

YUMA COUNTY ANNUAL NARRATIVE REPORT

December 1, 1954 to December 1, 1955

Ray Weick, Acting County Agricultural Agent

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SUMMARY

The Yuma County Agricultural Extension program continued to place considerable emphasis on its activities in the Wellton Mohawk area. With the continued rapid development of this irrigation district, the new farmers of this area require a particular extension effort unlike other communities of Yuma County at this time. Tests established in the fall of 1954 were harvested and summarized and results were disseminated to Wellton-Mohawk farmers. In response to the requests of the Wellton-Mohawk Irrigation District, summer crop tests were established in two locations.

Field corn was emphasized in cooperative farmer test work in 1955. Test work was established in view of the successful field corn production observed by local extension agents in the Palo Verde Valley some 75 miles north of Yuma in 1954. Results of the tests conducted in Yuma Valley were presented at a field day where considerable interest was shown by those in attendance.

There was a further reduction in Yuma County's cotton acreage, which seemed to indicate the need of little or no cotton test work in 1955. Extension Agents continued to present material that seemed to be important in the production of cotton in Yuma County.

Again in 1955, the county agent's office met with representatives of canning companies to outline possibilities of bringing a canning industry to Yuma County. The possibilities seemed to be stronger than they had been in the past. There was also an interest in the freezing industry that had not been previously shown.

The County Agent's Office continued to cooperate with the University of Arizona Experiment Station at Yuma in conducting a Livestock Field Day and in including the cattle feeding experiment in a tour of cattle feeding operations in Yuma County.

The extension service continued its television program for the second year. For the third full year, Extension Agents conducted agricultural and 4-H 5-minute radio programs Monday through Friday at 7:20 AM over Station KYUM.

Considerable emphasis was given to the control of the Yellow Clover Aphid now known as the Spotted Alfalfa Aphid since its effect on the farm economy in Yuma County was quite serious. A number of field meetings were held in an effort to fully acquaint farmers in Yuma County with the insect, its habits and methods of control. A circular letter was mailed to farmers of Yuma County on the subject of the spotted alfalfa aphid.

Extension agents continued to emphasize the importance of the cattle feeding industry in Yuma County. Diversification through cattle feeding was the prime objective. Extension Agents assisted in conducting a feedlot tour with the Western Livestock Journal, as well as a feedlot tour especially designed for the farmers of Yuma County in cooperation with the Yuma Livestock Association.

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The County Agent's Office is represented as an ex-officio member of the Yuma County Fair Board and assisted in making the third annual Yuma County Fair another complete success. A new domestic exhibit building, 240 x 70 feet was constructed on the grounds, which contributed considerably to the success of the third annual fair.

The County Agent's Office assisted the directors of the Yuma County Pureseed Association in making plans for the 1955-56 over-winter seed increase in Yuma County. Early indications were that the seed increase for the coming winter would exceed that of 1954-55. However, this did not prove to be true.

Ervin Bramhall, Assistant County Agent, resigned effective September 17th. Mr. Bramhall assumed a position with the Extension Service of the University of California. Paul Lineberry joined the Extension Staff as an Assistant County Agent as of May 1.

Assistant County Agent, Elmer Allen, left Yuma County as an Assistant Agent in December of 1954, after a short period of a few weeks, to join the County Extension Staff of Cochise County. Carl Rang was assigned to Yuma County as an Assistant Agent in December but proved to be unsuited to the Extension work and resigned effective April 1st.

Ernest Foster was assigned to Yuma County as of September. Albert R. Face resigned as County Agricultural Agent on the 30th of September. On the 16th of September, Ray Weick, Assistant County Agent, was named Acting County Agent to carry on the Extension program in Yuma County.

The County Agent's Office worked closely with the Yuma County Board of Supervisors for a considerable time in 1954 to obtain new office space for the Yuma County Extension Staff. The Supervisors rented office space in the Voyle L. Smith Building at 1047 4th Avenue. These offices were occupied by the Extension Staff on February 1st, 1955. These new offices provide the County Extension staff with approximately two and a half times as much space than had previously been provided in the Yuma County Court House. These new offices contribute considerably to the efficiency of the County Extension Program. There are four separate offices for the Agricultural and 4-H Agents, two for the Home Demonstration Agents, a reception office for secretaries and stenographers, a mimeograph supply room and a conference room. This total area represents approximately 25 x 60 feet.

THE SITUATION

Yuma County continued to expand its total agricultural acreage by a development of new land in the Wellton-Mohawk area in 1955. It was also recently announced that Yuma Mesa land surrounding the present Yuma Mesa project will be made available for irrigation through state lease. This involves approximately 35,000 acres. This acreage will be added to the 169,000 acres of irrigated land reported in Yuma County in the 1954 Annual Extension report for Yuma County.

A most complete run-down on the agricultural situation in Yuma County was provided in the 1954 Annual Narrative Report. Nothing new can be added at this time.

ORGANIZATION

A. Extension

There were a number of changes in the Extension personnel in Yuma County in 1955. Home Demonstration Agent, Mariel Hopkins, and Assistant Home Demonstration, Bettie Mead, continued on the staff in 1955 to date. Assistant County Agent, Elmer Allen, who served a few weeks in 1954, left for Cochise County in December. Assistant County Agent, Carl Rang, joined the Extension staff in December and resigned effective April 1st. Paul Lineberry, Assistant County Agent, joined the Extension Staff May 1st. Ervin Bramhall, Assistant County Agent, who joined the Extension Staff in August of 1953, resigned effective September 17, 1955. Albert R. Face, County Agricultural Agent, resigned effective September 30. Assistant County Agent, Ray Weick, was named Acting County Agent as of September 16th. Louise Tate resigned as a stenographer in May of 1955. Gladys Jones resigned as stenographer in March of 1955. Margaret Jaeger was appointed as secretary in March of 1955 and resigned effective October 15th, 1955. Sandra Allen worked part-time during the closing months of her senior year of high school from March through May and then full-time through June and July. She resigned effective August 1. Betty Porcupile worked as secretary in the County Agent's Office for a few weeks in July and August. Lois Heaps was employed as stenographer in August of 1955. Presently Mary Beihl, who joined the staff in October of 1955 and Lois Heaps constitute the secretarial staff. The Yuma County Extension Organization has been able to function more efficiently since it moved to its new office space over the Voyle L. Smith Building at 1047 4th Avenue. This office space was occupied on February 1, 1955.

B. Organized Groups

There are four farm Bureau locals with approximately 550 members. These locals go under the names of Gadsden, Crane, Yuma Mesa and Mohawk. Each of these locals hold monthly meetings and Extension Agents frequently provide programs. These meetings offer an opportunity for extension Agents to present agricultural information particularly adapted to the area in which the farm bureau local is located.

The Yuma County Pureseed Association is a group through which local extension agents have an opportunity to present educational programs on crop improvement work. This organization is made up of Yuma County members of the Arizona Crop Improvement Association. This organization meets three or four times a year. Its board of Directors meets relatively frequently upon the call of the president to consider matters involving over-winter seed increases and other crop improvements matters. Its annual meeting is held just prior to the Arizona Crop Improvement meeting. At this time, matters of business concerned with crop improvement work are considered for later presentation to the Arizona Crop Improvement Association.

The Yuma Livestock Association is made up of stockmen throughout the Yuma area. The County Agricultural Office cooperates with this group in sponsoring meetings and livestock tours. The Dairy Herd Improvement Association In Yuma County was organized five years ago by the Agricultural Extension Service. During the past year, Milton E. Keim has been doing the official testing.

The Yuma Mesa Fruit Growers Association is an organization of citrus growers. It is an cooperative organization for the purpose of packing and shipping citrus. The Extension Service has had some contact with this group, but could work more closely if there were someone devoting time to citrus work.

The Yuma Shippers Association is an organization of vegetable growers in the Yuma area. This is an organization that the extension Service worked with more closely in this past year than in years previous. This was particularly in connection with cantaloupe crown blight.

The Extension Service works with and cooperates with the Yuma County Agricultural Research Council, which is an organization of farmers who meet to consider agricultural research and extension education needs in Yuma County. The organization was largely responsible for the planning of the Yuma County Extension Program through its commodities committees in 1955. This same organization worked closely to assist in making the new office for the Extension Service available.

PROGRAM PLANNING

Yuma County's Extension Program was planned among local extension agents with individual conferences with state extension specialists and committees of the Yuma County Agricultural Research Council. In addition, certain phases of the Yuma County Extension Program are planned with executive committees of agricultural commodity organizations of the County.

INFORMATION PROGRAM

A. Newspapers

Yuma County Extension Agents worked closely with the Yuma County Farmer in disseminating agricultural information each week. Almost every week, the agricultural editor for the Yuma Daily Sun called the County Agent's Office for items of agricultural interest. On a number of occasions, material was turned over to the Yuma Daily Sun that was of considerable advantage to the Agricultural Extension Program. The cooperation from local newspapers is excellent.

B. Radio

For the third year, the extension service presented a five minute radio program over KYUM Monday through Friday at 7:20 AM. The radio station furnishes the extension service a portable tape recorder so that programs

can be prepared with specialists and farmers at distant points. This has permitted a large variety of programs. The Wednesday morning program has been on 4-H Club work and the other four programs have been on various phases of agriculture. This program has been an important part of Yuma County's Extension Program.

C. Television

The Yuma County Extension Service has completed nearly two years of television programs. This program is known as the KIVA Farmer Program and for the past several months has been presented weekly over KIVA at 6:30 PM. This has been a 15-minute program for the past year. Television programs presented on agricultural subjects during the past few months have been as follows:

December: Dr. W. D. Pew was guest and the subject was cantaloupe fertilization. December 9th, Al Lane was guest and the subject was Preparation of a Cattle Feeding Ration from Home Grown Feed. December 23rd, Leland Embry was guest and the subject was Social Security for the Individual Farmer.

January: On January 6th, Winn Lawson, Riverside Farm Advisor, was guest and the subject was Field Corn Results in Palo Verde Valley. January 13th Harvey Tate was guest and the subject was the Care of House Plants. January 20th, Dr. William Pfister, Animal Pathologist for the University of Arizona was guest and the title of the television program was "Controlling External parasites in Feed Cattle".

February: On Feb. 3rd, Steve Bixby and Don Maltby were guests and the TV program subject was "The Arizona Cattle Growers Convention". February 24th, Dr. J. N. Roney was the guest and the subject was "Insect Control".

March: March 3rd the County Agent conducted the TV program with Dr. J. N. Roney as guest and Dr. Don Tuttle as guest on "Yellow Clover Aphid in Alfalfa". March 10th - Ralph Wan Sant was guest and the subject was "Egg Grade and Quality". On March 24, Charlie Ellwood, Extension Agronomist was guest and the subject was "Cotton Weed Control". March 31st, Dr. R. B. Streets and Harvey Tate were guests and the subject was "Preparation of Flowers for Exhibit".

