moisture conditions. Winter wheat which has been seeded for pastures is also in need of moisture.

Station work has consisted of harvesting broomcorn from variety date test, picking cowpea and soybean seed, and picking cotton. An increase field of Sudan grass was cut, as was also the Sudan plots. Other jobs consisted of hoeing weeds and making stand counts.

Station visitors during the week included Mr. George of the Mandan station and Messrs. Locke and Johnson of the Woodward station.

Maximum temperature, 101°; minimum, 49°; precipitation, none.

LAWTON: (Report for the two weeks ending September 22, 1934)

Drenching rains were recorded in surrounding territory during the past two weeks, but not in this vicinity. Stubble ground that has not been tilled since harvest is very hard and dry, Penetration of the one-way disk plow on such soil is 3 to 4 inches. Seedbeds on small grain rotation plots and on land including cooperative small grain projects are in good shape. Rotation plots of wheat and barley, probably, can be seeded with sufficient moisture to provide emergence.

The winter oats variety test and the first seeding of winter barley in the date test was made September 18. This land and that to be used for the wheat variety test required considerable extra tillage to destroy volunteer oats, and the surface moisture is now insufficient for uniform emergence. Early seedings of oats, wheat, and barley throughout this part of the State emerged rapidly and subsequent growth has been very satisfactory. Sweet clover grown in paired rows on rotations 133 and 134 did not survive the summer drought. The plots were disked and will be reseeded this fall if moisture and frost conditions permit. If seeding conditions are not favorable, the work will have to be delayed until next spring. A dry, terraced hillside seeded to sweet clover in paired rows last spring is now showing a good, growthy stand.

Cotton has opened quite extensively the past two weeks, and fair progress was made in picking. One local ginner, quite familiar with the cotton acreage in this county, estimates the county yield at about 6,400 bales. This is about one bale on 13.6 acres. Sandy land farms in the eastern part of the county and creek bottom fields will produce about three-fourths of the total crop. The second picking on

the station will probably start within a week.

Maximum temperatures the past two weeks ranged from 65° to 92° and the minimum from 45° to 74°. Precipitation, 0.99 inch.

WOODWARD:

The past week has been cool with slow growth of the sorghums. While sowed feed responded somewhat to the rains, it did not do nearly what was hoped for it, due, perhaps, to having suffered too long from drought as well as to cool weather following rains. Sharon kafir in rows was very slow and backward in response, but Sunrise made rapid growth and headed nicely, as did milo, except on the poorer, sandier spots where it had suffered most. However, cool weather has so delayed development of sorghums that there is practically no hope of a grain crop over the country. Seed next spring will be a difficult problem.

Cowpeas responded much better to the combination of rain and low temperatures than did the sorghums - making a heavy growth.

Soil has remained moist, so that conditions for getting an early stand of wheat have been very fine. Probably a larger percentage of wheat has been rushed in early than ever before in order to insure pasture. There has also been a revived enthusiasm for planting winter barley, because of its heavy fall growth. This had become unpopular and was planted hardly at all, because it so frequently winter kills.

Foliage of trees and shrubs are taking on winter colors and many are dropping, probably because they were practically dead when drought ended a month ago.

Seeding of practically all wheat and rye except on the Cereal project and a few odd corners was completed during the week. Wheat in orchards, roadways, and windbreaks is already up to a nice stand. This is always planted early to insure a cover. Other station work of the week consisted of harvesting cowpeas, trapping gophers, taking soil samples, picking peaches and grapes, and budding trees and shrubs.

Maximum temperature, 95°; minimum, 43°; precipitation, none.

PENDLETON:

Weather here continues warm and dry. Work on the station the past week consisted chiefly of harvesting corn. The yields are very low, ranging from 5 to 21 bushels per acre. The corn ear worm has caused less damage than usual this year. The fallow soil is too dry to do any seeding, but, on the cereal project a few rows in the smut experiments were seeded this week and watered to insure emergence. No fall plowing has been done on account of the dry conditions. Stock is being moved out of the mountains owing to the lack of feed and water.

Maximum temperature, 87°; minimum, 28°; precipitation, none.

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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

Not for publication without
prior consent of this division.

REPORT FOR THE WEEK ENDING SEPTEMBER 29, 1934.

HAVRE:

One of the most severe September snow storms in the history of the station started on the 21st, ending rather gradually on the 24th and 25th. The snow at the station was not more than 8 inches deep, but west and south it was heavier. Although it was wet, there was considerable drifting. This partly closed even the main highways for two days. Temperatures were freezing or below for three days. The sugar beet factory at Chinook had started slicing, but because of the storm the beets could not be delivered and the factory was closed for two days. Considerable potatoes, beets, garden truck, and some third cutting alfalfa hay were in the storm and some were damaged. This storm was especially severe on livestock, even where range was available. Many small stockmen have but little range and a small amount of feed.

