WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JULY 1, 1922.

AKRON:

Corn continues to make nice progress. Barley is beginning to turn. Barley promises exceptionally good yields on all methods of plat treatment. Oats and spring wheat still suffer for lack of moisture. Winter wheat appears to be filling well where at that stage and presents vigorous appearance at the earlier stages.

All corn and cane plats and increase fields were cultivated. Old scales were dismantled and the pit made larger for receiving the new scales. Tree plantings about the station were pruned and cultivated. Alfalfa was cut and hauled into the barn - a very light cutting. The hoes were used effectively against stray weeds about the station.

Mr. J. Allen Clark visited the station on the 30th. Mr. John H. Martin is spending the week end here in the interests of the Cereal Work.

Maximum temperature 92, minimum 49; precipitation .13 inch.

ARCHER:

The week has been marked for the favorable precipitation. On the 26th, 27th, and 28th there occurred copious local rains at the station and the neighboring locality. There was considerable run off on the 26th and 28th with some hail in each shower. There was some damage to the corn by the hail, but most of the other crops escaped injury.

The work at the station has consisted of plowing the land to be seeded to winter wheat on fallow in the Cereal Investigations area, cleaning the yards, and cultivation of corn and sunflowers. This last work is in progress and will receive the main efforts at the station for some time to come.

Maximum temperature 82, minimum 47; precipitation 1.26 inches.

BIG SPRINGS:

This has been another good week for farm operations and crop growth. The warm weather which has prevailed during the past two or three weeks has caused all crops to make a good growth. The peanut and sudan grass plats are having a hard time getting much above the ground for the rabbits keep them trimmed off nearly as fast as they grow.

All the thinning work, with the exception of the two last dates of planting, was finished this week and all plats were cultivated for the second time; the June 30, or last date of planting was also made this week.

Crops in general throughout the county are in exceptionally good condition at the present writing. There is good grass on the range, and all cultivated crops are making a good growth.

Maximum temperature 95, minimum 65; precipitation .06 inch.

COLBY:

Our first precipitation of any consequence fell during the week. Precipitation for the week amounted to 1.21 inches which fell on each of four nights, Monday to Thursday inclusive. These showers delayed harvest to an extent that the grain is all going to be ready to cut on the station at the same time. Barley and winter wheat varieties and all winter wheat plats except fallow were cut during the week. The kernels of wheat are going to be shriveled in most of the plats that have been cut. There seems to be an abundance of straw but the dry weather during June cut down the chance for a well filled head and a plump

Colby, contd.

grain. Some spring wheat plats may be a total failure, due to the dry weather. Oats will be rather light in yield and quality.

Corn plats were cultivated during the week. All sorghums were cultivated during the week. The last date of planting sorghums were planted on the 27th of June. They were planted at this time to take advantage of the moisture; they should germinate and emerge to a good stand with the moisture that we now have in the surface soil. Milo and kafir plats are looking much better since the showers. Their growth had not been rapid since planting; they have practically doubled in growth during the week.

Visitors during the week included Mr. John H. Martin and Mr. John J. Bayless.

DALHART:

Weather conditions the past week have been a little more favorable to crop growth. Three showers occurred which netted .71 inch. This not only helped the crops but also aided in the crop thinning. The week as a whole has been a warm one. The days have been quite sultry. The showers occurred shortly after sundown each day, so that no delays were met with.

Thinning of crops has progressed nicely during the week. All field corn and kafir finished in the rotations and M.C. methods. This year the planting has been such that thinning can be done at about the right time and no crop will be large enough to interfere. Milo will be thinned next week, conditions permitting, and by that time the varieties will be large enough to thin. Just after the first rain which occurred Thursday evening the plats were prepared for the last date of planting and the planting made on the 30th. The plats in the entire south field were also trimmed to size the same date. This finished the season's planting and the plat trimming. Winter rye on Rotation 82 was turned under for green manure on the 30th. The stand was very thin. The fallow plats in the method of fallow series, N and O, were plowed on the 30th. Some spraying was done during the week to kill the sphinx caterpillars which are feeding on the poplar trees in great numbers. It is hoped that the spraying will get the worms.

On July 4 the Dalhart Masons and Eastern Star will hold a picnic at the station. A great time is planned for the entire crowd. The Chapter of DeMolay will have a track meet and other entertainments for the afternoon.

GARDEN CITY:

The weather has been somewhat cooler during the past week. Nearly every afternoon has been cloudy. The station was visited by three showers during the week with .59 inch of rainfall as the aggregate amount of precipitation. The ground is so dry that it is doubtful if any of these rains were of much value to growing crops.

Harvesting of the small grains was completed Monday. All spring grains and the winter wheat on the last two dates of seeding were so short that it was necessary to cut them with the mower rather than with the binder.

Nearly all the sorghums and corn were cultivated during the week. Most of the week has been spent in thinning sorghums and corn to a uniform stand. This work will probably be completed by the middle of next week.

Maximum temperature 98, minimum 59; precipitation .59 inch; evaporation 2.589 inches; average hourly wind velocity 7.2 miles.

HAVRE:

Temperatures for the past week have not been especially unfavorable, but

Havre, contd.

with the general deficiency in precipitation crops have been suffering badly. The maximum of 85 degrees was recorded on the 26th and the minimum of 48 degrees on the 25th. Precipitation amounting to .13 inch was recorded on three days.

The following shows the precipitation for the first six months in this year, as compared with the 40-year average:

	January	February	March	April	May	June	Total
1922	.19	.76	.27	1.39	2.37	.90	5.88
40-year average	.77	.46	.49	.84	1.89	2.78	7.23

For this season of the year all small grains are suffering more than they have since the station work started, with the exception of that on corn land and fallow. Most of the wheat and oats on fall-plowing is now so badly burned that rain will not revive it. Some of the spring-plowed plats are still in fair condition, while others are in bad shape. Soil moisture samples taken on the 19th of June showed that the moisture in fall-plowing was almost exhausted and that the spring-plowing had less than four per cent in the second foot that was available.

Grasshoppers have been much more numerous this season than they were last year. Poison bran mash was scattered over the entire project this week with very good results. Cut worm damage has not been serious on the plats, but in a field of corn on the station about one-third of 60 acres was entirely taken. The worms are still present in the soil, so that replanting should not be done for at least a week.

The Hill County Farm Bureau held their annual meeting and picnic at the station on the 29th. Chester Davis, Commissioner of Agriculture of the State Department of Agriculture, and Mr. A. J. Ogaard of the Extension Service, formerly of this office, were the speakers. There were about two hundred in attendance and these were mostly farmers.

HAYS:

The weather has been quite varied during the week,- hot, cool sunshiny, cloudy, and rainy, with light breezes part of the time. Every night there has been some moisture ranging from a trace to 1.67 inches in amount, the heaviest rains being .71 inch on the night of the 28th and 1.67 on the night of the 30th. Only a slight trace of hail was noted. Twenty miles east of the station a hail storm, which occurred the 25th, completely destroyed quite an area of wheat. The hail storms in this section usually cover only small localities, but several have been reported during the month of June, and in most cases where they have occurred the destruction of the small grain crop has been complete.

The rains during the week were too late to be of much value to the small grains, except the very late-maturing fields. The rains have been very beneficial to all the row crops which are looking very good.

There has been an unusually wide range in the date of maturity of the winter wheat plats which has made it easy to keep up with the harvest, except for a little delay caused by rain, which also lodged some of the heavy wheat. There is still about 70 plats of winter wheat to be harvested, besides a block of about two acres. Spring wheat suffered considerably from drought before the late rains. It looks ripe because of having been burned, but as a matter of fact it is only in the milk to soft dough stage.

HUNTLEY:

Clear weather during the early part of the week was favorable for field

Huntley, contd.

work. The plowing of plats to be summer-fallowed was completed on the 28th and the turning under of the green manure crops is well under way. In spite of the heavy precipitation of the past month the soil in the green manure plats is plowing up dry and cloddy.

A shower totaling .74 inch revived winter wheat which had begun to suffer from drought in many places. This crop is now fully headed and the older heads are in bloom. Spring sown crops continue to make a heavy leaf growth and with the exception of oats have not yet begun to joint. Many plats of oats are fully jointed and some heads are making their appearance. Corn is profiting by the warm, humid weather and making an unusually rapid growth. All row crops were cultivated for the first time this season, during the week.

In the pasturing experiments the hogs were moved from the plat of rye to the plat of peas on the 29th. The peas were not as advanced in point of growth as they have been in previous years at the time of stocking. The great abundance of forage on this plat this season made the move advisable in order that the pigs might have time to clean up the peas and be ready to turn on to the barley pasture before the barley is too ripe.

Maximum temperature 86, minimum 51; precipitation .86 inch. June precipitation, average for 12 years - 2.26 inches. June precipitation for 1922 4.68 inches.

JUDITH BASIN:

Moderate temperatures have prevailed during the past week and rain was received on three out of the seven days. The total precipitation at this station for the month of June was 4.43 inches, which is 1.39 inches above normal. Despite the abundance of moisture, however, winter wheat and the spring grains are heading out comparatively short.

All crops and especially corn have made a very rapid growth. Winter wheat has headed, early varieties of oats and barley are commencing to head, and field peas are beginning to bloom. Brome grass stands about three feet high, red clover and yellow sweet clover are in bloom, and harvesting of alfalfa has commenced.

Wet weather during the week has seriously interfered with field work and has greatly delayed the harvesting of alfalfa. Plowing of summer fallow fields was finally completed, and corn, sunflowers, and all other row crops were cultivated.

Visitors during the week were Mr. N. F. Woodward of the Havre Station and Prof. Clyde McKee of the Montana Experiment Station.

Maximum temperature 73, minimum 45; precipitation .81 inch.

LAWTON:

The hot, dry weather of the past week was relieved by 0.98 inch of rain on Saturday the first. Much of the corn over the county has been badly fired by dry weather. This condition is especially true where the fields are weedy, or the infestation of chinch bugs is heavy. Corn on the station is in very good condition where bugs are not present. It has, however, silked and tasseled during a very hot, dry period.

Trimming off the ends of all plats was complete during the week. The pea harvester was used to good advantage in cleaning up the roads and destroying weeds on plats where the crop had been completely destroyed by chinch bugs.

All of the oat plats and all of the wheat on Field A were threshed on Friday. Oats made a fairly good yield in most all cases. A few pounds of shrunken, shriveled wheat is being obtained from each wheat plat. It is very doubtful if the grain can be cleaned sufficiently to command a market value.

Lawton, contd.

The April 15 seeding date of Sudan grass was harvested on the 29th, and yielded at the rate of 1660 pounds of cured hay per acre.

Considerably spraying was done during the week to stop the ravages of chinchbugs. Such operations were only partly successful.

Maximum temperature 100, precipitation 1.01 inches, 1.70 inches below normal.

MANDAN:

Agronomy.

Weather conditions have been very favorable to crop growth. Temperatures have been slightly below normal and evaporation has been lower only once for the corresponding period since 1916. No precipitation of any consequence occurred during the week. Reports have come in from the surrounding country to the effect that grains crops had been injured by frost during the latter part of last week. This was, however, impossible for the minimum temperatures at this point have not been below 48 degrees during the past two weeks. In all probability this injury was due to a combination of heat and wind following a period of very rapid growth A similar condition was observed at the station and like conclusions made concern ing the cause.