April: One TV program was presented in connection with the Yuma County Fair, which included both adult and junior divisions in Livestock. The Second program was presented in insect Control with Dr. Don Tuttle. A third program was presented on diseases, particularly cotton diseases with Dr. Ivan Shields.

May: On May 12th, Dr. C. O. Stanberry was guest and a program was presented on alfalfa seed production. On May 26th, N. R. Ittner and Harold Thurber were guests and a program was presented on the subject of keeping cattle cool for summer feeding.

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June: On June 2nd, George Worker and Bob Kortson were guests and a program was presented on the subject of Grain Sorghum. June 16th, George Abel was guest and a program was presented on the subject of Soybeans.

July: On July 7th, Ted Welchert was guest and a television program was presented on the subject of threshing alfalfa seed. On July 14th, Dr. J. N. Roney and Andy Deal were guests and a program was presented on the control of cotton insects. Assistant county Agent, Irvin Bramhall, was in charge of this TV program. On July 28th, The County Agent presented the program with the assistance of Assistant County Agents Irvin Bramhall and Paul Lineberry. This program was presented on the subject of Field Corn Tests in Yuma County.

August: On August 4th, Lamar Brown was guest and a program was presented on Bottom Defoliation in Cotton. On August 25th Dr. Carl Roubicek and Dr. Robert Richards of the Animal Husbandry Department were guests and a program was presented on Beef Feeding Experimental Results.

September: On September 15th, the County Agent presented a television program on the importance of planting alfalfa on October 1. Frank Pritchard, Superintendent of the University Experimental Farm in Yuma, was guest.

October: On October 6th, Assistant County Agent, Paul Lineberry, presented a television program with Dr. J. N. Roney from the University of Arizona Agricultural Extension Service. The Subject was Cottony Cushiony Scale and its control. On October 20th, the Assistant County agent also presented a program with Frank Pritchard of the University Experimental Farm as the guest. The subject was Future Plans for the Valley Experimental Farm.

November: On November 3rd, The Assistant County Agent presented a TV program with Al Lane, Extension Livestock Specialist. The subject was feeding principles to follow when making a ration.

Other Television programs presented by the Extension Service on Thursday evenings were handled by Acting County Agent, Ray Weick, on 4-H Club Work and Home Demonstration Work, by Mariel Hopkins, Home Demonstration Agent. Following the television program of November 3rd, the Extension Office was notified that the time, which had been contributed to the Extension Service for agricultural TV programs, had been sold. Since that date, no TV programs have been presented by this office.

D. Circular letters

A number of circular letters were mailed to farmers during the past year. On the following page you will find the circular letter mailed on aphid control. A number of other circular letters can be found in this report under the agronomy section.

E. County Circulars

A county citrus circular was completed in 1955. A report was prepared on field corn test results that will be of substantial assistance to those interested in field corn production in the future.

Mimeographs were prepared for two cattle tours which gave the rations being fed by the various cattle feeders. This information has been of considerable interest to those who are beginning cattle operations.

F. Field Aids

Extension Agents assisted the directors of the Yuma County Pureseed Association in taking a colored movie of a number of the phases of the over-winter seed increases in Yuma County. This film is being prepared for mailing to other states interested in over-winter seed increases.

Additional colored slides were made of agricultural activities in Yuma County that should be of value in presenting extension information.

Posters, the blackboard and a number of other props were used in presenting television programs.

G. Circular distribution

Numerous County, state and federal circulars and bulletins were distributed from the County agent's office from the bulletin board, through the mail and at farmer meetings.

HORTICULTURE

A. Vegetable Production

1. Commercial

The position of commercial production in Yuma County was reviewed thoroughly in last year's annual report.

A. Lettuce

The lettuce acreage for the 1954-55 season was slightly reduced over the previous year and showed a total acreage of 11,349 acres.

Extension activities in connection with lettuce were confined to disease and insect surveys. The usual worm problem occurred in the fall. Recommendations were made for fencing the fields to avoid woolly worms and control recommendations were made for the cabbage looper and army worms that invaded particularly the new plantings of lettuce.

Dr. Ivan Shields, Extension Plant Pathologist, made a number of field visits with the County Agent to determine the extensiveness of lettuce diseases. It was found that the cold weather had caused considerable brown rot in lettuce and that some fields had been abandoned before the lettuce had been cut. This survey was made in early March.

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B. Carrots

Fumigation for nematode control was discussed with some carrot growers. Several of the growers in Yuma County have fumigated for carrot production.

C. Cantaloupe

The cantaloupe acreage in Yuma County in 1955 stood at approximately 16,000 acres. There were 500 acres planted in the parker area. Most of the remaining acreage was planted in the Yuma Valley.

1. Cantaloupe Crown Blight

Cantaloupe Crown Blight continued to be one of the cantaloupe growers principle problems. In view of this, a survey of cantaloupe fields and visitations with cantaloupe growers were made by the County Agent with major assistance from the Extension Plant Pathologist. Dr. Don Tuttle, local research Entomologist, Dr. Bob Foster, Vegetable Plant Breeder and Dr. J. N. Roney, Extension Entomologist, also assisted in this survey.

As a result of this survey, a summary was made by the county agent with the assistance of Extension Plant Pathologist. This summary was forwarded to the Extension Plant Pathologist for use in securing aid for research. The following is a summary of this cantaloupe survey.

Conditions observed and discussed with Yuma Cantaloupe growers in connection with the cantaloupe crown blight conditions in 1955.

a. Leaf Minor

Leaf Minor were more severe in cantaloupe fields this year than they have been for any year observed by those making the survey. We found them to be most severe in fields that adjoined alfalfa. One grower attributed this severe damage from leaf minor to the fact that nearly all of his cantaloupe fields joined alfalfa. This grower felt that leaf minor were his basic problem and the surveyors concur somewhat in this belief. It should be added that it is felt the leaf minor condition was independent of the condition we call crown blight.

In our surveys, we found a general infestation of leaf minor throughout the cantaloupe growing area. We found that some growers had followed a more intense control program than others. In such instances, we generally found that cantaloupe vines were holding up better than where control measures were completely neglected. Where best control was observed, 2% parathion was being used at 5 to 7 day intervals, during the critical leaf minor period. Four to six applications of insecticide were made by this grower.

b. Mosaic

According to the observations of Dr. Shields during the past three years, indications of mosaic were greater this year than for the past 3 years. The presence of mosaic may contribute to the decline of vines in some cases. It is possible that those fields that had an early infestation of aphids had a higher indication of mosaic. Several fields were observed that had a very low incidence of mosaic. The incidence of mosaic is independent of the complex severity.

c. Soil Type

Crown Blight was found to be most severe on the sandier soils. It was called to our attention several times by growers during the course of this survey that sandy spots in their fields went down with crown blight first. It is also our observation that the saltier spots in the field also go down early, with crown blight.

Soil samples were taken in three different cantaloupe fields. A soil sample was taken from the bottom of the furrow, and from the top of the bed in each case. When an analysis was made for total soluble salts, it was found that the furrow was lower in total soluble salts than was the top of the bed. In field number one, the top of the bed ran 1300 parts per million salt, in the furrow 1080. In field number two, the top of the bed ran 1320 parts per million salt and the furrow 1000 parts per million. In the third field, the top of the bed ran 1695 parts per million salt, and the bottom of the furrow 1210. Each of these samples were composite of the top 12 inches of the soil. Although no particular conclusions were drawn from this, it is interesting to observe that there is quite an increase in salt concentration from the bottom of the furrow to the top of the bed.

As far as the sampling of the soil in the three locations was concerned, no significant differences could be observed in incidences of crown blight when correlated with phosphate, nitrate and potassium analysis.

d. Moisture and Irrigations

In making our survey, we found that there were a number of different practices being followed as far as irrigation is concerned by the various cantaloupe growers throughout the Yuma area. By this, we refer particularly to frequency of irrigation and also to the length of the time that water is held in the furrows during an irrigation. It was the observation of those who made the survey that the best fields - that is, those showing the least crown blight, and picking the most crates of cantaloupe - were irrigated on a very frequent schedule, usually about once a week, starting at the time melons begin to set. Growers reported putting water in their furrows from 4 to as high as 24 hours, generally water was held from 12 to 18. We found a trend of some growers to use the practice of holding the water in the

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furrows a short time, while others followed the practice of holding the water in the furrows for a longer period of time. There seemed to be a trend toward holding the water in the furrows the longest where yields were holding up the best. In several specific instances, we saw relatively less crown blight where water was held in the furrows from 12 to 18 hours. A number of the yields, with heavy incidence of crown blight, were found to be dry in the center of the bed down to a depth of from 10 to 12 inches. In digging to this depth, a number of the cantaloupe roots were cut, which indicates that some of these roots were in dry soil. In a number of instances, it was observed that the low spots in the field and the ends of runs where more water had stood the greenest vines. In a contrasting incident, in the same field, higher points that seemed to be somewhat dryer had a greater incidence of crown blight.

e. Nitrogen Fertilization

It was found, in visiting with growers, that there were a number of varying practices with regard to nitrogen fertilization. It was surprising that many of the growers did not have a terribly high rate of nitrogen fertility. In a number of instances, good fields had less than 100 pounds of actual nitrogen. In most of the best fields, it was observed that small rates of nitrogen were being applied either in the water or late sidedressing up to nearly picking time. In an instance or two, nitrogen was even applied in small applications after picking had begun. It is hard to correlate crown blight with nitrogen fertilization since there is such a variation in grower practices. This merely points to the need for additional test work where nitrogen is controlled both in amount and time of application.

f. Crop Rotation

It has been the usual practice of cantaloupe growers to double crop with lettuce and cantaloupe. In a number of instances, extension research workers have felt that this double cropping program may be contributing to crown blight. It is hard to pin this matter down, however, since in a number of instances we get some excellent yields where there has been a continuous cropping program of this nature. On the other hand, there are a number of cases where fields yields higher when taken from alfalfa or another rotation crop. Some vegetable growers point to instances where they have put land into alfalfa and have taken it out and put it back into cantaloupes, that their highest yields were the first year with declining yields thereafter. There seems to be some advantage gained from a rotation with alfalfa and field crops.

g. Tillage practices

It was evident from the survey that most of the larger vegetable growers followed similar tillage practices; that is, deep chiseling with sweeps and discing for seed bed preparation. Frequently, all of these growers bring a lettuce field into cantaloupe beds within a short time after the last irrigation in lettuce. It is not possible to correlate any crown blight incidences with this short period between crops and tillage practices followed.

One grower, however, did point out that where he had used road ways across his beds the year before, he found a higher incidence of crown blight. It has been the opinion of those making the survey that when such compaction occurred, there was less water penetration.

h. On October 12 and 13 a symposium on cantaloupe crown blight symptoms was held at the Arizona Room, Chamber of Commerce Building, here in Yuma.