Maximum temperature, 60°; minimum, 16°; precipitation, 0.34 inch.

JUDITH BASIN: (Report for the two weeks ending September 29, 1934.)

Rain and snow during the past ten days have caused material improvement in soil moisture conditions. Snowfall amounted to about 7 inches, all of which melted slowly with no run-off. The moisture should be enough to germinate all fall seeded grain and to maintain that planted on fallow for a considerable portion of the winter. Temperatures dropped abruptly from a maximum of 78° on September 19 to 20° on September 20. A minimum temperature of 15° was recorded September 25. Needless to say, all green vegetation was killed by this freezing weather.

Director Linfield and Professor Chittenden of the Montana Experiment Station were recent station visitors.

Maximum temperature, 78°; minimum, 15°; precipitation, 0.91 inch.

HUNTLEY:

Cloudy and showery weather throughout the week has slowed up haying operations and field work of all kinds. On five days of the last seven, minimum temperatures have been below freezing, and on the 23rd the maximum temperature was below freezing. Sorgo and Sudan grass were entirely killed by frost, and uncut alfalfa was frozen back to the extent that considerable loss of tonnage will occur.

The moisture received a week ago together with that of the current week has penetrated to the depth of seeding in many places, and examination of the seed shows much of it to be sprouted. A few warm days should bring up winter wheat and rye. More precipitation is needed on most fields to insure sufficient moisture to maintain a healthy growth of these crops.

Maximum temperature, 66°; minimum, 25°; precipitation, 0.24 inch.

SHERIDAN:

Light snow at different times over the first of the week delayed field work until Thursday, without adding appreciably to the supply of moisture. The varieties of winter wheat were sown on the 27th, and seeding of about five acres for increase seed or feed was completed the next day. Fall plowing of the rotations was completed, and also some of the pastures. Cleaning grain and trimming branches of the shelter-belt stock broken off by the snow of the previous week occupied the remainder of the week.

Maximum temperature, 68°; minimum, 24°; precipitation, 0.18 inch.

MANDAN:

Agronomy - The past week has been cold and cloudy with a little precipitation in the form of rain and snow. About 2 inches of wet snow fell on the 24th and 25th. Winter rye and winter wheat were planted just before the snow. The moisture may be enough to germinate them.

Maximum temperature, 67°; minimum, 24°; precipitation, 0.34 inch.

Cooperative Grazing Experiment - The experiment was closed for the season on the 28th. The 100-acre steers were the only ones that finished the season on their pasture. The gains for September were light, as the cold weather during the past week caused the steers to shrink. The 100-acre steers showed a gain of 8.5 pounds per head for September. Their normal gain for this month is 40 pounds per head. The gain for 135 days is 312.5 pounds per head, which is a little above normal.

Arboriculture - Pulling tree stumps in the main windbreak and test plantings and hauling dead wood has continued during the week. Freezing temperatures have killed most of the leaves on trees and nursery stock.

In pulling the stumps of dead trees no traces of life have been observed in the roots, except in the case of boxelder roots. This species has a number of live roots, and some of the trees may have sprouted from the base again next year. Willow roots were badly infected with large galls, other tree roots appear free of disease and undoubtedly died from drought rather than disease infection.

Horticulture - Light snows and rains during the week should be of some benefit to horticultural plants, but more moisture is needed. Small fruits, such as gooseberries, currants, and grapes are being pruned. A few cuttings are being made, but cutting wood of currants and gooseberries is very scarce. Seeds of plums and apples are being washed out.

Visitors for the week included, Dr. A. J. Pieters, Division of Forage Crops and Diseases; Dr. E. W. Sheets, Division of Animal Husbandry; Prof. C. C. Starring, Montana State College; and J. H. Stoeckeler, U. S. Forest Service.

ARCHER:

During the past week the weather was dry, cool, and rather windy. Fogs occurred during the nights of the forepart of the week leaving everything covered with ice, but the latter part of the week was clear. Winter wheat is holding its own, but the stand is rather spotted. The leaves on most of the trees, except Chinese elm and Russian olives, have changed their color and are falling. Due to the dryness of the soil, the trees have the appearance of entering the winter in a weakened condition.

Work at the station consisted of cleaning yards, threshing experimental millets, cleaning grass seed, and continuing the work connected with the sheep experiment. The pasturing of corn by lambs is in progress. The first two weeks of this experiment ends to-day. Lot 1 received 1 pound of cottonseed cake (pea size) per day the first week and 3 pounds per day during the second week. Lot 2 receives no supplement. The average weights of the lambs are as follows:

	Average Weight 9-15	Average Weight 9-29	Average Gain
Lot 1 . . .	59.3 pounds	63.7 pounds	4.4 pounds
Lot 2 . . .	58.9 pounds	62.9 pounds	4.0 pounds

Maximum temperature, 79°; minimum, 23°; precipitation, trace.