Maximum temperature 80, minimum 48; precipitation 0.03 inches.

Total precipitation for June 3.43 inches; 45-year mean 3.51 inches.

The second cultivation of corn and the first of sorghum was finished this week. Some hand hoeing will have to be done in the very near future. The corn is, however, cleaner than it has been at this time for several years.

Fallow plats are being gone over with a nine shoe John Deere duck-foot cultivator. Four horses are required to pull it. Thus far it is the best tool for cultivating fallow we have been able to secure. It leaves the surface ridged much like a small lister. When tried on land where weeds were quite far advanced there was a tendency to slip over the tougher well rooted weeds.

Rotation plats are looking better than at any time since 1916. Whether or not the harvest will be in proportion to the present appearance depends on the amount of rain which falls within the next week or ten days. Already some plats are showing signs of drying up. Fall-plowed grains, especially in the continuous cropping series are among those showing the most drying up.

Work pulling Russian thistles from plat borders has been completed in the main field and is well along in the south field.

Cooperative Grazing Experiment.

Native vegetation has improved during the month of June. The pastures are in better condition for grazing than they have been at any time of the year during the past two or three years. The native hay crop will be rather light but the vegetation is in excellent condition for grazing.

The rotation steers were moved from the first division of the pasture at the end of June. While they had grazed the division close it could have carried them another week or ten days.

Artemisia frigida in the 30-acre pasture has made a heavy growth and the pasture appears to be covered with it. There are also numerous young plants between the older bunches.

The cattle made nearly normal gains for the month of June. The individual gains of the cattle in the various pastures was fairly uniform. The following average gains in pounds per head were made during June. Each pasture carries ten 2-year old steers except the rotation pasture which is carrying 16 head.

Pastures in acres	100	70	50	30	70 (Rot.)
Gains in pounds	88	111	113.5	96	90

Mandan, contd.

The Annual Morton County Farm Boys' Encampment was held in the Fair Ground from June 26 to July 1. Talks were given the boys at the Field Station by Mr. Wilson, Mr. Thysell, Mr. Dillman, and others. Mr. W. E. Brentzel, of the Office of Cereal Investigations, visited during the week.

Horticulture.

Juneberries, strawberries, and currants are now ripening. A number of Juneberry selections have been made in the seedling selection blocks, where the fruit is considerably better than last year. South Dakota and Easypicker have been the best yielders among strawberries up to the present time.

Gooseberries are also starting to ripen in the seedling selection blocks, and some of the seedlings look very promising.

The garden is looking quite good at present. However, some difficulty has been experienced with poor seed, the germination not being up to standard, and some varieties not true to name.

NORTH PLATTE:

Dry weather continues. Temperatures and wind movement have been less severe during this, than they were during the preceding week. Rain has threatened several times and .38 inch fell early in the week. This was of little value for grain crops, the most of which were beyond recovery even had heavy rains occurred. Harvest was begun on June 29. This is a week earlier than the normal date. The forced ripening has brought all grains on at about the same time, and it is necessary to work a double shift with the binders in order to prevent loss from shattering and lodging.

About 300 people were in attendance at the Field Day meeting June 28.

SHERIDAN:

The past two weeks have been quite favorable for field operations and for crop growth. A large part of the week of June 24 was exceptionally hot, but the past week has been quite cool. A heavy shower fell on the evening of the 29th, wetting up the surface of the ground again in good shape.

All crops are looking well and have been making a good growth. All of the oats in the rotations and the earlier seeded fields have headed. The Peliss wheat in the check plats headed about the first of the week, and the rest of the wheat is now heading. Alfalfa has been cut, but not yet hauled to the barn.

The total rainfall for June this year was 3.48 inches, nearly 1.50 inches above the normal, and the highest precipitation recorded for June at the Station. A large part of the rainfall came in the form of heavy showers and there was considerable run off. The washing of the soil on the station was greater than in any previous year.

A large hay crop is being put up in this part of Wyoming this year. Farm labor now seems scarce and it is difficult to get sufficient help. Wages also have raised considerably.

Maximum temperature - June 24, 98; July 1, 84; minimum - June 24, 43; July 1, 51; precipitation June 24, .07 inch; July 1, .64 inch.

TUCUMCARI:

Very little growth has been made the past week by broadcast crops, although the majority of rowed plats and increase fields have made fair growth. Some rolling of leaves has occurred during the heat of the day, but the plants look fairly well in the early morning. The rainfall for the month of June, 1.24 inch is about one inch below the mean. Soil moisture samples from the M.C. milo plats show a gradual but constant decrease in the moisture content of the upper three feet.

Tucumcari, contd.

During the week all row crops were cultivated for the second time, with the exception of ten acres in the north field, which were late and were cultivated the first time. A large amount of hoeing has been necessary, for bull nettles have been very troublesome. Some thinning was done the past week, while an acre of very bad Johnson grass sod was turned as shallow as possible.

There has been so little air movement the past week that the windmills have not turned on an average of an hour a day. The average wind velocity has been only 3.9 miles, and in order to provide water for the range cows, water was hauled from the lower well. It was also necessary to haul a few loads in the tank to put on the shrubs and hedges. A number of Russian olives have died, while the tamarack hedges are turning yellow. Most of the ornamental trees and shrubs show the urgent need of water and are in danger of dying.

Rains have been very local in character this spring; in a number of localities in the county replanting has been done quite extensively, after weeds were washed out or buried deeply by heavy rains. Within the past week there have been three good showers about a mile west of the Station, although only a trace fell here. In driving twenty miles northeast of Tucumcari early in the week, three areas were found where heavy rain had fallen, the areas between these spots having received no rain. It has been no uncommon occurrence this spring for an inch of rain to fall on an area not over one mile square, while no rain fell ten rods away. Seemingly the Station has been one of the dryest spots in the vicinity the past four months.

Maximum temperature 96, minimum 63; precipitation T; evaporation 2.302 inches; average wind velocity 3.9 miles.

WOODWARD:

June of this year, with precipitation of .17 inch, has been the driest on record with the exception of June 1901 and 1911, when there was no precipitation. Crops on the experimental plats are still making good growth and with the exception of corn, do not seem to be suffering for moisture. Some of the fruit trees which were set out this spring are beginning to suffer and will have to be watered unless we get rain soon. We have had to water some of the shrubs which have been established for several years, to keep them from dying.

Work during the week at the station has consisted of hoeing some big weeds on the plats, some cultivation, finishing the thinning, spraying the vineyard for grape leaf hoppers, and threshing. The wheat plats were finished today, July 1, and most of the other threshing will also be finished today.

Mr. George C. Husman, Viticulturist, from Washington, was a visitor at the station on Tuesday and Wednesday, the 27th and 28th.

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U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JULY 8, 1922
(Except as otherwise indicated.)

AKRON:

Hot weather has prevailed during the past week. Today, Saturday, an appreciably hot wind has steadily blown from the southwest since 10:00 a.m. Some harvesting of winter wheat was done on the farms. Harvesting and heading will be started everywhere next week. On the station it is expected to start harvesting barley Monday, after which with very short intervals it is expected that oats will be ready. Winter wheat and spring wheat are still green.

Some of the hay varieties in the forage experiment were harvested during the past week. All corn and cane plats and increase fields were cultivated. Considerable hoeing is being done among the corn and the cane plats.

Mr. T. R. Stanton, of the Cereal Office, has spent the past day and a half here in the interest of Oats Investigations.

Maximum temperature 93, minimum 43; precipitation .54 inch.

ARCHER:

There were four storms from June 26 to July 2, with a total precipitation of 1.79 inches. The duration of these was very short and as a result there was considerable run off. For this reason where there was the slightest raise in the soil the small grains are in need of more moisture. The corn and sunflowers are making a splendid growth notwithstanding the damage done by hail.

The work at the station has consisted of the cultivation of corn, sunflowers, and potatoes. The latter crop is looking very promising in most places. The Dry-land corn has received the third cultivation and the rest of the tilled crops are receiving the second.

Maximum temperature 83, minimum 41; precipitation 0.58 inch.

ARDMORE, report July 1:

Weather conditions during the week and throughout the month of June were about normal for this time of the year. The total precipitation for the month of June was 2.54 inches, which may be compared with the ten-year normal, 2.86 inches.

All crops are growing rapidly. Wheat and oats are in the milk stage, and the prospects for the production of a spring wheat and an oat crop are excellent. Winter wheat suffered somewhat from the effects of a dry fall and winter, and this crop will not be very good. Corn and cane are good. Corn is further advanced than normal for this time of the year.

Harvesting of first crop of alfalfa has been completed. Well established fields of alfalfa yielded about two tons per acre. One field of thirty acres which was planted a year ago made slightly better than a ton per acre. About 60 acres are in alfalfa on the station at the present time.

Native vegetation is not as good as it should be. It has suffered much from the dry weather early in the season. There will be a short crop of Western Wheat Grass.

Maximum temperature 103, minimum 53; precipitation .50 inch.

BELLE FOURCHE:

Almost the whole week has been too wet for field work. The Dry-land plats are probably the weediest that they have been in the history of the station and the weather remains so continuously wet that there is little immediate chance of bettering their condition.

Since the 24th day of March there has been rain on 62 days out of 107, or practically six days in ten. During that period the extreme length of any period without rain has been five days.

Belle Fourche, contd.

To date the precipitation for each month closely parallels that of 1915. The total precipitation for the first six months in 1915 was 11.73 inches; this year it is 11.89 inches.

Barley is ripening and a bumper yield of this crop seems assured. Very little plant disease has appeared in any of the crops and a high yield of all grain crops is probable.

In spite of the wet weather corn has developed rapidly and is ahead of its usual condition at this time.

Practically all of the first cutting of alfalfa has been at least partly spoiled. The frequent rains have made getting it into the stack almost impossible.

Grasshoppers are numerous in all parts of the project, but are worst on the ligther soils near the Belle Fourche river. In most cases poisoning has not proven very effective.

The temperature for the growing season has been below normal. The maximum has been above 90 degrees on only three occasions.

Precipitation for week 1.70 inches; July to date 2.15 inches.
Maximum temperature 94, minimum 48.

BIG SPRINGS:

Good growing weather has prevailed this week with the temperature remaining fairly cool, 92 degrees being the maximum temperature recorded for this week. All crops are making a good growth, while the Milo and kafir of the second date of planting are heading out. Feterita of this date is fully headed, and the Sudan grass is nearly ready to be cut for the first time.

The work this week has consisted mainly of hoeing weeds and cultivating the increase fields. The O plat in the methods of fallow for milo was plowed this week
Maximum temperature 92, minimum 62; precipitation 0.

COLBY; report July 8:

Work for the past week has consisted principally of harvesting wheat, oats, and barley. All plats of winter wheat, oats, and barley were harvested during the week. This includes varieties and different methods and rates of seeding the above crops. There remains to be harvested part of the commercial barley and part of the commercial field of wheat.