The main purpose of the symposium was:

1. to separate crown blight symptoms from those other troubles with which they might be confused.
2. to appreciate fully the various syndromes of the disease.
3. to describe crown blight minutely and accurately to provide unmistakable identification of the disease.
4. to arrive at concurrence among investigators regarding the interpretation and relative importance of phases in the symptom pictures.
5. to provide clues regarding the possible cause of the disease.

Approximately 50 research agency personnel attended this meeting. Dr. Robert Foster, of the Agricultural Experiment Station, University of Arizona at Mesa, served as chairman of the meeting. Minutes of the meeting may be obtained from him.

2. Cantaloupe Fertilizer

Dr. W. D. Pew, Horticulturist for the University of Arizona, cooperated with the county agent in conducting a television program on cantaloupe production as well as to assist with a meeting on the same subject. This meeting was held on December 2nd. There were a number of growers in attendance and there was considerable interest and discussion.

3. Cantaloupe Leaf Minor Control

The extension entomologist visited a number of cantaloupe fields with the County Agent, and observed severe leaf minor damage in a number of instances. It is believed that leaf minors were as much a cause of reduced cantaloupe yields in Yuma County in 1955 as crown blight. In many instances, perhaps it worked hand in hand with crown blight to reduce yields. Cantaloupe growers are apt to use extensive leaf minor control measures in 1956 at the expense of predators and pollinators.

D. Watermelons

Only a few watermelon fields were observed by the County Agent in 1955. One grower had an excellent field that he predicted would produce a total of twelve tons per acre. Observation indicated that it would meet this prediction.

E. Sweet Potatoes

Sweet potatoes were planted in hot beds on the Yuma Mesa in January. Most of the hot beds were constructed so that heat could be furnished by hot water

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pipes or electric cable. By the end of January, it looked as though they should have satisfactory slips for late February planting. Some plantings were made in late February and early March. A total of 230 acres of sweet potatoes were planted on the Yuma Mesa. Most growers had suffered a severe loss of stand and some fields were plowed under. The County Agent has not secured information on resultant yields of sweet potatoes in 1955.

There is much need for research work on fertilization of sweet potatoes, and additional work needs to be done on cultural and handling at the time immediately following planting.

F. Peas

Agricultural Research Service under the direction of Joe Hamilton conducted considerable date of planting and variety test work on canning peas on the Yuma Mesa. The extension service assisted in bringing this information to farmers by conducting a field day. It is believed that this experimental work will be continued another year. This work should be followed closely by the Extension Service and should afford some valuable information to those who might become interested in growing canning peas. Other experimental work was conducted on the Culture of Canning peas in addition to varieties and date of planting.

G. Tomatoes

There is more and more interest in growing tomatoes in Yuma County. A number of inquiries came to the County Agent's Office for information on the growing and handling of tomatoes. It is believed that the Extension Service might assist in preparing a County Circular on tomato production.

In the last few days of November, a large food concern, Hunt's Foods Inc., came to Yuma and indicated that they were interested in contracting for 800 acres of tomatoes in the Yuma Area. The representative for the company indicated that they wanted to deal primarily with the large growers, but at last report, he was having trouble getting their interest. They stated that the company would prefer plots of at least 40 acres. However, it was brought up that some of the smaller farmers would be definitely interested while the larger producers would not because of the conflict with the cantaloupe plantings. It is the plan of the concern to truck the tomatoes from Yuma to Fullerton, California to their cannery there. At the writing of this report, it is not known how many acres have been signed up by the company.

H. Irish Potatoes

Approximately 220 acres of Irish Potatoes were planted in the Wellton-Mohawk area. Extension agents visited these plantings on a number of occasions and visited with growers in regard to cultural practices. A packing shed for Irish potatoes was constructed in the Wellton-Mohawk area by Mr. Meilson. Some of the first potatoes that were dug had a satisfactory market and a satisfactory yield. A large acreage of this Irish potato planting was not harvested

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due to declining prices. The soil in the Wellton-Mohawk area, in many locations, seems to be excellent. It is too early to say what the future of Irish potatoes production might be in the Wellton Mohawk area.

Orchard Management

1. Citrus

New citrus plantings on the Yuma Mesa showed more signs of iron chlorosis this year than in past years, although it has been prevalent in past years. Growers are very anxious for some form of solution to this chlorosis problem. The problem was discussed with some citrus growers while Dr. Ivan Shields, Extension Plant Pathologist, was in In Yuma County. The County Agent worked very closely with Mr. C. W. VanHorn and the citrus committee of the Agricultural Research Council in an effort to determine the cultural research work that might be best established to solve this problem.

It was the opinion of Mr. VanHorn that over-irrigation during winter months was largely a contributor to the chlorosis problem.

The citrus committee of the Agricultural Research Council requested that the Dean of Agricultural Affairs and the head of the Horticulture Department meet with them to determine what might be done in the way of research to alleviate the citrus chlorosis problem existing on the Yuma Mesa. The County Agent met with the citrus research committee on quite a number of occasions to review this problem. The only request that was made of the Extension Service was that a survey be made of new growth and the present problems. Limited personnel in the County Agent's Office was the cause of preventing this survey to date. It is believed that such a survey will be both profitable to growers and to the extension citrus program.

A tour of the citrus trees on the Yuma Mesa was made by the citrus committee of the Yuma County Agricultural Research Council and members of the experiment station and Extension Service in June. A number of older trees on the Yuma Mesa were also observed with a chlorosis problem. Some of this problem proved to be a zinc deficiency. It was brought out in the discussion that an over-phosphating of citrus trees on the Yuma Mesa has been very detrimental to a number of the trees. It behooved the Extension Service to bring the matter of phosphating citrus to the attention of growers.

CITRUS CIRCULAR FOR YUMA COUNTY

A citrus circular for Yuma County was prepared by the County Agent, the Extension Horticulturist, and associate Horticulturist, C. W. VanHorn. At the time this report is being written, the cover is to be prepared and the bulletin assembled for distribution. This circular should be popular in answering a number of inquiries that come into the County Agent's Office

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concerning both commercial and home plantings of citrus.

The Extension Office also cooperated with Mr. VanHorn in the mailing out of the results of a 35-year summary of minimum temperatures on the Yuma Mesa. The summary also included helpful hints on preparing young citrus trees for the coming winter season. A copy of the letter will be found in this report.

C. Home Beautification

Extension Horticulturists assisted local Extension Agents in taking care of a number of home calls as well as presenting radio broadcasts, television programs, and the writing of column and newspaper articles on home beautification. An impressive television program was presented in April by Dr. R. B. Streets and Harvey Tate on the preparation of flowers for exhibit

The County Circular "Shrubs for Yuma County" has been revised and is ready for reproduction.

There have been a number of requests for the Extension Horticulturists, the Extension Entomologists and the Extension Plant Pathologists to present programs at local garden clubs in 1956. The County Agent has scheduled the specialists for their respective programs.

D. Small Fruits

Grapes

There is something over 300 acres of grapes on the Yuma Mesa. The press is so great on other activities in the Extension Program and the limited personnel have prevented working closely with grape growers. It is desirable that the Extension Service be able to spend more time with these people and that the Extension Horticulturists and Plant Pathologists both feel our grape production could be much improved should growers improve their cultural practices.

E. Cannery and Freezer Plant Possibilities

Representatives of canning and freezer interests visited Yuma County in early May and contacted the County Agent for information on the growing of sweet corn, tomatoes and peas for canning production. They were also interested in freezing sweet potatoes and peas. Although they were interested in other vegetables, these three were the principle ones around which they said their cannery and freezer plant must be constructed. Local extension agents called upon the Agricultural Research Service, U. S. Department of Agriculture and the local experiment station to furnish information regarding the production of these crops. The outside interests felt that they would have to further study the production of these crops, both from the standpoint of yield and quality before they were able to establish any installation in the area. They indicated they would probably bring a field man into the area this fall to follow trial plantings of a number of varieties of these crops. It is their desire to work cooperatively with the Agricultural Extension Service, the U. S. Department of Agriculture and the University of Arizona Experimental Station on this work.

COOPERATIVE EXTENSION WORK
in
AGRICULTURE AND HOME ECONOMICS
State of Arizona

University of Arizona
College of Agriculture
U. S. Department of Agriculture
and Yuma County Cooperating

Yuma

Agricultural Extension Service
Home Demonstration Work
County Agent Work

Dear Yuma Mesa Farmer:

Subject: Yuma Mesa Temperature - 35 year summary
Encl: "COLD FACTS"

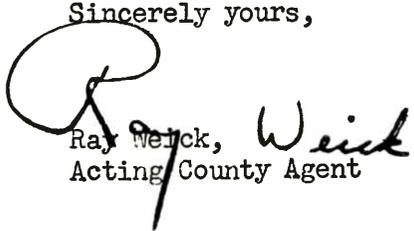
With all of the interest in citrus, especially on the Yuma Mesa, Mr. C. W. VanHorn of the University of Arizona Experimental Station has prepared the enclosure for your interest.

I might point out that these are minimum temperatures only. They were taken at the University of Arizona Experimental Station on the Yuma Mesa.

We should keep in mind that these temperatures were taken only at one spot and that they do not indicate how long the temperature stayed at the minimum indicated. However, they are the most complete and accurate figures available, to the best of our knowledge.

I trust you will find the enclosure interesting. Additional copies are available at the County Extension Office.

Sincerely yours,


Ray Weick,
Acting County Agent

RW/mjb

SUMMARY

January is the most likely to have the lowest temperature for the season for our Yuma Mesa Citrus.

Twenty-two of these 35 years the low point occurred in January. 8 out of the 35 years the low point occurred in Dec. 9 out of the 35 years it occurred in Feb. Two years had just as low a point in Dec. as in Jan. and another two years February had a similar low point as January.

If we think of 28° as being the real critical low point, we find we have had 17 years out of the 35 with 28° or below.

What can be done by the citrus growers to prepare for such low temperatures?

1. Have the soil surface free of cover crops or other vegetation.
2. Have soil surface as smooth as possible and wet down. This gives the best transfer of heat from soil to trees during cold spells.
3. Plan to irrigate just prior to cold spells, if possible.
4. Young trees may be wrapped with arrow weeds and paper or various materials.
5. Mounding dirt around base of tree is another precaution.
6. Wind machines are being used by some growers.
7. Heaters have been used by a few growers.