NORTH PLATTE:

The weather feature of the week was the arrival of the first killing frost of the fall with temperatures of 24° and 26° on the 25th and 26th. The temperature was below freezing long enough to freeze half-inch ice on shallow vessels. Late feed crops, corn, and gardens were thoroughly frozen. First wheat plants are beginning to emerge from seeding made on the 19th and 20th. Feed and varietal sorghums have been harvested and Kalo on the rotation plots is being harvested to-day.

E. F. Chilcott and E. J. George of the Woodward and Mandan stations, respectively, were station visitors during the week.

AKRON:

On Tuesday night the temperature dropped to 19°, which was the first killing frost of the fall period. A previous low of 29° merely nipped such tender vegetation as beans and tomatoes. Field work consisted of harvesting the beans, the foxtail millets, and the forage and grain sorghums.

Weather remains too dry for the best interest of winter wheat on the station. September passed with but 0.75 inch precipitation, whereas the normal for that month is 1.40 inches. Practically no winter wheat has been seeded as yet on the farms adjacent to the station.

Maximum temperature, 89°; minimum, 19°; precipitation, 0.03 inch.

COLBY:

Rather cold, windy, and stormy weather prevailed most of the week. Precipitation was recorded on four days, but the total was only 0.02 inch. On the evening of the 23rd a thunder storm accompanied by a very high wind did considerable damage on several farms in this vicinity, blowing down a number of small outbuildings and two large barns. On the 27th a hard wind blew all day, causing considerable soil blowing. On the morning of the 26th a minimum temperature of 28° killed practically all crops that were still green.

The winter wheat sown on the 18th and 19th is gradually coming up. Several of the fallow plots have fair stands, but on most plots the stands are very spotted. On most of the fall plowed plots only scattering plants are up.

E. F. Chilcott visited the station Friday.

Maximum temperature, 88°; minimum, 28°; precipitation, 0.02 inch.

HAYS:

The fair weather that prevailed for most part during the week was broken by small showers on Wednesday and Friday, which temporarily delayed wheat seeding. Two very light frosts occurred, but no damage to feed crops was observed. Feed crops continue very slow development. The field work during the week included the drilling of all winter wheat plots on the project.

Maximum temperature, 94°; minimum, 32°; precipitation, 0.56 inch.

GARDEN CITY:

The past week has been very disagreeable as a whole, due to high winds and unseasonably cool weather. Rain has threatened several times, but there was only one small shower, following a day of high wind. The maximum wind velocity for the week was 20.6 miles per hour. Two other days the wind averaged close to 20 miles. Only two days this week were below 10 miles per hour. The second frost occurred on the 25th, with a minimum temperature of 30°. This caused considerable

damage to field crops, some of which have been harvested. On the higher ground only the tops of sorghums were badly burned. There is still a chance for some grain to be matured, unless another cold spell comes soon. Aside from dates of planting on winter wheat, no fall planting has been done on the station. The plots are in readiness, and a part of the plot staking is finished. The soil is so dry now that even the volunteer wheat has died. The first date of planting wheat on the foot-rot experiment, which had germinated, has died. Rains have been recorded all around Garden City but nothing in close.

Station visitors this week were: E. F. Chilcott; and H.H. Walkden and W. T. Emery, two representatives from the Entomology Department, Field Service, with headquarters recently moved to Manhattan, Kansas.

Maximum temperature, 91°; minimum, 30°; precipitation, 0.09 inch.

TUCUMCARI:

Work the past week included hauling caliche and placing it around grape vines; picking late, small, drought-shrunken apples; cleaning, oiling, and painting station wagons; watering trees and shrubs; and hulling alfalfa. Ladak alfalfa made too little growth to cut this season, but one light cutting of northern grown common was made. This was delayed until considerable seed matured. Both total weight and seed weight will be exceptionally low.

Crops are surviving surprisingly well, but it is unlikely that anything will be harvested. In some increase fields and in portions of plot fields it is apparent growth will not approach normal stubble residue in point of blow-prevention efficiency.

Maximum temperature, 88°; minimum, 36°; precipitation, 0.03 inch; September precipitation, 0.03 inch.