The grain of winter wheat is going to be rather small and shriveled except for certain areas in fields. The earlier wheat appears to have the smallest berry of the wheat. Spring wheat will be almost a total failure on the station, the dry weather of June hurt it so bad that it did not recover when the rain came the last of June. The fallow plat of spring wheat may make some wheat.

Corn and sorghums continue to look good and have a good color.

Bindweed areas on experimental ground were hoed out during the week.

Harvest hands continue to be scarce and wages demanded are $5 and $6 per day some are going out for $4. The west half of the county has done scarcely any harvesting at the present time.

Maximum temperature 102, minimum 47; high wind and slight precipitation p.m. of 6th.

DALHART:

This week has been warm a part of the time and cool the rest. Two rains occurred during the week which made a great improvement on growing conditions. Crops are all making rapid headway. The first date of Sudan is heading and the first date of feterita and second date of Sudan are in the boot.

Dalhart, contd.

Field work for the week consisted of cultivating the varieties, general field crops and rotations 84 to 89 B & C. Some hoeing was done during the week in scattered places where plats were plowed early. None of the late plowing is troubled with weeds. The only place giving any trouble in this respect is in the row where the cultivators can not reach. Less hoeing will have to be done this year than heretofore. The mower was run a day and a half this week to clean up roadways and the meadow. Winter rye was harvested on the 6th. Oats will do to harvest the first of the week. Oats for seed were selected from the general field Friday.

On the 4th the picnic was a great success. There were around 200 people present in spite of the big celebrations that were put on in nearby towns. Everybody had an enjoyable time. Many compliments were passed on the condition of the station.

GARDEN CITY:

Row crops are beginning to show the effects of the hot winds of the past week. Most of the crops, however, have not been damaged seriously as yet. The station was visited by a severe wind storm on the afternoon of July sixth. Most of the experimental wheat was blown from the plats to the fence rows and into the adjoining fields. A few of the plats which were protected from the wind by the trees and the office building remained intact. The wind was followed by a small amount of hail and rain. The hail did little damage to the crops growing on the station.

About fifty per cent of the Sudan on the first date of seeding plat is headed. Feterita seeded on the same date is in the boot. It is about three feet in height.

The field operations of the past week have consisted of thinning sorghum to a uniform stand and hoeing roadways and alleys.

Maximum temperature 99, minimum 47; precipitation .25 inch; evaporation 2.389 inches; average hourly wind velocity 8.65 miles.

HAYS:

The temperature during the week has varied from 53 to 97 degrees. Rainfall on the afternoon of the 6th was 1.16 inches. Wind which accompanied the rain lodged the corn considerably, but it has since raised, so there seems to have been no permanent injury. It is the first time the corn has been lodged. Sixteen miles southeast of the station on the same date a hail storm completely destroyed all the wheat that was not harvested. Fortunately the area covered by the hail storm was very small.

On account of rains there still remains about one hour's work harvesting on the project. The rain of this week together with the rains of last week has kept the fields too wet for team work most of the week.

Corn and sorghums are making fine growth.

Alfalfa fertilizer experimental plats were ready for a second hay crop, and were mown today. The second crop is light.

HUNTLEY:

All crops have made an unusually heavy growth during the past week. Small grains are again showing the first signs of drought and rain will be needed to make a yield of grain in the spring-sown crops. Oats and winter wheat are fully headed while spring wheat and barley on the rotations are in the boot. Flax is in full bloom.

Huntley, contd.

Plowing roads in Field H was completed yesterday and the cleaning of alleys should be completed today. The late, wet spring has been very favorable for weed growth and more drastic measures than usual have been employed to keep the weeds under control.

Maximum temperature 93, minimum 51; precipitation .35 inch.

JUDITH BASIN:

Two days of hot weather during the first part of the week did considerable injury to crops, especially winter wheat which burned quite badly even though there was an abundance of moisture in the soil. The lower spikelets of the heads of winter wheat were entirely shriveled up and the grain yields will be materially reduced.

Corn has made a very rapid growth and stands about 16 inches high. Oats on the rotations has headed out and flax is commencing to bloom. Barley is quite backward and was burned rather seriously.

Field work has been devoted chiefly to haying operations which have been delayed to quite an extent by frequent light showers. All plats and fields of alfalfa and clover have been cut and shocking of hay has been completed with the exception of about two acres. Winter rye on the rotations was plowed under early in the week, and the corn plats in Field B and the blocks of trees in the shelter belt experiments were hoed.

Grasshoppers have become very numerous on certain portions of the farm and poisoned-bran mash is being scattered wherever the "hoppers" are plentiful.

Mr. N. F. Woodward returned to the station on the 5th to attend to work on the forage crop project.

Maximum temperature 89, minimum 42; precipitation .46 inch.

LAWTON:

Rain in the form of three showers to the extent of 1.01 inches from July 1 to 3 was followed by several days of rather cool weather. Minimum temperatures have been unusually low for this time of the year. Although there was practically no run off a couple of days of strong wind and the demands of growing crops have rapidly used the moisture. The rains were very local in distribution and varied widely in amounts.

The corn crop in southwestern Oklahoma will be pretty light. On the sandy soils the crop will be fair where some rain has fallen recently. Destruction of corn, grain, and sorghum crops by chinch bugs is a serious menace to a very appreciable acreage throughout the county.

Some wheat has been threshed throughout the county during the past week. Elevators report that the grain tests from 48 to 50 pounds; that about two-thirds of the grain that is brought in does not attain a standard grade of any sort.

Cotton has made pretty fair growth during the past ten days. The crop throughout the county is late. Only the earliest plantings are now putting on young squares. But very few weevil have been reported to date in this county. Although the hot dry weather is objectionable to feed crops it offers a natural means of control against the boll weevil which damaged the cotton so heavily last year. However, the remainder of this month will probably determine the extent of weevil infestation around here.

The May 1 planting of sudan grass was harvested July 5. Only a fair crop was produced. Dwarf kafir and dwarf milo planted April 17 showed the first heads July 2. Broom corn which was planted on the same date is also pretty well headed at the present date.

Broom corn, all milo plats, feterita, shallu, and dwarf hegari in the grain shorghum project are showing very noticeable injury from chinch bugs. A striking difference in favor of Spur Feterita over common feterita relative to

chinch bug injury is now in evidence. Whether such a contrast will continue is doubtful.

Corn that is or has been heavily infested with chinch bugs has lost all of the foliage except the top leaves and some of the stock are falling to the ground. Judging from present indications it will not stand much longer. Corn not infested with chinch bugs is still in fairly good shape and promises some grain.

MANDAN:

Agronomy.

The past week has been rather cool for this time of year, with no rain of any value.

Maximum 91, minimum 38; precipitation .13 inch.

The chances for a good small grain crop has been reduced during the week. A good rain a week ago would have insured a crop. Unless a good rain comes soon the grain cannot fill. Oats are starting to ripen. Some wheat plats are dried up in spots. Corn is making an excellent growth but is in need of rain.

Peas for green manure have been turned under. The amount of green manure was good for the season.

Peas for the Office of Forage Crop Investigations have been cut for hay.

Putting up tame hay has continued during the week. The brome grass cut at the pasture made about 30 tons, or nearly one ton per acre. Alfalfa in Field P will make a light crop.

Cooperative Grazing Experiment.

Native vegetation is again starting to dry up in spots. Pastures are still in good condition but would be benefitted by rain.

Arboriculture.

Weeding, hoeing, and cultivating has been continued the past two weeks.

Irrigating of all tree fields within reach of the pumping plant was begun the fifth and will be continued until they have all been gone over. Three hundred and fifty feet more of nine inch canvas hose was received, which enabled us to get water to some of the fields 850 feet from the stand pipe which delivers the water.

Mr. Cobb and Mr. Hansen returned from an inspection trip into north central South Dakota on both sides of the Missouri River. Over 900 miles were traveled by car and 66 cooperating farmers visisted.

Mr. Emerson returned the sixth from a trip along the north and south branches of the Northern Pacific and the Main Line Milwaukee in northern South Dakota. Over 1100 miles were traveled by car and 117 farmers visited. Crops in both of the above districts looked very fine, with plenty of moisture except in the district east of Mandan 60 miles and about 35 miles south. This section in the immediate vicinity of Mandan is in need of rain to fill the grain.

Messrs. Emerson and Hansen left the eighth for their summer's inspection trip which will keep them out until about September 1.

NORTH PLATTE:

In contrast to the hot dry weather of June, the first week of July has passed with a fair supply of moisture and with temperatures below normal. Precipitation to the amount of 1.70 inches fell on the night of July 1 and cool, partially cloudy weather since has encouraged a good penetration of this moisture into the soil. Had similar conditions been substituted for those which prevailed for the greater part of June, the spring grain crop would probably have been 100 per cent greater than it is. Harvest is completed, with the exception of a few

North Platte, contd.

plats of spring wheat which have greened up since the rain. Corn is being given the last cultivation.

Total June rainfall was 1.17 inches, or 2.06 inches below normal.

SHERIDAN:

More than the normal rainfall for July here has already fallen so far this month, and more rain is falling again this afternoon, the eighth. Over one inch of precipitation fell on the afternoon and night of the 5th, practically all of it going into the ground on cultivated land.

Practically all except the very late grain has headed. Corn has been growing rapidly and is beginning to tassel. Plowing for summer fallow was completed this morning. This work had been delayed because of wet weather and consequent inability to work the land. A heavy growth of weeds was turned under on all of the later plowed land, although on some of it, volunteer grain, was cut for hay before plowing. The ground throughout the summer has been as wet as could well be plowed.

Maximum temperature 93, minimum 52; precipitation 1.21 inches.

TUCUMCARI:

The past week has been very favorable for crop growth, three showers netting 1.05 inches of rainfall. Row crops are growing well, while even the grass and shrubs show the beneficial effect of the water. Much of the past week has been spent in hoeing weeds. Sprouts have been cut from the orchard trees and most of the shade trees.

Wheat will be ready to cut early in the week, as much of it is now in the dough stage. The yield will be very light from the B and C plats; other plats are a failure. In order to determine why the Kubanka wheat seeded on the M.C. rye plats this spring died back, after germinating very well, soil moisture samples were taken on the M.C. winter wheat plats and the winter rye plats about a week ago. In nearly every case the rye plats had the greater amount of moisture. Both the winter wheat and winter rye plats were bare this spring, so Kubanka spring wheat was seeded late in March. All plats showed good stands and for a month or six weeks the wheat on the M.C. rye plats made much better growth than than on the wheat plats. About a month ago the plats all looked very much alike, but since that time the plats on the rye plats have died to a great extent, while the same is partly true of the M.C.A. wheat plat. Since the rye plats are apparently on just as good soil, and since these plats contain more moisture, a reasonable explanation is hard to find unless one shifts the blame onto soil toxicity.

Some time has been spent in grading the road since the last showers, while locust sprouts were grubbed out and feed was ground one morning when soil was too wet to work.

Maximum temperature 99, minimum 58; precipitation .05 inches; evaporation 2.660 inches; average wind velocity 5.6 miles.