SOIL FACTS

A 35 Year Summary

of

Minimum Temperatures

for

Yuma Mesa Citrus Area

by

University of Arizona Experiment Station

35 YEAR SUMMARY OF MINIMUM TEMPERATURES

<u>Winter of</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Low Point for the Season</u>	<u>Month Lowest Occurred</u>
20-21	35	37	27	36	45	27	Jan.
21-22	34	36	27	27	34	27	Jan. Feb.
22-23	35	34	30	29	34	29	Feb.
23-24	36	30	28	37	36	28	Jan.
24-25	33	35	28	37	33	28	Jan.
25-26	39	29	29	39	37	29	Dec. Jan.
26-27	43	30	33	36	39	30	Dec.
27-28	35	31	31	32	40	31	Dec. Jan.
28-29	35	36	24	29	37	24	Jan.
29-30	33	28	27	34	39	27	Jan.
30-31	29	31	28	37	34	28	Jan.
31-32	42	30	25	30	39	25	Jan.
32-33	38	30	32	29	38	29	Feb.
33-34	36	32	34	40	47	32	Dec.
34-35	37	37	31	36	36	31	Jan.
35-36	39	30	32	34	36	30	Dec.
36-37	42	33	19	30	38	19	Jan.
37-38	33	37	32	35	38	33	Jan.
38-39	33	35	35	28	35	38	Feb.
39-40	45	32	34	34	38	32	Dec.
40-41	37	34	37	42	43	37	Dec.
41-42	34	30	29	33	39	29	Jan.
42-43	39	35	31	35	42	31	Jan.
43-44	36	37	31	31	41	31	Jan. Feb.
44-45	35	32	33	31	39	31	Feb.
45-46	38	31	31	28	35	28	Feb.
46-47	34	31	30	35	37	30	Jan.
47-48	31	29	23	21	32	21	Feb.
48-49	33	30	24	37	36	24	Jan.
49-50	43	25	23	30	37	23	Jan.
50-51	33	34	25	28	35	25	Jan.
51-52	37	31	26	31	31	26	Jan.
52-53	29	33	33	27	31	29	Feb.
53-54	33	29	28	38	37	28	Jan.
54-55	38	25	30	27	32	25	Dec.
Lowest Point:	29	25	19	21	31	19	Jan.
Winter of	30-31	49-50	-	36-37	47-48	51-52	
	52-53	54-55				52-53	

Remember: The above figures are extreme low points.

C. W. VanHorn

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On October 26, a representative of Allied Packers and Cannery Inc., the concern that was interested in putting in a freezing and cannery plant in Yuma, contacted the Extension Office and Frank Pritchard, of the University Experimental Farm. This representative indicated that the concern was definitely interested in conducting a large - scale experiment here, in the Yuma area, to determine the possibility of producing cannery peas in the area on a practical basis. Assistant Agent, Paul Lineberry, and Frank Pritchard discussed cultural practices with him and also the Assistant Agent arranged a meeting between him and Joe Hamilton of the A. R. S., who conducted the pea experiment on the Yuma Mesa for the past year. Mr. Bauer, the representative, stated that they were interested in contracting for approximately 1,000 acres of peas in the area. Mr. Bauer was also interested in getting the reaction of the farmers in the area as to whether they would be interested in the situation and so he was invited to speak at a meeting of the Yuma County Pureseed Association, which was scheduled for that night.

Mr. Bauer spoke to the group and indicated that since this was a new area as far as pea growing was concerned, their company would be interested in paying the farmers a flat rate for their land and also pay their production costs of growing the crop. They in turn would bring in viners to harvest the crop and take the peas to the coast for canning, for freezing. The reaction from the farmers was quite good in this respect, particularly when Mr. Bauer indicated that they would pay \$50.00 an acre for the use of the land plus production costs.

Mr. Bauer left the following day, assuring us that he would be back within 7 to 10 days to begin making further contacts with the idea of having contracts signed by the 15th of November so that pea planting could be made between December 10 to 15. Since that time, the Extension Office has been in contact with Mr. Bauer at least once a week, either by mail or phone. However, it seems that the concern is having a great deal of difficulty in purchasing enough seed to plant the acreage. At the writing of this report we do not know what the situation is but assume that the pea plantings will not be made this year.

LIVESTOCK

During the past year the County Agent and Assistant County Agent, Ervin Bramhall, worked closely with livestock feeders in Yuma County. In the 1954 Annual Report a resume was made of the cattle feeding situation in Yuma County, both currently and in the past years.

To meet the growing interest in livestock feeding in Yuma County, the Extension Service assisted in conducting two livestock tours during the month of February. The first of these tours was conducted on February 5th by the Arizona Cattle Growers Convention and the second in cooperation with the Western Livestock Journal.

A mimeograph was prepared furnishing information on the feedlots visited on each of these tours. These were prepared by local Extension Agents.

The County Agent spoke to the group prior to the tour, with the Western Livestock Journal group, and also on a number of occasions during the tour.

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The County Agent also had charge of interviewing the cattle growers on the tour conducted for the Arizona Cattle Growers Convention.

The tours conducted in February were attended by a number of people from out of the county and, in a number of instances, by people out of the state.

Assistant County Agent Bramhall also attended the tour conducted by the Western Livestock Journal in southern California. The tour started in Indio going through Coachella Valley, on to Brawley, Imperial Valley and ending in Yuma. This tour was planned with the purpose of familiarizing cattle feeders with cattle feeding in California and Arizona.

Assistant Agent Bramhall prepared a mimeograph on the making of cantaloupe silage, which was prepared because there was such a demand for it from cattle feeders who made these tours.

On January 20th, a cattle feedlot tour was conducted principally for the people in Yuma County. Ten cattle feeding operations in the Yuma Valley were included in the tour. A stop was made at the University Experimental Feeding operation where alfalfa hay, green chopped hay and alfalfa silage was being compared. At noon a program was conducted, at which time Al Lane, Extension Livestock Specialist, Dr. Pistor, Animal Pathologist for the University of Arizona, N. R. Ittner, Meloland Experiment Station, Dr. Don Tuttle, local research entomologist, and Dr. Carl Roubicek of the animal husbandry dept., appeared on the program. A noon lunch was served by local feed dealers, Yuma County Farmers Marketing Corporation and the Yuma County Feed and Seed Co. The Extension Agent received numerous compliments from those who were on the tour.

The rapid expansion of the cattle feeding program in Yuma County has resulted in a radio program being planned each Monday, which will present material of interest to cattle feeders. Assistant Agent Bramhall handled most of these programs which were started in May. At the present time Assistant Agent Lineberry is presenting them.

Livestock Exhibit at the County Fair

The County Agent worked closely with the livestock superintendent at the County Fair. There was considerable interest in the exhibiting of commercial pens of fat steers. A number of the feeders were interested in exhibits of lots of 15 fat animals instead of 5, as has been done in the past. This matter will be reviewed thoroughly before the next annual fair.

Extension Agents went over corral plans with a number of feeders in Yuma County as well as reviewing rations and other matters pertaining to cattle feeding.

Field Day

A livestock field day was conducted on the Yuma Mesa experimental farm June 10th. The purpose of this field day was to give an opportunity to report the results of the beef feeding experiment as far as could be summarized at that early date before the cattle went to market. Dr. Carl Roubicek and Dr. Robert Richards were on hand to give a progress report on the feeding experiment. They were assisted

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by Mark McKinney, who is in charge of the feeding trial. They also gave a progress report on farm sheep flock studies.

Meeting to Report Experiment

Arrangements were made with members of the animal husbandry department of the University of Arizona to present a television program on the results of the feeding experiment conducted on the Yuma Mesa experimental farm. This was done during the month of August. There was also a meeting held at the same time with the Yuma Livestock Association where Carl Roubicek and Dr. Robert Richards presented the results of the experiment and entertained a lively discussion.

Fly Control

Extension service continued to recommend the use of malathion as an emulsion for the spraying of cattle, corrals and livestock pens. It was recommended that two gallons of malathion emulsifiable liquid (9or 10 pounds of actual malathion) and a hundred gallons of water be used. It was further recommended that equal amounts of karo sirup be added to the water. This material acts as a bait for the flies and helps increase the kill from the malathion.

This method of control was used for the second year successsfully at the Yuma County Fair.

Dairy

Dairy Herd Improvement Association

The Dairy Herd Improvement Association work is the principle phase of the Dairy Extension Program in Yuma County. Assistant County Agent Bramhall was responsible for the operation of the Yuma Area Dairy Herd Improvement Association. At the present time, Assistant Agent Foster is taking care of this part of the Extension Program.

The Assistant County Agent together with the Extension Dairy Specialist held a meeting of the Dairy Herd Improvement Association during the month of March at which time they reviewed proper management and feed practices for increased production. This was a very profitable meeting and offered an opportunity for dairymen to ask questions regarding their dairy operation. A very unhealthy situation was present among the local dairymen. This was due to the low Grade A price they received for their milk because of a shortage of milk here, When actually the creamery was buying locally produced milk at surplus price. The Dairy Commissioner refused this petition of the local creamery to bring in California milk when shown that local milk producers were receiving a large surplus. The Dairymen had been attempting to get a Federal milk marketing order passed which would set a minimum price which the bottler must pay the milk producers. The Sunland Dairy notified all their milk producers that on the date of passage of this order, their milk would no longer be needed. The

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dairymen felt the reason for this notification was coercion to compel the milk producers to petition to have the Federal Milk Marketing order thrown out of this area. Instead, the milk producers contacted Shamrock Dairy in Tucson, and asked them to enter the market in Yuma, and buy the locally produced milk. Shamrock Dairy expressed interest in the deal, provided the Yuma producers could show sufficient local encouragement. The Farm Bureau came to the aid of the local dairymen. The local Farm Bureau sponsored and paid for a luncheon in which 50 to 60 of the local citizens were appraised of the local situation and assured Shamrock Dairy of local support. Local press gave extensive coverage during these change-overs. Shamrock Dairy promised to send their truck into Yuma and pick up locally produced milk. 75% of the local milk producers agreed to sell to Shamrock; also with the aid of the local milk producers going with Shamrock representatives to all the stores, milk was placed for sale in all of the stores in Yuma, except for 2 large chain stores, who buy very little local produce. Instead of up to 50% of the milk produced in this area being surplus and the dairymen being constantly advised to cut the size of the herds, Shamrock Dairy is paying full grade A price for all milk and encouraging the dairymen to increase the size of their herds.

POULTRY

The extension program, as it pertains to poultry, was confined to answering a few calls on poultry and presenting some information through newspaper columns radio and television programs. The television program was presented by the County Agent with the Extension Poultry Specialist as guest. The subject for this program was "Egg grade and Quality". This program was presented March 10.

AGRONOMY

A number of agronomy field tests were conducted in 1955. These tests were confined to the Wellton-Mohawk area and field corn tests in the Yuma Valley.

Additional emphasis was given to the Mohawk Wellton area due to the number of new farmers coming into the area. Two field days were conducted to show test work. One was conducted in early June at the Wellton Mesa Development Farm, the other in late May at the Frank Batley Ranch and adjoining farms.

Circular letters were mailed to farmers in the Wellton-Mohawk area, an outline of the results of work in that area. Additional copies were furnished to the Wellton-Mohawk water users for distribution to new people coming in to the area. Copies of these letters can be seen on the pages following this report.