Wind velocity for September was the highest since 1918, evaporation was the highest on record, precipitation was the lowest on record, and the mean temperature was the same as the long-time mean. Evaporation of 67.222 inches for the six growing months was highest on record, the 22-year average, 54.681 inches. Seasonal mean temperature, April-September was 74°, 4° above 29-year mean. Six-month growing season precipitation total, 4.65 inches, was the lowest on record, 29-year seasonal average 12.66 inches. Precipitation first nine months of the year, 4.88 inches, is lowest on record, the average is 14.21 inches.

DALHART:

With two more showers during the week, the germination of winter wheat and rye was assured. Excellent stands have been obtained on the rotation plots and the winter wheat variety plots. A distinct 'seasonal' effect has resulted from several days of high wind movement. Where the rye, seeded for a cover crop, was just emerging on the days that the soil movement took place, the resultant stands are thin. On the higher ground in the conifer planting, the rye seedlings have also perished. It is thought now that it will be necessary to do some replanting of rye. Rather fortunately a good growth of rye is being obtained in the trees immediately north and those immediately south of the buildings. The vineyard likewise has a good growth started. Bare plots over the station were strip cultivated to control soil movement during the week.

Maximum temperature, 91°; minimum, 35°; precipitation, 0.57 inch.

BIG SPRING:

A light rain totaling 0.33 inch was received this week. This revived crops temporarily, but there was not enough to have any lasting effects. Milo is maturing rapidly, and yields are being reduced because of shortage of moisture for grain development. The early seeded wheat will also require more rain before any appreciable amount of grazing can be obtained.

The work of the week has consisted mainly of odd jobs such as hoeing weeds, picking a little cotton, hauling a little Sudan grass hay, and overhauling a tractor.

J. M. Jones of the Animal Husbandry Division of the Texas A. and M., and W. H. Black of the Bureau of Animal Industry, are visiting the station in the interest of cattle feeding experiments for the coming year.

Maximum temperature, 98°; minimum, 54°; precipitation, 0.33 inch.

LAWTON:

Several days of cloudy, threatening weather with variations in temperature ranging from 49° to 74° for the minimum and from 63° to 90° for the maximum resulted in localized areas of precipitation. Station records include 0.01 on the 26th and 0.49 inch on the 28th. The September total of 3.49 inches exceeds the monthly normal by 0.36 inch.

Native grasses, emerged crops of small grain, and late tilled land show a decided need of additional moisture in this vicinity. Winter barley seeded September 18 emerged to a good stand by the 25th. Winter oats varieties seeded on the same date are emerging slowly and very unevenly.

Fields of late planted sorghums that survived the drought throughout the county developed very slowly during the cool weather of September. Only in the best fields are the heads breaking out of the boot at present.

WOODWARD:

Light showers on six of the seven days of the past week totaled 0.78 inch. This will help the sorghums to make a little more feed, although they grow slowly because of the cool weather. Wheat planted previous to the wet spell is shooting up rapidly and will no doubt soon make a good soil cover, since there is plenty of moisture in the surface few feet. Rainfall to date since August 20 has totaled 4.47 inches.

Work of the week consisted of drilling wheat, taking soil samples, harvesting cowpeas, hauling manure, trapping gophers, counting wheat samples, and budding nursery stock.

Maximum temperature, 91°; minimum, 38°; precipitation, 0.78 inch.

PENDLETON:

Weather the first two days was like winter, with snow which changed into rain on the 23rd. The mountains were covered with snow varying in depth from 3 to 10 inches. Field work consisted chiefly of cutting and shelling corn. No field work on the farms in this section is being done now, as the fallow is too dry to start weed growth or to start seeding operations. A farm crops class in Smith-Hughes agriculture of the Pendleton High School visited the station on the 26th.

Maximum temperature, 76°; minimum, 29°; precipitation, 0.31 inch.

DICKINSON:

Precipitation in September amounted to only 0.53 inch. Snowfall on September 24 and 25 amounted to 2.30 inches. This was the most snow received in September for a number of years. The month was much cooler than normal, the deficiency in temperature being 7.2°.

The snow and damp weather moistened the ground 3 to 4 inches in depth. Fall plowing on the rotations September 28 and 29 resulted in a rough, cloddy job on nearly all plots. The clods were neither quite so large nor so hard as in the fall of 1933, however. Winter wheat and rye were seeded September 27. Almost no fall plowing has been done nor any winter rye seeded in this immediate district because of the dry soil.

Samples of corn and vegetables exhibited at the SEVENTH ANNUAL CORN SHOW at Hebron, North Dakota, on September 29 were fair in number and surprisingly good in quality considering the dry season.

A. J. Pieters, Forage Crops and Diseases, visited the station September 25.

Maximum temperature in September 93°; minimum, 18°; precipitation, 0.53 inch. Precipitation January - September, 7.44 inches. Deficiency for the nine months, 6.18 inches.

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