WOODWARD:

During the past week we had two showers of about one-third inch each and one smaller, and these have given slight temporary relief and allowed us to plant a field of milo. All of the crops are still making excellent growth and there has been enough moisture to revive the young trees in the orchard which were beginning to suffer.

Work during the week has consisted principally of cultivating row crops, and cutting and hauling alfalfa. Wheat and rye, which were threshed last week, have been cleaned up and weighed. As was mentioned early in the season, last

Woodward, contd.

fall was very dry, there being only about one-quarter inch precipitation from the time the wheat was planted until early in January and the yields of grain show a much greater advantage of the early over the late preparation on this account.

The yields follow:

Kanred Wheat.

	Bu. per Acre	
CC-A	13.3	
A'	9.3	dup. of CC-A
CC-B	27.2	
B'	38.3	dup. of CC-B
X	8.2	" " CC-A but disced instead of plowed
Y	35.3	" " CC-B plowed shallow
Z	34.5	kept clean with disc
CC-F	28.5	listed and worked down
CC-C	34.5	Fallow
151-D	35.3	"
154-D	28.8	"
155-D	34.7	"
156-D	30.3	"
402-D	27.3	"
570-B	36.0	"
153-B	28.8	rye green manure
164-A	22.0	early fall-plowed
152-D	15.8	disced corn ground
164-C	24.5	" cowpea "
166-C	22.8	" " "
167-C	14.2	" " "
265-A	10.7	" " "
262-A	23.2	" corn "
263-A	16.7	" milo "
264-A	17.3	" kafir "
	24.7	avg.

Winter Rye.

CC-A	7.9	
CC-B	19.3	
CC-C	25.2	fallow
CC-F	17.0	listed
X	6.1	dup. of CC-A but disced instead of plowed
Y	33.0	" " CC-B " plowed shallow
Z	24.6	kept clean with disc
	16.7	avg.

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JULY 15, 1922.
(Except as otherwise indicated.)

AKRON:

Hot weather prevailed during the past week. Showers were received in various parts of the county, but none of consequence in this immediate vicinity. All crops are suffering from the hot dry weather, unless it be the sorghums which are not yet tall enough to be exerting a heavy drain upon the soil.

Wheat harvest is in progress over the county. Harvesting has received considerable attention here on the station. Both barley fields of the Sheep Rotations were harvested and about half of the oat plats on the rotation block. Considerable harvesting was also done on the Cereal Project.

Mr. J. Russel Smith of Columbia University and his party visited the station on the 14th.

Maximum temperature 100, minimum 40; precipitation .19 inch.

ARDMORE:

This section of the country is suffering from the effects of a very severe hail storm which occurred between 6:00 and 7:00 p.m. July 1. The territory covered was five to seven miles wide and fifteen to twenty miles long. The destruction varied somewhat in various localities, but the storm was very severe throughout the wide scope. The hail stones were remarkably small considering the destructive power of the storm, and varied in size from that of a pea to one-half inch in diameter. A terrific wind blew continually throughout the period of the storm, and added materially to the destruction. Precipitation was recorded to the amount of 1.18 inches during the storm.

This station was in the center of the storm. All small grain crops were completely destroyed and corn and cane crops badly damaged. Wheat that stood 42 inches high was cut so close to the ground that none of it can be recovered with the mower and rake. Wheat and oats were in the dough stage. Corn had been cultivated three times and was about the same height as the wheat. At this date corn has recovered very little and will not make a crop worth harvesting. Cane was only a few inches high. It was cut down to the ground but has recovered rapidly and is making a good second growth. All trees were badly damaged; most of the leaves were knocked off, but the damage will not be permanent, except to 2000 conifer seedlings which were completely destroyed. The prospects for a crop at this Station were excellent prior to the storm. The loss in feed will amount to about $5,000. The north and west sides of all buildings were badly damaged, and it would cost $1500 to repair the damage done to paint.

The Superintendent of the Station has spent more than a week traveling with the Claim Agent for the South Dakota State Hail Insurance Department since the storm. Many farmers were insured. In the vicinity of Ardmore claims were allowed amounting to more than $20,000.

The annual Farm Boys' and Girls' Camp closed at this Station with the annual Farmers' Picnic on the 14th. About 65 were enrolled in the camp and 3000 attended the picnic. Six men and women from the Extension Department of the State College assisted at the camp. Mr. Norton, President of the Nebraska Farm Bureau Federation, delivered the address of the day at the picnic.

BELLE FOURCHE:

The week was generally fair, though enough rain fell to keep crops in good growing condition.

Barley is now ripe and oats are commencing to turn. A few tassels have appeared on the corn.

The week has been generally devoted to cleaning up. The alleys were cultivated, the roads disced and dragged and hoed during the week. The cultivated

Belle Fourche, contd.

crops have all been cultivated and hoed, and the grain plats have nearly all been rogued. A few grain plats contain so much volunteer grain that it was thought best not to attempt to pull out mixtures.

Maximum temperature 93, minimum 42; precipitation 1.04. The precipitation for July to date is 3.47 inches.

BIG SPRINGS:

The weather this week has been hot and dry. The thermometer registered 105 on the 11th which was the highest temperature recorded thus far this season. This caused the corn to curl a little, but the other row crops have not suffered any as yet, although the drilled kafir and sudan plats have burned considerably.

The second date of planting of Sudan grass and also one four acre field of the same crop was cut this week. The Sudan made a very good growth this year and averaged five feet in height at the time of cutting. Other work of the week consisted of cultivating, hoeing weeds out of the increase fields, and thinning the fifth date of planting of sorghums and cotton.

Maximum temperature 105, minimum 66; precipitation 0.

COLBY:

Weather conditions remained fair for harvest during the week, with the possible exception of showers on each of three days which were just heavy enough to make the grain tough. The harvesting of the fields of winter wheat and barley on the station was completed on the 11th. The spring wheat plats on the D.L.A. Project were harvested on the 12th. There is not going to be much spring wheat in them except on the summer fallowed plat of the MC-series which will give a fair yield. The spring wheat varieties were harvested on the 12th.

Despite the dry, hot weather the corn appears to be holding its own except for a few dry spots. Sudan grass is growing some, the Sudan grass pasture is dry in a few local areas. Sorghums are growing but not very rapidly for this time of the year.

The hottest day of the season has been today. The temperature reached 104.5 this afternoon with a hot wind from the S.W.

Wheat harvest in the county is about half completed. There have been more combined-harvester-thresher machines purchased this year than have been used before in the county. Most of them have been the small 12 and 14 foot header threshers, a few 18 foot and a few 36 foot machines have been purchased.

DALHART:

The week as a whole has been very favorable to crop growth. The temperature has been rather high all week, ranging from 80 to 97 with temperatures above 95 on all but two days. Minimum temperatures ranged from 59 to 63. Three nights during the week heavy winds came up from the northwest and northeast and blew for several hours. Some damage was caused from these winds in some localities, but none on the station except breaking of a few limbs from the trees. One rain occurred during the last wind which netted .45 inch. This was sufficient to keep teams from the field for two days.

The oats were harvested the first of the week and put in the shock. Other field work consisted of cultivating field crops, plowing among trees, harrowing, and cultivating among other trees and some hoeing in scattered places. The first and second dates of planting will be laid by the first of the week with a 14-tooth harrow. These two dates are making good headway with the first and second date of feterita and Sudan headed. Some work was done on the well and windmill the latter part of the week. The sucker rods were pulled, new leathers put on and some re-

pairs made to the mill. It will be ready to operate again by noon today, July 15.

Some farmers are complaining of crops suffering for want of rain. From all indications the fault is not with the amount of rain that has been received, but in the manner in which the fields were handled. Some of the better farmers state that their crops are not in need of rain, fields clean, and crops nearly ready to lay by. Crops on the Station have not shown any signs of needing rain to date. Everything has grown rapidly and the color is a rich green. The first date of Sudan will be ready to harvest in about a week.

DICKINSON; report July 8:

Cool and cloudy weather has continued during the week with four light showers. This weather has been very favorable for grains and all now are in excellent condition. Both wheat and oats on the Rotations are almost ideal in appearance. The Kubanka variety which is grown on the plats has a maximum height of five feet three inches and the best oats will be about four feet high, when fully headed. Both oats and barley have stooled heavily and unless damaged by hail or drought will yield well. Flax also is excellent even though thinned some by wilt. Fall-plowed plats of both wheat and oats in the continuously cropped series are the poorest in the Rotations. Wheat on fallow is not as promising as on disced corn ground.

Alfalfa is now growing rapidly and promises a better second crop than the first. That which was spring-toothed after the first crop was removed is growing more rapidly than where the ground was not worked. A Dunham culti-packer has just been secured for use in preparing ground for future seeding of alfalfa and grasses.

Fallow on the Rotations and increase blocks was worked with the duck-foot cultivator on the 7th.

Work was begun on the 8th on the foundation for the tower of the Wind Electric plant.

Maximum temperature 85, minimum 42; precipitation .82 inch. The total rainfall for June amounted to 6.57 inches.

GARDEN CITY:

We have had good growing weather during the last week. All row crops are looking good.

The field operations for the week have consisted largely of killing weeds with the cultivator and hoes. Plats H and N in both methods of fallow series were plowed on the 10th.

Millet is about eight inches in height and is beginning to head. Feterita seeded on May 15 is heading.

Maximum temperature 103, minimum 56; precipitation .79 inch; evaporation 2.452 inches; average hourly wind velocity 9.81 miles.

HAVRE, report July 8:

The first few days of the past week were warm and dry. Monday was very warm, with a hot wind for several hours.

A storm, which started Friday evening and ended Saturday afternoon, resulted in 1.27 inches precipitation. This rain was not torrential and was one of the best July rains since the station started.

Most of the wheat on fallow-plowing and probably the barley and oats were so badly burned that yields will undoubtedly be light. Grains on fallow and spring plowing will be greatly benefited. Corn and late flax, neither of which have suffered from drought, will be benefited also.

A severe storm crossed the county the afternoon of July 4. At the Station there was a light shower, but in the northwestern part of the county hail was very severe. This hail hit the locality that has been favored by local showers and the

Havre, contd.

prospects at the time of the storm were excellent.
Maximum temperature 99, minimum 47; precipitation 1.27 inches.

HUNTLEY:

Warm weather accompanied by hot winds has hastened the maturity of fall-sown grains and has injured spring-sown crops to some extent. Of the spring crops, wheat and oats are firing seriously. This is due to the heavy growth of straw in these crops which has utilized the soil moisture more rapidly than has been the case with barley and flax. Corn has reflected the droughty conditions by curling tightly during the hottest part of the day. Though winter grains are far enough along to make a fair yield without more rain, spring crops will need a good supply of moisture in order to fill well.

Corn and other row crops were given their second cultivation during the week and some miscellaneous hoeing and rogueing was done in Field G.
Maximum temperature 94, minimum 41; precipitation .15 inch.

JUDITH BASIN:

Moderate weather prevailed during the first part of the week, but the last three days have been quite warm. Strong, hot winds during the latter period made conditions very unfavorable to crop growth, especially on the 14th when the daily evaporation amounted to .427 inch. Practically no precipitation was received and the majority of the crops are commencing to show signs of suffering from lack of moisture.