In an effort to acquaint farmers with the important cultural practices on winter crops and cotton, local extension agents scheduled a crops conference for the Yuma Valley and adjoining areas in the Southern part of the County and the Parker Valley for Northern Yuma County. The Yuma Valley conference was held in January, and the Parker Valley conference on January 25. A copy of the field crops conference held in the Yuma Valley is attached to this report. The conference in the Parker Valley handled somewhat similar subject matters and was necessarily abbreviated due to the limited number of people that were able to attend. The program was as follows:

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Agricultural Outlook.....	Al Face, County Agent
Crop Rotation	Charlie Ellwood, Extension Agronomist
Irrigation for Higher Production.....	Pat Middleton, Irrigation Specialist
Field Corn Test Results.....	Ervin Bramhall, Assistant County Agent
Alfalfa Seed Production.....	Dr. Dean McAlister, Head of Agronomy Dept.
Rhiz Control.....	Al Face, County Agent
Alfalfa Fertilization.....	Pat Middleton, Irrigation Specialist
Weed Control in Cotton.....	Charlie Ellwood, Extension Agronomist
Varieties and Dates of Planting.....	Frank Pritchard, U. of A. Exp. Farm Supt.
Common Diseases to Yuma County Crops.....	Dr. Ivan Shields, Extension Plant Pathologist
Soybean Production.....	Dr. Dean McAlister, Head of Agronomy Dept.
Soil Management.....	Pat Middleton, Irrigation Specialist
Relative Profits from Fertilization of Barley..	Al Face, County Agent

A noon lunch was served at the Yuma Valley crops conference by Yuma County Machinery dealers and the lunch in the Parker Valley was served by the Parker Valley Indian School. The attendance at the Yuma Valley conference was 75 and at the Parker Valley conference the attendance was 90.

COTTON

The cotton acreage in Yuma declined from 74,756 acres in 1953 to some 26,000 acres in 1955. In view of this, less emphasis was placed on cotton by Extension Agents in 1955. This resulted in omitting field tests on cotton and changing the cotton conference to a crops conference during the month of January. Timely information was furnished to cotton growers throughout the cotton growing season, starting with planting and ending with defoliation.

For considerable information on work done by Yuma County Extension Agents to acquaint Yuma County farmers with important factors in cotton production, reference should be made to the annual report of 1954.

Soil Temperatures for cotton planting

The County Agent secured farmers to take soil temperatures beginning March 18th. A news story was carried in the Daily paper and in weekly papers, beginning with March 24th. It was pointed out that the warmest days of the month have

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been March 8th and 9th. for the past two years. On March 10th, the County Agent pointed out that such warm days were only a false attempt at cotton growing weather, and that farmers should not plant until warm weather occurred toward the end of the month.

Cotton Diseases

Dr. Ivan Shields, Extension Plant Pathologist, visited a number of cotton fields with the County Agent in April. At that time, it was observed that there was considerable damping off where fields with heavy organic matter had not been plowed. It was drawn to the attention of the Yuma County farmers through radio and newspapers that land with heavy organic matter should be plowed. Farmers were advised against irrigating in the fields where damping off was prevalent, particularly in the cold weather to avoid additional losses from this disease.

Cotton Insect Control

Local extension agents worked with the extension entomologist and the local research entomologist on current recommendations for cotton insect control throughout the cotton growing season. Recommendations were made through the newspaper, radio and television.

Cotton Bottom Defoliation

Farmers in the Wellton-Mohawk area have shown a particular interest in cotton bottom defoliation to avoid the rotting of early autumn bolls. The Extension Agents made arrangements with Lamar Brown, Plant Physiologist for the Agricultural Research Service of U. S. D. A. to come to Yuma County and put out a cotton bottom defoliation test with Bill Wooton in the Mohawk area. This test was actually established on July 25th. Treatments were as follows on a acre basis: (1) one gallon of Magclor defoliant and 20 gallons of water plus one quart wetting agent plus one pound amino triazole; (2) 2 gallons of Magclor defoliant and 20 gallons of water plus 1 quart of wetting agent plus one pound of Amino Triazole; (3) 2 gallons Magclor defoliant and 20 gallons of water plus one quart of wetting agent; (4) Check plot, no defoliant applied. Each of these treatments were applied in two different boarders with each plot being 4 rows wide and 1300 feet long. Treatments 3 & 4 were replicated 4 times and treatments 1 and 2 were replicated twice.

The cotton was 5 feet tall at the time the defoliant were applied. A self-propelled high clearance sprayer was used with the lower two nozzles spraying at 4 inches and 19 inches above the top of the bed. This gave good coverage of the bottom 24 inches of the plant.

This test was harvested On September 27, second picking, October 28, and the third picking was December 8th. Mixican hand pickers were used to harvest the cotton. Cotton from the treated and untreated rows was kept separated and taken to a nearby gin for grading. However, there was no significant difference in grades in any of the treatments or checks. There was less than .1 of 1% difference between the gin out of the two different lots. We also took four extra samples from each of the lots and had them sent in for grades.

The grades came back and there was very little difference between either lot.

Only a nominal amount of second growth retardation was noticeable on treatments one and two, following the use of Amino Triazole. And only a minor amount of bottom defoliation was noticeable on any of the treated plants.

Some lessening of boll rot was apparent on all treated cotton. However, the use of defoliant appeared to hasten the opening of the bolls and resulted in higher yields of treated cotton over untreated cotton at each picking.

It is felt that this test should be repeated next year with heavier concentrations of both Magclor and Amino Triazole applied at an earlier date and higher on the plant. Heavy frost on November 9th completed the defoliation of this test.

Included in this report are the summarized results of the test. Except where noted otherwise, the yields are pounds of cotton picked from one row 1300 feet long.

COTTON SEED

Wilbur Wuertz of the Arizona Cotton Planting Seed Distributors visited Yuma County June 29th with Professor Pressley and Dr. Fisher to present demonstrations on the proper roguing of certified cotton seed fields, and to also illustrate methods used in plant breeding, such as cross pollination and self pollination. Assistant County Agent, Ervin Bramhall, accompanied this group during the demonstration.

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COTTON BOTTOM DEFOLIATION * FIELD NO. 12-14

Cooperator, Bill Wootten

Snyder Ranch

Average Yield in lbs. per acre (Field Weight)	Treatment	First Picking	2nd Picking	3rd Picking	Average yield per row- all pickings
3558 lbs.	# 1	166 lbs.	46 lbs.	127 lbs.	113 lbs.
3257 lbs.	# 2	152 lbs.	51 lbs.	107 lbs.	103 lbs.
3436 lbs.	# 3	171 lbs.	49 lbs.	106 lbs.	109 lbs.
2862 lbs.	check	131 lbs.	46 lbs.	95 lbs.	91 lbs.

<u>Treatment</u>	<u>Rep. 1</u>	<u>Rep. 2</u>	<u>Rep. 3</u>	<u>Rep. 4</u>	<u>Average *</u>
1	776	576			676
2	611	625			618
3	780	672	554	605	653
4	561	599	491	524	544

* Total average weight from the three pickings from the two inner rows of each plot.

COTTON BOTTOM DEFOOLIATION * FIELD NO. 12-14
 Cooperator, Bill Wootten
 Snyder Ranch

* Cotton Picked September 27, 1955
 ** Cotton Picked October 28, 1955
 *** Cotton Picked December 8, 1955

REP. I (A)

REP. II (B)

Rep. 1	Rep. 1	Rep. 1	Rep. 2	Rep. 2	Rep. 1	25-28	No.	Rep. 2	Rep. 3	Rep. 4	Rep. 3	Rep. 4	Rep. 2	No											
#3	1	4	4	3	2	Reg. w/other machines	Treatment	1	4	4	3	3	2	Treatment											
ROW # 2	6	7	10	11	14	15	18	19	22	23	2	4	5	8	9	12	13	16	17	20	21	24	25	27	28
*251	216	215	210	141	136	150	174	165	141	168	170		130	109	114	102	104	126	132	163	148	154	138	131	
** 37	40	49	50	46	45	50	50	67	60	58	48		47	36	39	40	49	48	37	51	48	54	54	43	
***110	126	125	127	89	104	73	102	128	111	78	89		118	136	99	97	99	98	105	66	101	100	133	126	
Total Yield:	389	382	389	387	276	285	273	326	360	312	304	207		295	281	252	239	252	272	274	280	297	308	325	300

- Treatment:
1. 1 gallon Maglor defoliant and 20 gallon of water + 1 quart wetting agent + 1 lb. Amino Triazole
 2. 2 gallon Maglor defoliant and 20 gallon of water + 1 quart wetting agent + 1 lb. Amino Triazole
 3. Same as No. 2 less Amino Triazole or regular field application
 4. No defoliant applied

Note: Plots are 4 rows wide and approximately 1300 feet long.

All materials applied July 25, 1955

FIELD CROPS CONFERENCE PROGRAM

Rood School

(5 miles West and 2 mi. out of the corners of 4th Ave. & 8th in Yuma)

Monday, January 24, 1955

Starting Time 9:45 A. M.

Morning Program

Chairman - Al Face, County Agent

- 9:45 Introductions
10:00 "Farm Outlook", Dr. George Barr, Head of Agricultural Economics Dept.
University of Arizona, Tucson, Arizona
10:15 "Importance of Crop Rotation", Charlie Ellwood, Extension Agronomist,
University of Arizona, Tucson, Arizona
10:30 "Alfalfa Fertilization", Dr. C. E. Stanberry, Soil Scientist,
Agricultural Research Service, Yuma Arizona
10:45 "Weed Control with Chemicals in 1955", Fred Arle, Weed Control Division
Agricultural Research Service, Phoenix, Arizona
11:00 "Flame & Rotary Hoe Cotton Cultivation", Emmett Holekamp, Advisor
Agricultural Engineering Department, University of Arizona
11:15 "Corn Test Results from Palo Verde Valley", Win Lawson, Farm Advisor,
Riverside, California
11:30 Panel Discussion by Yuma County farmers on cotton production.

Lunch

Machinery dealers responsible for the luncheon are Begley Tractor Co.,
Beeler-Thomas Implement Co., Braden Machinery Co., Castleton Tractor Sales,
Sturges Implement Co. and Yuma Equipment Co. Arrangements and serving are
through the courtesy of the Yuma County Farm Bureau.

Afternoon Program

- 1:00 "Cotton Fertilizer Test Results", Ervin Bramhall, Assistant County Agent
Yuma, Arizona
1:15 "Soybean Production", George Abel, Agronomist, Southwestern Irrigation
Field Station, Brawley, California
1:30 "Soybean Experimental Results & Seed Distribution", Dr. Dean McAlister,
Head of Agronomy Dept., University of Arizona
1:45 "Common Diseases to Yuma Crops", Dr. Ivan Shields, Extension Plant
Pathologist, University of Arizona.
2:00 "Varieties & Dates of Plantings", Frank Pritchard, Superintendent,
University of Arizona Experimental Farm, Yuma, Arizona
2:15 RECESS - Coffee
2:25 "Small Grain Fertilization", Al Face, County Agent, Yuma Arizona
2:40 "Proper Management of Salty Soils", Bob Ayers, Farm Advisor, El
Centro, California
2:55 "Irrigation for Increased Yields", Pat Middleton, Extension Irrigation
Specialist, University of Arizona, Tucson, Arizona
3:10 "Alfalfa Varieties and Seed Outlook", Dr. Dean McAlister, Head of
Agronomy Dept., University of Arizona, Tucson, Arizona
3:25 DISCUSSION
3:45 SUMMARY

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ALFAIFA

The alfalfa acreage in Yuma County was estimated to be 70,000 acres May 1, 1955. This is quite an increase over 48,000 acres at the end of 1954.

Alfalfa Prices

For the second year, alfalfa hay prices were high due to the terrific loss that many alfalfa growers encountered from the yellow clover aphid. In January of 1955, alfalfa hay prices ranged from \$28. to \$30. per ton. In February, they stood at \$30. and in March the price shot up to \$35. for good quality hay. The beginning of April saw hay prices at \$35., later to decline to \$25. and toward the end of the month going back to \$27. Good quality hay could be sold for from \$24. to \$25. throughout the summer months. At the present time hay is bringing from \$27. to \$28. per ton, here in Yuma.

Alfalfa seed growers received 22¢ per pound for uncertified seed, and from 24¢ to 26¢ per pound for certified seed. The demand for northern seed - that is, Ranger and Buffalo - was very weak.

Alfalfa Insects

The yellow clover aphid, later determined to be the spotted alfalfa aphid, was the principle problem of alfalfa growers in 1955. A number of farmers became quite alarmed over the loss in hay production due to the aphid and wanted to receive state or federal aid to control the yellow clover aphid.

Most people felt that the thing the farmers needed most was an educational program on the control of the aphid. This matter was reviewed with Dr. Don Tuttle, Dr. J. N. Roney and the executive board of the Yuma County Farm Bureau. As a result, a survey was mailed to 500 farmers in Yuma County. Of the 400 mailed to southern Yuma County, about 125 forms were returned. Dr. J. N. Roney, Extension Entomologist, assisted in reviewing the reports and gleaned from them that farmers had dusted 5000 acres of alfalfa with various insecticides and had received satisfactory control. Those receiving satisfactory control had suffered no loss of stand, either totally or partially. A number of farmers applied control measures and still had high losses. From the 12,000 acres reported, over 400 acres of the new stands were completely lost, and 400 acres of new stands were partially lost. In the case of old fields, nearly 2,000 acres were reported partially lost and over 300 acres completely lost. For the most part, growers indicated that they did not realize the seriousness of the aphid; therefore, did not watch for it close enough in new stands, and in the case of old stands they thought they could tolerate a greater infestation than they apparently could. A number of old fields were left infested with the yellow clover aphid during the months of August and September. During this same period, three valley farmers did not irrigate and when the fields were irrigated, in October, they failed to respond. Most growers used ten pounds of insecticides with ground dusters for control. Some growers used 5% malathion while others used 2% parathion, 3% BHC or 5% DDT, 15% Toxaphene and 40% sulfur.

After going over the survey forms with Dr. J. N. Roney, Dr. Don Tuttle and the executive board of the Yuma County Farm Bureau, it was decided that the extension service would conduct an even more extensive program through community field

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meetings to assist farmers in learning to recognize and determine the presence of aphids to avoid losses in alfalfa stands and in yield.

A television was presented with Dr. J. N. Roney and Dr. Don Tuttle, regarding the alfalfa aphid. Farmers were urged to watch their fields closely so that they would not get a heavy buildup of the aphid and, thereby, suffer so much loss and reduced yields.

A copy of the letter that was mailed to growers along with the survey form is included in the pages that follow in this report. Also, included in this report is a brief discussion of the yellow clover aphid prepared by Dr. Don Tuttle. This was an enclosure with the survey to farmers in Yuma County.

It is believed that more farmers used control measures at the proper time and increased their yields of alfalfa hay due to the program conducted by the Extension Service. In addition to radio, newspaper and television work, Extension Service conducted educational meetings to acquaint farmers with control measures. These meetings were held in the North Gila Valley, the South Gila Valley, Yuma Mesa, Yuma Valley, Wellton-Mohawk and Parker. It was estimated that more than 140 were in attendance in those meetings. Dr. J. N. Roney, Extension Entomologist, and Dr. Tuttle, local research entomologist, assisted local Extension Agents with these meetings.

Insect control recommendations were made to alfalfa seed growers in Yuma County. Growers were urged to use Toxaphene as their principle insecticide in order that pollinators might not be destroyed.

The spotted alfalfa aphid has again shown up in Yuma County fields this fall. However, it has not built up in numbers as fast as it did last fall. It was first noticed about the middle of October. Even then, however, many fields had no aphids in them. Three to four weeks later it seemed that there were even less aphids than when first noticed. One factor which has been believed to effect the build-up is a black fungus, which has definitely reduced the numbers some.

A few farmers have been reported as applying control to their fields, although this has been mostly on new seedings. The Extension Office has had several radio programs and news articles emphasizing the importance of checking fields regularly, particularly new stands, to avoid sudden outbreaks which could cause the loss of a stand.

Alfalfa Seed Meeting

An alfalfa seed production meeting was held by the Agricultural Extension Service on May 10th. There was an attendance of 75 at the meeting. Dr. C. O. Stanberry, Soil Scientist for the U. S. D.A., spoke to the group on the results of three years of research on alfalfa seed production on the Yuma Mesa. Dr. Don Tuttle, Local Research Entomologist for the University of

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Arizona, spoke on his results in regard to alfalfa seed insect control. Frank Todd, Bee Culturist for the U. S. D. A., spoke on the importance of pollination in alfalfa seed production. Dr. Dean McAlister, of the Agronomy Department at the University of Arizona, Spoke on the alfalfa seed outlook. Dr. J. N. Roney, Extension Entomologist, presented alfalfa seed insect control recommendations for 1955. There was considerable interest in the meeting and newspaper publicity was given to the subject matter presented through both the Yuma Daily Sun and the Yuma County Farmer, and radio.

Pollination

Local Extension Agents followed alfalfa seed fields on the Yuma Mesa with relation to the placement of honey bees during the first seed crop. One of the local beekeepers made arrangements to place 1500 hives of his on 500 acres of alfalfa seed with three growers on the southernmost edge of the Yuma Mesa. This particular area was surrounded by desert on three sides and had alfalfa hay on the other. Dr. George Butler, from the Entomology Dept. of the University of Arizona, spent a large portion of the month of June studying the activity of bees in this area as well as in a number of other fields on the Yuma Mesa. Mr. Frank Todd, of the Bee Culture Lab. of the University, located at Tucson, also studied the activity throughout the area. Local Extension Agents accompanied these men on a tour of alfalfa seed fields and it appeared quite obvious that pollination was best in those fields that were attracting the largest number of bees. Bee counts had been made on a number of instances in various fields over the Yuma Mesa by Dr. Butler and his assistants. The fields where seed set was best were not necessarily those that had bees placed in them, but those that had a number of bees populating them during the day.

Dr. George Butler and Mr. Frank Todd assisted the County Agent in presenting a television program on alfalfa pollination on June 30th.

Dr. Don Tuttle, local research entomologist, accumulated yield data from alfalfa seed fields on the Yuma Mesa and correlated this with the location of hives. The data on this survey is not available at this time; however, it is indicated that there was quite a trend towards higher yields with increased bee populations. This matter should be followed closely by the Extension Service in the future.

For some time, the State of California was working on alfalfa seed loss from threshers. Wyoming has also worked on this matter. Local growers have been interested in determining what their seed losses might be. Extension agents worked with Ted Welchert, Extension Engineer, in checking on these losses. After comparing the results of combines threshing alfalfa seed on the Yuma Mesa with the information given in the California and Wyoming circulars, it looks like the alfalfa seed loss from threshers is not serious as long as adjustments are consistent with recommendations given.

According to California, one and one-half to three percent of the total yield (in the dirt) in separation loss can be expected when the machines are properly adjusted. Two combines belonging to Hubert Rose, that were threshing on the Yuma Mesa, were well within the limits and the Splawn combine showed

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about a 5% loss. Mr. Welchert believes the difference on the Splawn combine showed that it could have been corrected by simply adjusting the chaffer sieve to about a one-half inch opening. at the time the machine was checked in the field, the sieve was completely closed. All other adjustments on all three machines were very close to recommendations, except for one of Rose's machines that had a little higher cylinder speed than recommended, and the Splawn machine perhaps a little lower than recommended; however, in both cases, there were reasons. Mr. Rose's machine was operating in a fairly heavy crop that was extremely tough because of poor defoliation and the Splawn machine was operating in a very light crop on an extremely dry day.

Separation losses, comparing the docking pan against the canvas, did not agree very well on the Splawn machines. Upon using the canvas to catch the tailings, we had approximately a ten pound per acre loss. Using the dockage pan, the loss was about 3.3 pounds per acre. At first, it appeared to work out at approximately 100 dirt seeds caught at five places representing one pound per acre loss instead of 300 seeds. This is theoretically calculated, however, this may be the case - rather, it may be that more seed and curls could have gone over into the straw.

There are a number of things that Mr. Welchert felt should be done another year in checking alfalfa seed threshers. The experience in making these preliminary checks in 1955 should be of value in further checking another year. It did verify that our combines are not losing as much seed as many people thought they were. It is true that there may be some machines having high losses in the Yuma area that were not checked.

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COOPERATIVE EXTENSION WORK
in
AGRICULTURE AND HOME ECONOMICS
State of Arizona

University of Arizona
College of Agriculture
U. S. Dept. of Agriculture
Yuma County Cooperating

Yuma

Agricultural Extension Service
Home Demonstration Work
County Agent Work

February 12, 1955

YELLOW CLOVER APHIDS

Dear Alfalfa Grower:

You can be helpful in determining the best course to take in destroying the Yellow Clover Aphid by completing the enclosed form. Please complete this survey if you have had any acreage of alfalfa since May of 1954.

Here is how you fill in the survey sheet: (the numbers used below coincide with the numbers on the questionnaire.)

1. Indicate your total acreage of alfalfa without regard for the extent of aphid infestation.
2. If you have suffered partial or a total loss of stand on an old or new planting, indicate the total acres involved.
3. Indicate the insecticides your acres have had applied for the the control of the clover aphid. The designation Field No. 1, Field No. 2 etc., is set up so that you can put the total acreage that you have treated in a similar manner under the same heading. For example, you may have treated 200 acres of alfalfa that is in three different locations two times for aphid control. If so, indicate the 200 acres as Field No. 1. All acreage treated with different insecticides or treated only once, can be covered under headings Field No. 2 and Field No. 3.
4. Indicate your knowledge of the clover aphid.
5. Under remarks, you can state any observations that you have made of the aphid problem.