Spring wheat is almost fully headed and barley is commencing to head out. Field peas are in full bloom. Alfalfa and red clover have resumed growth and have attained a height of several inches. If a normal amount of precipitation is received during the following month, a second crop of hay apparently will be produced. Alfalfa seeded this spring has made a growth of about eight inches.

Field work has been devoted to the cultivating of row crops and fallow land, hoeing trees, spraying potatoes, spreading grasshopper poison, and weighing and putting up hay. The hay yields varied from 2300 to 3800 pounds per acre.

Visitors during the week were Mr. N. F. Woodward, Director F. B. Linfield, Mr. J. A. Clark, and Mr. C. W. Warburton.
Maximum temperature 86, minimum 42; precipitation .15 inch.

LAWTON:

Crops suffered from the effect of high temperatures and strong winds from the 8th to the 14th of July. On the 10th a maximum temperature of 101 was recorded and the wind velocity averaged about 17 miles per hour during the daylight hours On the morning of the 14th rain fell to the amount of 2.25 inches. The rain was quite general throughout the county but varied widely in the amount that fell. Sorghum crops are greatly improved in appearance; alfalfa is now in bloom, but the third cutting is too short for harvest except on the creek bottom land. Some of the late fields of corn will profit immensely from the rain but many of the earlier fields are burned beyond recovery. Cotton is now making very rapid growth. Young squares have been forming for some time and an occasional bloom is now seen. Many farmers are complaining of the boll weevil, while others report no damage yet.

The following yields of oats were produced this year:

Oats on fall-plowed alfalfa land	.54.6	bu.per acre
Oats on fall-plowed cotton land	.42.2	do
Oats on disced cotton land	.41.1	do
Oats on disced kafir land	.45.3	do
Oats on disced wheat land	.32.8	do

Lawton, contd.

On account of the dry soil in the spring, oats was not planted until the very late date of March 7. In view of this fact the yields are unusually good. The heavy rains of April and May are responsible for the oat crop this year.

The results of the variety test of oats are as follows:

Texas Red	16.9	bu. per acre
Fulghum	32.8	do
Ferguson Fulghum	39.8	do
Albion	27.2	do

The yields of winter wheat ranged from 0.0 to 6.5 bushels per acre. The grain was shriveled to such an extent that it would not attain a market grade of any sort.

MANDAN:

Agronomy.

Weather during the past week has varied from cool to hot. Maximum temperature 96, minimum 64; precipitation 1.21 inches.

The rain early in the week helped small grains to some extent. While the yields of small grains will be good for the season, the yield has been reduced because of moisture shortage during late June and early July. Oats is nearly ripe and will be ready to cut next week. Kubanka wheat on some plats is over four feet tall. Very little rust is showing up on the Station and wheat is now far enough advanced so that the danger from it is practically past.

Corn has made rapid growth during the week, and is now well advanced. It was given the last cultivation during the week.

Alfalfa and brome grass in Field P yielded a little over a half ton per acre

Cooperative Grazing Experiment.

Native vegetation remains in good condition for grazing. It has dried up to some extent in spots.

A great many seedlings of Artemisia frigida are found in all pastures. The 30-acre pasture contains the largest number.

In some manner one of the steers in the rotation pasture got his hip broken, and it was necessary to have him butchered.

Arboriculture.

Hoeing and cultivating has continued during the week.

Mr. Emerson has inspected cooperating farmers' tree plantings along the east side of the Missouri River from Bismarck to Williston. Mr. Hansen has inspected from Bismarck north to Minot, and east to Bottineau, and along the Canadian line. Both men report fine looking crops, though there has been some hail in the vicinity and north of Minot. Rain has continued in this district off and on all week, with the resulting heavy and rough roads.

The aphids are multiplying very fast in the poplar cutting block, and will be given a spray of Black Leaf 40 combined with lead arsenate, the latter is to kill the poplar beetles and larvae.

Caragana seed is becoming ripe and will probably be picked within the next week.

Horticulture.

Peas, beans, cabbage, cauliflower, carrots, beets, and onions are now being harvested from the acre-garden. The quality of most of the vegetables is good, yields and quality being better in general than was the case last year.

Mandan, contd.

Currants in the variety test were picked on July 5 and 6. Pomona was the best yielder this year, Red Cross being second, and London Market third. The quality and size of the currants, as well as the yield, was much better than was the case last year.

June bearing strawberries are now picked. Minn. No. 775 (Easypicker) yielded the highest, while South Dakota was second. Up to the present date Minn. No. 1017 (Duluth) has been the best of the everbearing varieties.

Raspberries have also been picked over twice up to the present time. Loudon and Sunbeam appear to be among the best of the varieties being tested. Yields of raspberries, as of other small fruits, will be considerably better than was the case last year.

Currants, gooseberries, Juneberries, and Prunus tomentosa seedlings are now ripening in the plant breeding blocks. Selections have been made, some of which appear to be very promising.

Other work has included spraying trees, vines, and potatoes; hoeing weeds; tieing up one year buds to prevent breaking, and inspecting wild fruit in the vicinity.

Visitors included Mr. C. W. Warburton and Mr. J. Allen Clark of the Office of Cereal Investigations; Mr. H. L. Westover, Office of Forage Crop Investigations and Prof. Waldron of the North Dakota Agricultural College.

NORTH PLATTE:

The early part of the week was cool with several showers. The past three days have been very hot and dry.

Second crop alfalfa is being put up on the station. On account of dry weather in June the crop is less than half as heavy as the first cutting.

The last of the spring wheat varieties and rotation plats, which greened up after the rain of July 2, are being cut today.

Threshing will be begun as soon as the alfalfa is out of the way.

SHERIDAN:

The rains of last and the showers the first of this week prevented general field work the first of the week. Cultivation of row crops on the sand land on the north side of the Station was begun Tuesday. All row crops were cultivated during the week, except a part of the bulk cane and a portion of the potatoes. All of the summer fallow and the newly planted shelterbelts were spring tooth-harrowed.

All crops are looking well. Early seeded oats on fallow is nearly ready for cutting, and the barley on the rotations is ripening rapidly. The barley on Rotation II-7 lodged badly over the entire plat from the recent rains. Corn began tasseling early in the week.

Maximum temperature 95, minimum 47; precipitation .43 inch.

TUCUMCARI:

The past week has been favorable for field work and most of the time hoeing has been the principal diversion. All rotations in the north field and a number of plats in the south field have been gone over, while it appears that it will be necessary to hoe the center field a second time. Buffalo burrs and bull nettles seem to thrive this dry weather, growing so close to the crops that one cannot cultivate with any success, making it necessary to hoe and pull these weeds.

Dwarf milo, increase, was cultivated for the third time, using the five tooth, walking cultivator. This got all the weeds between the rows. The increase kafir, cowpeas, and cane in the north field were cultivated the second time, using

Tucumcari, contd.

knives on the sulky cultivator. This killed most of the weeds except those close to the plants.

Feterita in the variety test and in the May 1 date test is beginning to head, while dwarf milo in several rotation and M.C. plats is in the boot. Crops will apparently be very short, as the feterita is less than waist high, while the dwarf milo is not more than knee high.

Crops are rolling some during the heat of the day, although good growth has been made the past week. Broadcast cane seems most in need of moisture and some strips of this crop look very bad.

The rains early in the month helped the row crops temporarily, although pastures did not seem to revive. According to reports, this is the dryest part of the county. The State College is attempting to sell the grade Hereford range cows, but it is impossible to secure a good offer for this stock. Cows with calves are selling from $30 to $35, while dry cows are offered at $25 to $30, with few buyers. Steers are in demand, yearlings being priced at $25 to $30. It seems that ranchers have lost so often on cows that they all want to reduce their cow herd and pick up steers, with the result that steers are selling higher than cows, comparatively.

Great interest is being displayed by the broomcorn growers of this county in the cooperative marketing association organized this spring. Last year the acreage was about 1200, while this year about 2500 acres have been planted in broom corn. About 70 per cent of the acreage is signed up in the organization. Broom corn seed was distributed to about a dozen farmers this spring and all report excellent germination and good stands.

Maximum temperature 99, minimum 64; precipitation .08 inch; evaporation 2.596 inches; average wind velocity 6.3 miles.

WOODWARD:

Since the first of July we have had 1.06 inches of precipitation. Though this has fallen on four different occasions it has given us enough moisture to get a little planting done.

Wheat harvest is finished in this locality and threshing has commenced.

Most of the work during the week has consisted of cultivating; all of the Cereal and Dry-land Projects and several of the fields have been cultivated. The ends of the plats have been trimmed and roads disced on the Dry-land Project. Soil samples have been taken on the C.C. milo.

A few peaches and plums, and part of the Compass cherries, of which we have a very good crop this year, have been picked. Greenwood cuttings made from Chinese elms the middle of last week are beginning to show signs of growth.

Maximum temperature 99, minimum 63; precipitation .29 inch and T; evaporation 2.119 inches.

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JULY 22, 1922.

AKRON:

Harvest was continued during the past week and all grain badly in need of attention was harvested. This included the two acre fields of Kanred on the Sheep Rotation, the rotation extension oat plats, the remainder of the rotation oat plats except the fallow plats, and practically all the winter and spring wheat variety plats on the Cereal Project. Other work consisted of plowing fire guard along the railroad right-of-way, and of plowing back the sod to a greater distance from the trees in the forestry planting on the west and north sides.

Two severe hail storms were reported in various parts of the county the past week. Harvesting is in active progress on the farms and some combination harvesters and threshers are at work. Wheat harvest is probably half finished. Wheat is selling on the local market at 90¢.

Mr. J. M. Stephens and Mr. John Kelso are visiting the station today.

Maximum temperature 99, 90 or above on five of the seven days, minimum 50; precipitation..30 inch.

ARDMORE:

Work at the station during the week has consisted largely of mowing and raking small grain plats and fields that were destroyed by hail on July 1. Considerable roughage has been secured, but it has no particular feeding value.

Corn has made considerable growth since the storm, mostly by suckering, but indications are that the crop which will be produced scarcely will pay for harvesting. Probably no grain will be produced. Cane has recovered in a satisfactory manner and will produce considerable feed. The second crop of alfalfa is making a rapid growth.

Mr. T. K. Killand of Mandan is visiting the station this week, and laying out the grounds around the building for tree and shrub plantings.

The Superintendent of the station gave addresses at Oarl and Oelrichs, South Dakota, during the week at Farmers' Picnics.

BELLE FOURCHE:

Grain crops are ripening rapidly. Most of the barley was cut on the 18th. Some oat plats were ready to harvest the last of the week, but rain prevented any harvesting being done.

Corn is beginning to tassel. All row crops are in good condition.

The farm picnic was held on the 22nd. A heavy rain on the night of the 20th cut down the attendance and rain on the afternoon of the 22nd prevented the full program from being carried out. The attendance was about 1200.

The total precipitation for the week was 2.37 inches, of which 1.79 inches fell on the 20th. The precipitation for July to date is 5.84 inches. This is higher than any previously recorded precipitation for the month of July.

Maximum temperature 92, minimum 48.

BIG SPRINGS:

Dry hot weather has continued this week, with hot winds blowing for two days. Crops in general are not suffering from the need of moisture, although the milo and kafir on the continuously cropped plats are heading out before those on fallow. Cotton is making a good growth and is in good shape throughout the county.

The first cutting of Sudan grass from the second date of planting was hauled in this week; it yielded 2050 pounds per acre. The first cutting from one of the fields was also hauled this week; it yielded about a ton of fine quality hay per acre. Other work for the week consisted of harvesting millet, plats, hoeing weeds, and filling in a badly washed out roadway.

Maximum temperature 102, minimum 76; precipitation 0.

COLBY:

Weather conditions remained hot and dry during the week with the exception of a light shower of twenty points on the night of the 21st which was not sufficient to do any good. Corn on the D. L. A. plats is about 50 per cent tasseled and apparently has not yet been hurt any by the dry weather. Some of the corn varieties have been rolled and appeared dry several days of the week. Sorghums made good growth during the week. Sorghum varieties were rethinned to count during the week. The field of Red Amber for silage was cultivated during the week.

Bindweed areas were worked during the week. Apparently some headway is being made with this pest.

Work was started during the week on an electric power line from the City of Colby. Work would have been started sooner but we were forced to wait until they were through with stringing new wire and setting new poles in Colby. A 15 h.p. motor has been ordered which expect to use for threshing, feed grinding, silo filling, and pumping at the small irrigation plant.

GARDEN CITY:

The last week was characterized by high temperature and hot winds. Drilled sorghums are showing the need of moisture badly. Row crops have not been damaged much as yet.

The first date of seeding Sudan was cut for hay. Feterita and Sudan on the May 15 date of seeding is heading. Most of the cowpeas on the project are in bloom

Field operations for the week have consisted of killing weeds.

The station was visited this week by Director F. D. Farrell and Professor L. E. Call of the Kansas station.

Maximum temperature 107, minimum 56; precipitation .02 inch; evaporation 2.866 inches; average hourly wind velocity 8.7 miles.

HAVRE:

Growing conditions have been more favorable during this period in July than they were in June. The only precipitation was .22 inch on the 15th, but with the rain which fell during the week of July 8, many of the crops have made good growth.

Most of the wheat and oats on the rotations seeded on fall-plowing was so badly burned before the rain that there has been but little recovery. That on fallow and corn land which was not severely burned is short but has filled in good shape. Corn and flax have made very rapid growth and are at this time in better condition than any year since 1916, while results with small grains will likely show more absolute failures than for any year since the station started.

Yields over this part of the state will vary a great deal. Along the Great Northern prospects are good west of Kremlin, and with one more good rain many fields will yield as heavy as in 1916. Starting about 15 miles north of Havre and extending to the Canadian border the same condition prevails. From here south and extending into the mountains, conditions are much less favorable and only the late seeding will make a crop.

Grasshoppers have been very numerous. The plats have been poisoned three times with poisoned bran mash, but there still remain enough to do serious damage to corn and flax after small grains are harvested. Most of the rye on the station was badly injured. Instead of eating the leaves and stems as they do on most small grains they took the grain on the rye. Grasshopper infestation is quite general over the entire county and serious in some localities. There is one community north of Havre where most of the wheat has been taken. This county has been doing practically nothing as a county in poisoning and with the general infestation the individual farmer is almost helpless.

HUNTLEY:

The past week witnessed a wide fluctuation in temperatures and other climatic factors. On the 16th and 17th the weather was unseasonably cold, the minimum temperature being 40 degrees. The balance of the week has been hot and dry, with the exception of the night of the 20th when a light shower relieved this condition temporarily.

Winter grains have matured rapidly and will soon be ready for harvesting. Spring grains, with the exception of the Success barley, have made but little progress toward filling and in most cases the crops are firing badly. The light shower of the past week was best utilized by corn which was beginning to look dry.

The hogs were removed from the alfalfa and brome grass pastures on the 18th. Though a large amount of forage remained on all plats grazed it had become coarse, dry, and unpalatable to such an extent that the hogs ate very little of it.

Maximum temperature 99, minimum 40, precipitation .34 inch.

LAWTON:

An intense heat wave has existed during the past week. At present there is not any indication or prospect of immediate relief. From the 19th to the 22nd inclusive, the maximum temperatures recorded were 100, 104, 105, and 105.

Sorghum crops are making fairly good growth, but show the effects of the intense heat. Fortunately, for growing crops at least, the wind velocity has been low. Cotton has made unusually rapid growth since the heavy rain which fell on the 15th. The plants are fruiting and blooming. Heavy infestations of boll weevil are reported in many places. Damage is not yet apparent on the station crop.

All hopes of a reasonable yield of corn in southwestern Oklahoma faded completely during the past week. There are a few fields of late corn on lowland that may do fairly well.

Two plats of kafir in the date of seeding test that are now just entering the milk stage were sprayed with lead arsenate on the 21st and 22nd. Birds are starting their damage earlier than usual and it is barely possible that the lead arsenate may make the tender heads very unattractive food. Should such treatment give positive results it may simplify means of bird damage control. Not much material is required per plat and the work can be done with fair rapidity.

About 300 out of town visitors who were attending the Lee Highway Convention at Lawton drove through the station and viewed the crops on the 21st.

All row crops, except corn, were cultivated during the week and good soil tilth obtains.

MANDAN:

Agronomy.

Most of the past week has been hot and dry.

Maximum temperature 94, minimum 14; precipitation 0.

Small grains have ripened rapidly during the week. Oats in the rotations were harvested and fair yields will be obtained from most plats. Wheat is ripening rapidly, and in most cases too fast to fill well. Corn is making rapid growth and is well advanced.

Crested wheat grass (Agropyron custatum) was harvested for seed for the Office of Forage Crop Investigations. Peas grown for forage yielded about a ton per acre.

Practically all of the tame hay for feed is now in the stack. The total amount is over 70 tons which is the most that has ever been put up on the station during a single season.

Cooperating Grazing Experiment.

Vegetation still remains in good condition for grazing and the cattle ap-

Mandan, contd.

pear to be putting on good gains for the month.

Very little vegetative growth is taking place at the present time and many of the earlier species are dried up.

Arboriculture.

All poplars in the cutting block in Field L and the poplars in Field E were sprayed with a combination of arsenate of lead and Black Leaf 40. This was for the poplar beetle and the aphis. Caragana seed is being picked and is ripening very unevenly. Some has already popped open and on other trees the seeds are fairly green. Although there is considerable seed remaining from last year, the usual amount will be picked.

Mr. Emerson has completed his inspections in North Dakota, and entered Northwestern Montana, and is in the vicinity of Glasgow. He reports fine crops all along the Great Northern Railway. Harvesting of rye has begun. Mr. Hansen has finished his inspections in northern North Dakota along the Canadian line, and has entered eastern Montana and will proceed up the Yellowstone River country as far as Terry, then follow the Milwaukee Railway country into South Dakota. He also reports fine crops with harvesting begun. Neither man has reported there being any rust, in fact, they have reported the absence of it.

NORTH PLATTE:

Threshing is under way on the station. Winter wheat on the rotations has been finished. The average yield was 13.8 bushels per acre. Minimum yield was 5.8 bushels on continuous wheat. Maximum yield was 26.5 bushels on 10-years of summer tillage in Rotation 115. The plat on which 10 crops of rye had been plowed under yielded 16.7 bushels. Corn continues to make a rapid growth. Visitors during the week included Director E. A. Burnett and W. W. Burr of the central station.

SHERIDAN:

The week has been quite favorable for field operations. The first two days were exceptionally cool, but the rest of the week has been quite warm and with practically no precipitation.

All of the shelterbelt, both old and new plantings, was hoed during the week. Large weeds left by the spring-tooth harrow also were cleaned off the fallow plats.

All of the oats on the station, except the later varieties, and one late seeded block of Sixty Day oats, are ripening rapidly. Those seeded early on fallow were harvested during the week. About half of the plats of barley in the Rotations also were cut. The varieties of barley, the rest of the barley in the Rotations, and a number of the oat plats in the Rotations will be ready to harvest the first of next week. Bangalia and Golden Vine field peas were harvested today. All of the other varieties of peas are still quite green. Some of the winter wheat and the Peliss wheat in the check plats, is just beginning to turn.

Maximum temperature 97, minimum 42; precipitation .11 inch.

TUCUMCARI:

With only 9.56 inches of rainfall since September 1, 1921, the dryest period since 1917-16, indications point to a poor crop in this locality. Kafir is not suffering seriously, while dwarf milo in many rotation plats and the A and B M.C. plats is rolling and firing extensively. All crops on fallow look well. Sumac in rows, for use in the steer feeding experiments, is not suffering from the drought, although broadcast Sumac is firing badly; much of the latter will die unless rain comes soon. Cowpeas are growing well, apparently getting sufficient moisture.

Tucumcari, contd.

Much of the corn on the Station is infested with the larger stalk borer, although the station infestation is much less than on many commercial fields throughout this section. It is said the borer was not serious last year, although present to a limited extent. Early in the week the writer went through a hundred acre field where at least 95 per cent of the stalks were being attacked on the corn on corn land, while possibly one-half of the stalks on sod land were infested. Late corn, which is less likely to be attacked than early planted corn, is also badly infested with the borer. Corn has recently been increasing in acreage in eastern New Mexico, but since spraying is unsuccessful, the stalk borer may make it necessary for farmers to discontinue corn for one or more seasons.

During the past week the center field and the remainder of the south field were hoed. The orchard was spring-toothed and hoed, while many of the trees and shrubs were watered. All plats were trimmed and roadways mowed. The A plats, M.C. wheat and rye were mowed to prevent weeds from going to seed, while the B and C plats were double disced.

Early Buff Cowpeas, planted May 11, were harvested this date. The yield was very light. A portion of the plat was picked for seed. Much milo in the rotation plats and increase fields is in head, while the first dates of milo, feterita, red amber, and Sudan grass are in practically full head. Early Standard kafir, Sunrise, is at least a week later in heading than dwarf milo.

Maximum temperature 102, minimum 65; precipitation 0; evaporation 3.168 inches; average wind velocity 5.6 miles.

WOODWARD:

The past week has been very hot and dry with no precipitation, and with a maximum temperature of 107 and a maximum temperature of above 90 every day.

The Sunrise kafir on the plats is heading but is only about three feet tall, the usual height of this crop being from five to six feet. Crops over the county, especially sowed feed, are beginning to show bad effects from a serious lack of moisture. Some fields of rowed crops which have been observed also show the effects of lack of moisture.

Most of the work during the week consisted of discing wheat and rye ground, plowing some of the wheat plats, some cultivation, and the pruning of shade trees; some fencing also was done.

Several orchards and vineyards in Ellis and Dewey counties were visited during the latter part of the week. About twenty miles southeast of Woodward, in Dewey county, they apparently have had sufficient rain up to date as the crops are in very good shape, but southweat of Woodward, in Ellis county, there is evidence of very serious lack of moisture, some of the catalpa trees and other trees were noticed as being very badly wilted and one orchard was noticed where even the weeds were practically dead from lack of moisture.