I am enclosing sheets prepared by Dr. Donald Tuttle, local research entomologist for the University of Arizona, on the clover aphid for your information.

Be sure to check new fields every 2 days and old fields twice a week for aphid infestations. Call on us if we can help you better understand this aphid problem.

Please complete the survey for us, as it may be the basis for a united effort against this costly pest.

Sincerely,

/s/ ALBERT R. FACE

Albert R. Face
/t/ County Agricultural Agent

Enc.
500 c.

COOPERATIVE EXTENSION WORK
in
AGRICULTURE AND HOME ECONOMICS
State of Arizona
Yuma

University of Arizona
College of Agriculture
U. S. Department of Agriculture
and Yuma County Cooperating

Agricultural Extension Service
Home Demonstration Work
County Agent Work

February 12, 1955

YELLOW CLOVER APHID SURVEY

Dear Alfalfa Grower:

Please complete and mail this survey sheet in the enclosed self addressed envelope. Be sure to sign your name below.

1. Alfalfa Acreage: Old Stand _____ Acres. New Plantings***** _____ Acres.
2. Losses from Aphid:
Complete loss of stand: Old _____ Acres. New Plantings _____ acres.
Partial loss of stand: Old _____ Acres. New Plantings _____ Acres.
3. Control Measures Applied:
Field No. 1:
Acres _____ Month _____ Insecticide _____ Amt. per Acre _____.
Further Control on Field No. 1:
When _____ Insecticide _____ Amt. per Acre _____ How applied _____.
Field No. 2:
Acres _____ Month _____ Insecticide _____ Amt. per Acre _____.
Further Control on Field No. 2:
When _____ Insecticide _____ Amt. per Acre _____ How Applied _____.
Field No. 3:
Acres _____ Month _____ Insecticide _____ Amt. per Acre _____.
Further Control on Field No. 2:
When _____ Insecticide _____ Amt. per Acre _____ How Applied _____.
4. Have you seen the clover aphid? _____ yes. _____ no.
Have you seen its damage? _____ yes. _____ no.

Remarks: _____

Sincerely,

Albert R. Face,
County Agricultural Agent

Growers Signature

Enc.
500 c.

THE YELLOW CLOVER APHID - A NEW ALFALFA PEST IN THE SOUTHWEST

Department of Entomology
University of Arizona
By: Dr. Don Tuttle

Distribution

The Yellow clover aphid, *Theriacaphis ononidis* (Kalt.), appeared in 1954 for the first time in the Southwestern United States as a serious pest of alfalfa, both for hay and seed. This species, as determined June 11, 1954 by H. C. Dickson, has had several other names; Callipterus trifolii Monell, the clover callipterus, Myzocallis trifolii Monell and M. Ononidis (Kalt.).

The yellow clover aphid has now been identified from all the important alfalfa growing areas of southern Arizona. It has spread rapidly in California from the Brawley and Holtville region in all directions and has not (Dec. 1954) reached as far north as Barstow on the east side. Although not immediately recognized in New Mexico, it appeared there also during the early part of 1954. It is rapidly moving north now and there have been recent reports of it being found in states to the north of us.

History

This aphid has been reported from many places in Europe, Asia and Africa and from northeastern and Middle-western United States. It has not been a serious pest in most of these locations and has been confined to clovers, mostly to red clover. Any injury from it has been overshadowed by pea aphid injury. It had not been reported on alfalfa in the middle west. The species has been reported from alfalfa in Europe, Asia and Africa. It appears now that injury first occurred in New Mexico, second in Arizona and shortly thereafter in California. Its spread has either been extremely rapid or a few specimens have been overshadowed by the pea aphid for a year or so.

Injury

When aphids are abundant, copious amounts of honeydew are produced and plants are defoliated. In heavily infested fields honeydew is noticeable on the leaves, stems and ground, making baling difficult or impossible. The nymphs and adults of the yellow clover aphid are found on the undersides of the leaves. The lower leaves of the plant are infested first, become dry and fall off. This defoliation results in reduction of yield and quality of the hay due to steminess. The quality of the hay is further reduced by discoloration of the hay as a result of a black fungus on the honeydew. Indications are that defoliation of the plant affects seed yield and also retards regrowth of the alfalfa following cutting.

Around Yuma, the population of aphids dwindled during July, August and September. As new fields were planted and reseeded took place, the aphids again became prominent everywhere. A few older stands suffered severe damage but the majority of such fields seemed to be able to withstand the attack of the yellow clover aphid. On the other hand, seedlings were killed and many stands in Arizona, New Mexico, and California were lost unless treated.

Appearance:

This aphid is rather small, even for an aphid, and is pale yellowish green in color, with four rows of black spots on its back. It is generally less than half the size of the pea aphid. They are both winged and wingless. The wings have darkened veins.

Habits

This species is easily disturbed and readily jumps from the plant host. This

habit appears to be much to the advantage of the insect of protecting it from predatory and parasitic enemy attacks.

Life History

In the Mid-west, eggs are produced from a sexual generation in the fall of the year, and the egg passes in the winter. From this a stem mother hatches and several generations of females are then produced during the summer. Each female produces from 25 to 100 young which are all females. There may be as many as 17 generations per year in the mid-west. In the southwest it is doubtful whether the egg stage occurs. The aphids merely keep on producing during the winter asexually but at a slower rate than during the more optimum temperatures. Under conditions in southern Arizona and California it is quite possible that there may be from 20 to 30 generations per year. With only females being produced and these as living young, a rapid build-up results. In this particular group of aphids, a high percent of the individuals are winged which accounts for the rapid dispersal of the yellow clover aphid.

Control

Natural - Damp weather has been reported to be conducive to the fungus, Empusa aphids, which attacks the aphids. In desert regions, of course, this is not particularly helpful. Lady beetles and other predatory insects may feed on the aphids, although the habit this aphid has of jumping at the slightest disturbance makes it less susceptible to attacks from predators and parasites.

Chemical - This aphid is easily controlled by a number of insecticides but reinfestation is rapid for all materials. Test results and experience of growers vary on the length of time reinfestation occurs. In choosing a material for control of the aphid the problem of residue must be considered. Phosphates as malathion and parathion have a short residual period so that it is possible to utilize the alfalfa from 7 to 10 days for hay or pasturing. For seed crops, new plantings or reseeded fields not to be used for 40 days 5-15-40 (DDT, Toxaphene, and sulfur) gives a longer protective period.

Present Recommendations

<u>Material</u>	<u>Hay</u>	<u>Seed</u>	<u>Rate per acre</u>
Malathion Dust	Yes	Yes	10 lbs. of 5% dust 2-5 lbs. more by air.
Malathion Spray	Yes	Yes	1 pint of 25% emulsion*
Parathion Dust	Yes	Yes	10 lbs. of 2% dust 2-5 lbs. more by air.
Parathion Spray	Yes	Yes	1 pint of 25% emulsion*
5% DDT, 15% Toxaphene and 40% sulfur dust	No	Yes	10-15 pounds.
DDT plus Toxaphene spray	No	Yes	1 quart of 25% DDT plus 1 quart of 60% Toxaphene*

* Use these materials in approximately six gallons of water per acre.

Alfalfa Pro-harvesting Spraying

In early July, alfalfa seed growers began using pre-harvesting spraying to prepare their fields for threshing. The weather was not too satisfactory for top killing operation, and as a result, a study was made of the effect of the spraying with regard to the humidity and temperatures. Most of this work was done by Assistant County Agent, Paul Lineberry. Preharvest spraying of alfalfa was proven to be quite advantageous to the alfalfa seed grower in saving seed, particularly when there is rainy weather. This is compared to the old method of windrowing seed in preparation for harvesting. Many farmers estimated that they would have lost as much as 50% of their crop had they rowed it as in previous years. Most of the farmers in the South Gila and Yuma Valleys used ground equipment for spraying their fields. Those on the Yuma Mesa did most of their spraying by air.

Planting Alfalfa

A television program was presented with Frank Pritchard, superintendent of the University Experiment Station, as guest on September 15th. The main topic of the program was October 1 is an important date to plant alfalfa. Other points covered were level land, seed bed preparation, variety selection, certification, fertilization, seeding rate, inoculation, nurse crops, and insect control. This same information was covered by newspaper and radio.

A community newsletter on alfalfa planting was mailed to the farmers in the Wellton Mohawk area to assist those new farmers in particular. This alfalfa newsletter can be found on the pages that follow in this report.

Alfalfa Fertilization

Dr. C. O. Stanberry of the Agricultural Research Service of the University of Arizona talked to farmers at the Yuma Valley Conference with regard to alfalfa fertilization. Following that meeting a tape recording was made with Dr. Stanberry on alfalfa fertilization for a broadcast on February 1. Similar information was carried in local newspapers pointing out the fact that winter was ideal for alfalfa fertilization plus the quantity and form of phosphate to be used.

Alfalfa Variety Test

The alfalfa variety test established on the Wellton Mohawk Development Farm in cooperation with Jack Currie, in October of 1954, will have treatments of phosphate applied to some of the plots in 1955. 1956 should show some possible results in that this test was established to determine whether or not large quantities of phosphate might be applied to last for a period of from two to three years. Treatments included 200 lbs. per acre of P₂O₅ and 400 lbs. of P₂O₅ applied prior to planting. The lower rate will receive 100 lbs. of

P205 in October of 1955.

The alfalfa variety test established on the Wellton-Development Farm in cooperation with Jack, Curries, in October of 1954, showed some difference in varieties in 1955. However, there was no difference of any significance in yields as they were taken. Assistant Agent Bramhall made weighings from two different cuttings from the test to determine the difference in hay yields. There was no difference in the yields of these varieties, that is, African, Chilean 2105, and Arizona synthetic, up to this date. That test will be continued over a three year period. At the time of the field day held in early June, this year, the African Alfalfa was blooming while there were only a few scattered blooms in the Arizona Synthetic and the Chilean 2015. This gave the farmers present the opportunity to see the difference in the length of time to bloom of the difference in varieties.

In August, the variety plots were observed by the Extension Agents and African Alfalfa came to be standing the summer better than the other varieties. This is a matter to be determined after another season. All varieties should be reseeded with a light seeding rate in the fall of 1955. Mr. Currie intends to reseed all of the plots at a seeding rate of 10 lbs. per acre.

BARLEY

It is estimated that there were 15,000 acres of barley in Yuma County in 1955. Extension Agents answered a number of inquiries, which required with regard to varieties, dates of planting and fertilization.

A barley fertilizer test was conducted on the Frank Batley Ranch in the Mohawk Valley in 1954-55. However, there was no significant difference in yield from the fertilizer treatments applied in the test. Assistant Agent Bramhall was responsible for the test, which included six treatments, each treatment being replicated four times for ammunization. The plot size of each treatment was 12 feet wide and 130 feet long. The treatments included the following: No fertilizer, 50 lbs. of Nitrogen from amonium nitrate, 100 lbs. of nitrogen from amonium nitrate, 125 lbs. of nitrogen from amonium nitrate, 150 lbs. of nitrogen from amonium nitrate and 100 lbs. of nitrogen from amonium nitrate plus 50 lbs. of actual phosphate per acre.