Maximum temperature 107, minimum 64; evaporation 2.853 inches; average wind velocity 5.7 miles.

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING JULY 29, 1922.
(Except as otherwise indicated.)

AKRON:

Harvesting was continued with the result that practically all of the experimental plats are in the shock. There remains one increase field of Kanred approximately two and one quarter acres and one increase field of Clark's Blackhull approximately three quarters of an acre. Nursery harvesting on the Cereal Project was more than half completed. Some cultivating was done in the west orchard. Cherry picking has held attention for the past two weeks. The first trees to ripen were the varieties Timme and Richmond. These were followed about a week later by the Montmorencys and the Montmorency Ordinaires. English Morellos are not yet ripe enough to pick. All trees except Ostheim and Homer were laden with fruit.

Mr. J. M. Stephens visited the station early in the week. Mr. John Kelso arrived with Mr. Stephens and stayed until Wednesday outlining a water and sewerage disposal system. Mr. E. B. Brown has spent the week here making hand pollinations and taking notes on experimental corn plantings.

Maximum temperature 93, minimum 54; precipitation 2.14 inches.

ARCHER, report July 22:

The weather conditions have been favorable for intertilled crops such as corn, sunflowers, and potatoes, but has been quite disastrous for the small grains. The precipitation since July 1 has been nil. The rains during the last week of June have proved sufficient to the present time for intertilled crops. There was a large run-off from the land in small cereals and hence during the dry weather which followed has caused the wheat, oats, and barley to burn.

The greater part of the work during the past week has consisted of preparing for and clearing up after the Farmers' Day at the station. The gathering consisted of about 1500 people. This is not as large a gathering as was that of last year. This is partly due to the difference in the scheme followed by the cooperating parties: The Laramie County Farm Bureau and the station staff. However, the plan of instruction followed was more extensive and the sports were to a considerable extent curtailed.

The educational work consisted of a rather extensive trip through the experimental field during which explanations were made of the various experiments and their application in solving the practical farm problems. Live stock judging consisted of judging dairy cattle and swine. Poultry judging and culling was conducted by a specialist from the University. The County Agent and Home Demonstration Agent were active in their lines of work.

The outstanding features of the field trip were the consideration of Rotations 18 and 19, and the eradication of a weed locally called "fire weed" (Fransería tomentosa.)

Rotation 19 presented by far the best crops. This fact was noticeable at a considerable distance. The wheat and oats, in contrast to the other rotations, were looking fine and had made a good growth. In Rotation 18 the oats had suffered to some extent for moisture. The wheat, oats, and barley on all plats except those seeded on fallow are suffering because of the lack of rain.

Maximum temperature 95, minimum 47; precipitation 0.03 inch.

ARCHER:

The week has been rather cool with a few hot dry breezes during the early part of the afternoons. The corn leaves rolled considerably and the sunflowers wilted badly. Rains of .70 and .16 inch occurred during the nights of July 27 and 28. These rains greatly benefited the corn, sunflowers, and potatoes. Late seed-

Archer, contd.

ed cereals will also be benefited. Most of the grains which normally should be in head will be helped but little as they are for the most part burned beyond recovery.

The work at the station has consisted of plowing the green manure plats, thinning the Dry-land plats, and breeding corn and sunflower plats.

Mr. J. M. Stephens visited the station July 24.

Maximum temperature 87, minimum 49; precipitation .94 inch.

BIG SPRINGS:

Weather conditions have been a duplicate of those of last week, namely, dry and hot. The maximum temperature for this week has averaged 97 degrees with a daily evaporation of nearly .5 inch.

While cotton and cowpeas are looking healthy and making a good growth, milo and corn have started to fire considerably. Moisture determinations on M.C.A. milo shows only 3.8 per cent for the first foot and 6.2 per cent for the second foot, while Plat B shows 4.5 per cent for the first foot and 9.2 for the second foot.

The twenty-year rainfall average for July is 2.29 inches, but as yet we have had only a few signs this month.

Sudan grass in the rotations, forage varieties, and the third date was harvested this week, as were also the drilled plats of kafir, millet, and Sudan grass. All of the drilled plats were very short and had burned badly. Other work for the week has consisted of repairing fences, filling in roadways, and cleaning out fence rows.

Maximum temperature 98, minimum 75; precipitation 0.

COLBY:

The precipitation of 1.68 inches, the first of the week, revived row crops so that there were none to suffer except three fall-plowed corn plats on the D.L.A. project. There were nine of the corn varieties that showed the effect of the drought to an appreciable extent. This was due to a difference in soil moisture where these varieties were located. Sorghum varieties and sorghum plats continue to show good growth. Some of the milo plats, listed, show a very uneven stand due to the fact that they were very uneven coming up. Some lay in the ground approximately a month before germination took place.

Work during the week consisted of completing the electric power line, throwing in listed sorghum plats, discing some of the bindweed areas, and working on machinery during the rainy weather.

All corn plats are completely silked out and apparently the ears may have a chance to fill. Milo is in the boot and has a good color.

Visitors during the week included Mr. E. F. Chilcott, of the Woodward Field Station.

DALHART:

Climatic conditions have been quite severe for the past two weeks. No rain has been recorded and temperatures have been high. There has been very little wind during the entire time and what winds did blow were not. The station water supply became quite low during this time on account of so little wind to run the mill.

Crops are suffering for rain in the whole Panhandle. Farmers are feeling pretty blue over the prospects of a crop this year. One farmer visiting the station during the week stated that his crop sure suffered before it died. Crops on

the station, while needing rain, are looking pretty good yet. There are only a very few plats that are beginning to fire. The first and second dates of milo and the plat of broom corn are firing some. A good many of the varieties are heading or trying to. The heading is a slow process this year on account of dry weather.

After traveling about 530 miles and seeing the condition of crops in New Mexico and northwest Texas, the crops here look like a paradise. In some places farther west the crops have burned completely, at other places they are slowly dying. In the irrigated section in northwest New Mexico, the water is so scarce that many farmers have not been able to get any at all. On top of this they have had no rains, so that crops are a total failure in some places.

Some construction work is under way on the station. A new shed is being built adjoining the west side of the stable for housing the manure spreader. It is being built with station labor entirely. One plat of Sudan, first date, was harvested during the week. The second date is not quite ready to harvest.

Maximum temperature 99, minimum 60; precipitation 0. The maximum temperature during the entire week ranged from 96 to 99. On Saturday the 22 the maximum temperature was 100, which is the highest for this year.

DICKINSON:

The present prospect is excellent for all small grains and unless injured by hail or excessive rains, the best crop will be harvested since 1915.

During the early part of the week dry and hot weather hastened maturity of grain and possibly reduced the yield on light soil where some wilting occurred. On the 25th a shower of .43 inch relieved this condition. Showers later supplied ample moisture for maturing practically all grains.

On the rotations the highest yields undoubtedly will be harvested from disced corn ground and fallow. Wheat on spring plowing in the continuous cropping series looks exceptionally well this year. On fall plowing, however, in the continuous series the crop is the poorest of any wheat in the rotations.

Forage crops have made rapid growth recently. The second crop of alfalfa is ready to harvest. Field pea varieties look particularly promising this year and soybeans grown for the first time on the station also have an excellent appearance. The best varieties are coming into bloom at a height of 30 inches. Winter rye varieties were harvested July 22. Winter wheat varieties were cut on the 26th and early varieties of barley and wheat were harvested on the 28th. Grass plats were cut for seed on the 28th and 29th.

A plant disease survey of the station plats was made on the 26th and 27th by Dr. W. Weniger, Plant Pathologist, of the North Dakota Experiment Station. No diseases were of much importance to the present crop. On the continuous wheat series of the rotations the sixteenth crop of Kubanka wheat was free from disease except a small amount of leaf spot. Susceptible varieties of wheat show a small percentage of rust but commercial fields are practically free. Late fields might yet be damaged some but the indications are for a very clean crop. A bacterial disease was found in corn (probably Stewart's disease.) A number of potato fields in the locality were inspected by Dr. Weniger and with one exception all could be certified. Rizoctonia was present in small amounts in all fields and Blackleg in some.

A shipment of 50 pounds of macaroni and spaghetti made from wheat produced on this station has been received from the milling department of the Agricultural College. This macaroni was made by a Minneapolis company from semolina, millet at the Agricultural College.

The first ripe tomatoes and sweet corn were obtained from the garden July 25.

Assistant Secretary of Agriculture, Mr. C. W. Pugsley, made a short visit to the station on the monring of July 25. Mr. Pugsley was making an auto trip across the State accompanied by Director P. F. Trowbridge, Extension Director G. W. Randlet, County Agent Leader J. W. Haw, and Ralph Andrews, all of the Agricultural

Dickinson, contd.

College. President John Lee Coulter of the Agricultural College visited the station July 29th. Mr. C. W. Warburton, Mr. H. L. Westover, and Professor L. P. Waldron were here on the 15th. Mr. J. A. Clark came on the 15th and again on the 24th, and Mr. T. R. Stanton came on the 28th to remain until August 1.

Maximum temperature 88, minimum 41; precipitation .59 inch. July precipitation 1.93 inches; total since January 1, 13.35 inches, compared with 10.42 inches for a 30-year average.

GARDEN CITY:

High temperatures and hot winds have prevailed throughout the week. The thermometer reached 102 or above four days during the week. All crops are showing the need of moisture.

Four Sudan plats were cut for hay. The average yield was a little over a ton to the acre.

All of the winter wheat on the project was threshed the first part of the week. The average yield for all plats was 13.1 bushels to the acre. This yield is somewhat lower than the actual amount of grain produced because a part of the grain was threshed out by the windstorm of July 6.

Maximum temperature 105, minimum 65; precipitation 0; evaporation 3.22 inches; average hourly wind velocity 7.5 miles.

HAVRE:

Temperatures during the past week have been less severe than for the week previous.

Barley and oats matured and were harvested. Both of these crops were failures on fall-plowing. None of the yields will be heavier than they were last year.

Corn and flax continue to grow rapidly with no sign of suffering from drought.

Maximum temperature 88, on the 28th; minimum 50, on the 26th; precipitation .18 inch.

HAYS:

The weather during the past two weeks has been hot and is getting very dry. Temperatures during the past week have ranged between 63 and 104 degrees. Hot winds the past few days have been common. Corn is now suffering very much from drought. It is all out in tassel and many silks are showing, but the fodder is drying up.

Milo is heading, but is also badly needing rain. This crop is wilting very much but is not drying off as much as the corn. Kafir is commencing to head and is suffering about the same as milo. Practically all corn plats are suffering alike, but with the sorghums in the tillage methods, the fall-plowed plats are burning much more than any of the other plats. This has been noticeable for two or three seasons in succession.

Threshing of the small grains was finished Thursday the 27th. This work was commenced the 19th, and was continued every day without interruption until finished, there having been no rains to interfere and no hard luck with machinery. It was one of the most successful jobs of threshing we have experienced at this station. Two hundred and forty plats were threshed.

A careful calculation of yields has not yet been made, but from the calculations which have been made it is safe to announce that the average from all plats of oats is 50 bushels, barley 35, and spring wheat 20. The lowest yield

from winter wheat plats was one-half bushel per acre from continuously cropped late fall-plowed. The average from 20 plats of the oldest wheat work on the project is 20 bushels. The yields from fallow plats ranged upward to 39 bushels per acre. The quality of spring wheat is the best ever raised on the project, some of it testing 62 pounds per bushel, and none testing below 60.

Seedbed preparation for winter wheat soil moisture determinations and grasshopper fighting is the work being done at this time. Grasshoppers are coming in rapidly from surrounding fields.

Mr. J. M. Stephens and Mr. E. F. Chilcott are here today, July 29.

HUNTLEY:

The harvesting of winter rye and the early maturing plats of winter wheat took place on the 26th and was the only machine work done on the Dry-land fields this week. Soil sampling and the second hoeing of roads and alleys is in progress.

High winds accompanied by rain visited this section on the 26th and 28th and caused much damage by lodging grain and hay crops. On the Dry-land plats winter wheat and oats were badly lodged but a good share of the grain has righted itself to some extent and the present outlook for cutting is more favorable.

Showers and cloudy weather during the week have revived crops that were suffering from drought and have been beneficial fo grains that are filling. Winter wheat is ripening slowly and though no "bumper" yields are expected, the grain ought to be of very good quality.

Maximum temperature 90, minimum 53; precipitation .91 inch.

JUDITH BASIN:

The hot weather and drought of the past month continued unbroken during the week except for a number of light thunder showers which were not sufficient to be of any benefit to crops. The precipitation thus far for July is nearly one inch less than normal and the moisture which has been received during the month occurred in the form of light rains of very little value.

All crops are suffering seriously from lack of moisture and the small grains are maturing very rapidly. Winter wheat and oats are practically ripe and harvesting will commence on the station the first of next week. Field peas were plowed under during the first part of the week.

Grasshoppers have been more numerous this year than ever before in the history of the station and it has been necessary to distribute poison nearly over the entire farm to keep these pests under control.

Mr. M. N. Pope, of the Cereal Office, visited the station on the 28th and 29th.

Maximum temperature 84, minimum 46; precipitation .43 inch.

LAWTON:

Hot dry weather continues with considerable damage to all growing crops except cotton. Today marks the eleventh day when 100 is the lowest maximum temperature recorded. During the past week the maximum temperature has ranged from 101 to 105. The wind velocity, however, has averaged only three or four miles per hour.

Practically all of the Sudan plats in the forage sorghum tests have been harvested. Fair yields have obtained in most cases but the chinch bug infestation has become so heavy that harvest could not be delayed longer. The rowed plat of millet was almost completely destroyed and the broadcast plat began to die before maturity, because of chinch bug damage. A new brood of bugs has recently hatched and present indications are that all forage and grain sorghum projects will be damaged with extreme rapidity unless there is sufficient rain to retain the crops in a vigorous condition.

Lawton, contd.

Messrs. King and Ballard of the Greenville, Texas, Station have been here during the week taking notes on the cotton project. As yet there are not any indications of the boll weevil damage on the station. Although there have been such reports from the various parts of the county, the infested spots are hard to locate when actually traced down. The hot wave that has prevailed since the 19th will tend to check the development of the weevil more than any artificial measure of control that could be used now.

MANDAN:

Agronomy.

Temperatures for the past week have been practically normal for this time of the season. Light rains have been frequent and have interferred with the harvest of small grains.

Maximum temperature 90, minimum 54; precipitation 1.42 inches.

Flax in the rotations was harvested. The yield of flax this year will be better than for some years past, but not high enough to more than pay for production.

A small field of feed oats and barley was harvested.

Corn continues to make good progress. The corn plats contain more smut than usual.

Wheat will no doubt be ready for harvest during the coming week. Some of the plats that were injured by the drought early in the season are now ready for harvest.

All fallow plats were again worked with the John Deere duck-foot cultivator; this machine has done very good work on the fallow plats to date.

Cooperative Grazing Experiment.

Native vegetation continues in good condition for grazing; growth, however, for the season has practically stopped.

The units in the mowing experiment have been cut and weighed. The yields this year are higher than those during previous years. The average yield per acre from units cut annually is about 450 pounds, and from those cut every other year the yield is about 900 pounds. However, the hay in the latter units is of much poorer quality, as it contains the old growth of 1921 and the weeds are much coarser.

Arboriculture.

Mr. F. E. Cobb left on July 28 for a short inspection trip east of the Missouri River. He is expected to return August 2.

Mr. Emerson is in the vicinity of Harlem, Montana, and Mr. Hansen near Fort Pierre, South Dakota.

Mr. Wilson plans to leave on August 2 for an inspection trip to include the tree plantings at the Havre, Moccasin, Huntley, Sheridan, and Ardmore stations.

Visitors during the week included Mr. Ralph W. Smith and Mr. J. Allen Clark, and Mr. Thomas R. Stanton, from the Office of Cereal Investigations.

Horticulture.

The rains of the past few weeks have been very beneficial to all horticultural plantings. Early vegetables and all small fruits are yielding much better than was the case last year, and the quality is also superior. Beets, carrots, onions, potatoes, peas, summer squash, cabbage, cauliflowers, and tomatoes are now being harvested from the acre garden.

All the different tomato selections have set fruit very nicely this year, so there should be an excellent opportunity to study and compare them. Some are already beginning to ripen.

Most of the gooseberries were picked during the week, and good yields were obtained. Dr. Van Fleet was the best of all, yielding a very heavy crop of large, fine berries. Carrie was also quite good, although considerably smaller, and seems

to be a comparatively easy variety to pick. Some of our varieties are evidently not true to name. It is believed a few of the gooseberry seedlings in the selection blocks are worthy of propogation.

Raspberries are still fruiting quite freely, the crop being considerably better than has been the case since 1916. Raspberries have been at least partial failures in all other years since work was started in 1914, or in other words there have been two crops of raspberries in a nine-year period. London and King are yielding very well in the variety test. Latham is producing fine large berries but the crop is rather light.

Black currants are also doing well this year and some selections have been made, the fruit of which appears to be larger than Crandall.

Prunus tomentosa seedlings have all been picked. Several nurseries in this region have sent in requests for seed and appeared to be interested in getting this fruit on the market. It is an attractive little cherry, although lacking somewhat in size and sweetness. There is also some doubt as to its hardiness. Seedlings vary considerably in regard to the quality of the fruit, and selection work would appear to be promising.

Other work has included going over the potato field and rogueing out diseased vines; irrigating the nursery; trimming hedges in the arboretum and on the grounds; and hoeing weeds.

SHERIDAN:

A severe wind and rain storm accompanied by some hail in places swept the station last Sunday evening and did considerable damage to oats and corn. Oats probably suffered fifteen to twenty-five per cent from the wind and hail. The leaves on all of the corn on the north and east part of the station were stripped to a large extent, while corn near the buildings was damaged but little.

Grasshoppers came in on the station in large numbers after the storm and have been doing some damage. At various times during the week the air throughout this section has been full of flying hoppers to a considerable height. Poison bait was scattered over the entire station during the week.

All oats on the station except the later varieties and the field seeded late in the spring have been harvested, also all of the barley except three late varieties. Winter wheat and some of the early spring varieties are beginning to turn. More of the field peas were out today.

Mr. T. K. Killand, of the Mandan station, visited the station Thursday and made some recommendations concerning shrubbery and tree plantings on the grounds about the buildings.

Maximum temperature 89, minimum 51; precipitation 1.09 inches.

TUCUMCARI:

Precipitation totaling .44 inch Saturday evening, July 22, helped row crops for a few days, but at the present time all crops are suffering from lack of moisture. Some broadcast cane is nearly beyond hope of recovery. Cowpeas and kafir seem to be suffering the least, while dwarf milo and broadcast cane are firing most extensively. Dwarf milo in rotations and increase fields is nearly in full head, where growth has not been entirely stopped. The first kafir heads on most rotation plats are appearing. A few corn plats are in tassel, but the drought and the stalk borer are rapidly ruining this crop.

Work the past week has consisted largely of miscellaneous work; threshing three wheat plats; plowing MCB wheat and rye plats, and Sudan for green manure on Rotation 299; repairing the corn binder in preparation for Sudan cutting; cultivating late date plats, thinning same; rogueing cuttings from many plats; overhauling the light plant engine and dynamo; watering trees and shrubs; painting the windmill tower and storage tank tower. This date Sudan cutting is under way. This crop is

Tucumcari, contd.

so short that difficulty is experienced in binding; the height ranges from about two to four feet and the yield will be light.

Prof. J. L. Lantow of the State College was here the first of the week and disposed of the College range cows to a rancher in this vicinity. The cattle were in excellent condition and are well marked Herefords. Ten six-year old cows, seven two-year old heifers, and eight calves comprised the lot. The sale price was $30 per head for mature cows and two-year olds, calves thrown in. Drought with resultant poor pastures, frequent losses with cattle, and difficulty in borrowing money, combine to make the ranchers very wary of mature cattle in this section. Steers are comparatively much higher than cows for it seems to be the general impression among ranchers that one may occasionally make money with steers but is certain to find cows an expensive proposition. No one seems able to decide, however, who will raise the steers when everyone has reduced his cow herd.

Maximum temperature 99, minimum 66; precipitation .44 inch; evaporation 2.852 inches; average wind velocity 4.9 miles.

WOODWARD:

For the past nine days the maximum temperature has been from 101 to 107, the average being 104, with .01 inch precipitation. Since May 23 we have had 1.41 inches of precipitation on eighteen different dates, in amounts varying from a trace to .36 inch.

Practically all crops with the exception of cowpeas seem to be suffering from lack of moisture. Milo which is about 18 inches tall is curling badly and firing at the base. Sunrise kafir is firing at the base with a height of three and four feet, and heading; corn is tasseling and badly wilted. The grapes are also suffering from lack of moisture. Of two varieties which have been picked, the berries were badly wilted. Several hundred pounds of peaches have been picked during the week.

The water supply has been so low that we have had water only twice on the station during the past nine days. We have, therefore, been hauling water for the stock and drinking purposes; also some for watering shrubs and some of the trees in the orchard which were set out this year.

Mr. E. F. Chilcott left on Sunday, July 23, by automobile, for Hays, Kansas and was expected to visit other stations before his return.

Maximum temperature 105, minimum 67; precipitation .01 inch; evaporation 2.731 inches; maximum wind velocity 3.5 miles.

ARDMORE:

The week has been unusually warm with an abundance of moisture in the soil. This has resulted in exceptional plant growth. Corn and cane crops which were thought to have been damaged by hail so badly on July 1 that there would be no hope of the production of a crop, now promise to make a fair yield of forage. Cane is doing exceptionally well. Corn will not produce much grain, but there will be sufficient foliage to make considerable silage. Millet hay will make a good crop. There will be a good second crop of alfalfa hay, which is just about ready to cut.

The total precipitation for the month of July has been 4.07 inches. The ten year normal for this station for the month of July is 2.11 inches.

Maximum temperature 86, minimum 52; precipitation 1.13 inches.