The variety of barley used as an indicator was Mariout, planted December 1st in the mulch. The grain was harvested and the yield taken. But there was no difference in yield in any of the treatments. These findings carry out what has been found in other tests on new land. Namely, that nitrogen at any level did not increase the yield. However, determination of when nitrogen is needed on the soil may depend upon the soil texture and what kind of growth was present on the soil prior to the development.

Barley variety and date of planting test

A barley variety test and date of planting test was also conducted with Frank Batley in the Wellton-Mohawk area. These tests were conducted to determine the best variety to plant and the optimum date of planting.

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The two varieties of barley used for this test were Mariout and Arivat. The five dates of planting and the seeding rate per acre were:

December 1st	--	65 lbs per acre
December 20th	--	70 lbs. per acre
January 28th	--	80 lbs. per acre
February 10th	--	90 lbs. per acre
March 12th	--	90 lbs. per acre

All plantings were made in the mulch with 100 lbs. of nitrogen from ammonium nitrate preplant.

The Grain was harvested the first of June and the yield added taken at that time.

Yield/Acre	Variety	Dec. 1	Dec. 20	Jan. 28	Feb. 10	Mar. 12
Mariout	4586	4965	4310	4482	1635	
Arivat	4862	4793	3793	4068	----	

Barley Fertilizer Test
 Frank Batley Cooperator

Treatment No.	Treatment	Form of Fertilizer	R1	R2	R3	R4	Aver.	Average Yield
#/acre	H-P2O5	Plot Yield	#/plot	#/plot	#/plot	#/plot	#/plot	per acre
1	0		128	133	111	119	123	4241
2	50	Ammonium Nit.	134	130	124	126	128	4413
3	100	"	130	122	128	123	126	4344
4	125	"	125	104	127	108	116	4000
5	150	"	116	115	112	112	114	3931
6	100-5	"						
		Plus Triple super Phosphate	128	113	122	124	122	4206

The yield results bear out what is recommended for this area. Do not plant Arivat after the middle of December because of the reduced yield.

FLAX

It is estimated that there were 4000 acres of flax planted in Yuma County in 1954-55. February plantings of flax continued to do very well. One planting of flax was made February 5th on the Fred Gregg ranch in the Mohawk Valley that produced 50 bushels per acre. The flax variety test, conducted on the Frank Batley ranch also yielded high on the February planting. The Extension Agents made a number of recommendations on variety, dates of plantings, and fertilization.

Flax fertilizer test

Assistant Agent Bramhall was responsible for the flax fertilization test which was conducted in cooperation with Frank Batley in the Wellton Mohawk area.

The fertilizer test consisted of six treatments, each treatment replicated four times in randomization. The plot size of each treatment was 12 feet wide and 130 feet long. The treatments included: No fertilizer, 50 lbs. of actual nitrogen from ammonium nitrate, 100 lbs. of actual nitrogen from ammonium nitrate, 125 lbs. of nitrogen from ammonium nitrate, 150 lbs. of nitrogen from ammonium nitrate and 100 lbs. of nitrogen from ammonium nitrate plus 50 lbs. of actual phosphate per acre.

The variety of flax used as an indicator was Imperial Punjab planted in the mulch on January 28th. The grain was harvested and yield added taken. It was observed in these results that there was no difference in yields of the treatments plus nitrogen at these rates per acre. The treatment that did not receive any nitrogen showed a lower yield than those to which some nitrogen was applied. Again, this may have been caused by the fact that the test was on new land.

Flax variety and date of planting test

A flax variety and date of planting test was also conducted in cooperation with Frank Batley in the Wellton Mohawk area. These tests were conducted to determine the best variety to plant and the optimum date of planting. The three varieties used for the test were Imperial Punjab, Punjab 47 and Punjab 53. Each treatment or variety was replicated four times in randomization. The five dates of planting and seeding rates per acre were:

December 1	--	50 pounds
December 20	--	61 pounds
January 28	--	70 pounds
February 10	--	80 pounds
March 12	--	80 pounds

The grain was harvested the first of July and yield added taken at that time.

Yield in Bushel / Acre:	Variety	Dec. 1	Dec. 20	Jan. 28	Feb. 10	Mar. 12
	Imperial Punjab	19.7	50.4	36.3	46.7	6.7
	Punjab 47	13.0	42.4			
	Punjab 53	16.6	48.0	34.4	41.8	

WHEAT

It is estimated that there were 8000 acres of wheat planted in Yuma County in 1954-55. A number of farmers obtained some excellent yields this year and in the previous year. Many felt that they could produce as many pounds per acre of wheat as they could of barley, which proved to be true in the test work conducted on the Frank Batley Ranch in the Wellton-Mohawk area. Assistant County Agent Bramhall was responsible for a wheat variety and date of planting test on Mr. Batley ranch. The tests were conducted to determine the best variety to plant and the optimum date of planting. The five varieties of wheat used for these tests were: Romona, Awmed Onas, White Federation and Selkirk. The five dates of planting and seeding rates per acre were.

December 1	--	65 pounds
December 20	--	70 pounds
January 28	---	80 pounds
February 10	--	90 pounds
March 12	--	90 pounds

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
State of Arizona
Yuma

University of Arizona
College of Agriculture
U. S. Department of Agriculture
and Yuma County Cooperating

Agriculture Extension Service
Home Demonstration Work
County Agent Work

September 14, 1955

YOUR COMMUNITY ALFALFA NEWSLETTER

Dear Farmers of the Wellton-Mohawk:

With alfalfa planting season approaching, we thought a few things about alfalfa might be of interest.

PLANT ALFALFA OCTOBER 1

Alfalfa can be planted over a long period of time with varying results. For top results, plant October 1. Earlier it is generally too hot. Later plantings don't produce until spring. If you are planting alfalfa next to a cotton field, get your woolly worm fence up as soon as you water your alfalfa planting.

INNOCULATE ALFALFA ON NEW LAND

Those planting alfalfa on new land or land that hasn't previously grown alfalfa must inoculate their alfalfa seed with nitrogen fixing bacteria. This inoculant can be obtained at your seed store.

CERTIFIED ALFALFA SEED PRODUCTION

Those planning to plant registered alfalfa seed this fall to produce certified seed must file a preplanting inspection application at the county agents office before the new planting is made. When you plant, be sure to save a purple tag from one of the bags of seed and turn it in at the county agent's office.

If you are a new grower, pick up a copy of the Crop Improvement regulations at the county agent's office when you file your preplanting inspection application.

(Continued Page 2)

WELLTON-MESA DEVELOPMENT FARM

Jack Currie, operator of the Wellton-Mesa Development farm has been showing how much alfalfa can really be produced on the Wellton-Mesa with proper irrigation, insect control, and harvesting. It's our guess that Jack will produce between 8 and 9 ton of alfalfa hay per acre in 1955 on this farm.

The Field Day June 3 gave a number of people an opportunity to see the many sources of information for Wellton-Mesa farmers. Those who didn't get a hold of a copy of the Field Day program can obtain one at the County Agents office.

Leonard Erie, irrigation engineer for the A.R.S. of the U.S.D.A. has made irrigation studies that will be reported one of these days. He gave an interesting report at the field day.

Keep your eye on the elephant grass Millard Fourt got started for a wind break.

The alfalfa varieties are interesting to observe at this time. There has been some dying out in the plots but all will be reseeded equqly this fall. Cutworms are thought to have been part of the cause for some of the dying out of plants, but this isn't definite. The matter is being studied. Another year

(Continued Page 2)

CERTIFIED ALFALFA SEED PRODUCTION (CONT.)

Fees will not be collected until you file your application for final inspection next March or April. Applications are due by May 1.

ALFALFA VARIETIES

African alfalfa has been the highest yielding variety in Yuma County. It gives more winter growth and has held a stand longer than other varieties, particularly on Mesa type soils.

Chilean 21-5 has found much favor with Wellton-Mohawk farmers in the past because of the quality hay it produces. It has a fine solid stem and is very leafy. There is a little longer period during which it can be cut and still produce quality hay as compared to African.

Except for the development farm, almost the entire Wellton Mesa is planted to African alfalfa. The Wellton-Mohawk Valley has been almost entirely planted to Chilean 21-5.

Farmers chose to grow Chilean 21-5 in the Valleys to avoid isolation problems in seed certification created when a number of varieties are grown. If and when a variety change is made, it should be done on a community basis. Community leaders should probably give this matter consideration each year.

ALFALFA FERTILIZATION

It is recommended that 200 pounds of actual phosphate be applied prior to new plantings on the Wellton-Mesa. It seems advisable to band the fertilizer to a depth of 4 to 6 inches below the seed line at the time of planting. 100 pounds of actual phosphate is recommended for succeeding years. Banding to a depth of 4 to 6 inches is likely to give best results if equipment is available for this purpose.

Dr. C. O. Stanberry is establishing

(Continued Page 3)

WELLTON MESA DEVELOPMENT FARM (cont.)

may single out a variety most adapted to the Wellton-Mesa

PREHARVESTING SPRAYING ALFALFA

Alfalfa seed growers in Yuma County saved thousands of dollars this year because their alfalfa was sprayed with fortified oil to op kill for harvesting. Had the crop been mowed and rolled as it has been many years in the past, rains would have caused severe loss.

Paul Lineberry, assistant county agent, surveyed grower applications and results. Those interested in the details of this subject should talk to Mr. Lineberry.

YELLOW CLOVER APHID

The Yellow Clover Aphid is now known as the spotted alfalfa aphid. It may occur again this fall so watch your new plantings carefully.

FOR DETAILS

For further details on alfalfa, visit the county agents office. We have a county bulletin entitled "Crops in Yuma County" that may be of further assistance to you.

ALFALFA FERTILIZATION (Cont.)

an experiment on the Yuma-Mesa to determine more definitely the advantages of deeper applications of phosphate. Experimental applications will be made to a depth of 36 inches.

ON VALLEY SOILS, 50 to 100 pounds of actual phosphate may be required for maximum hay production particularly on older land. All of the Valley soils cannot be expected to give a phosphate response. On new soils, it might be advisable to apply 50 pounds of actual phosphate per acre and leave several fertilizer spreader width strips throughout the field to be observed for response in growth.

Mesa farmers should be watching the long ranged phosphate fertilizer test on the Wellton-Mesa development farm.

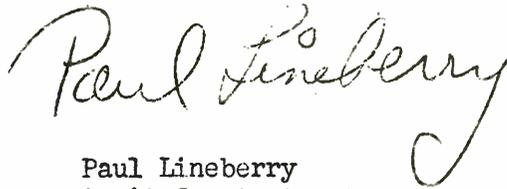
LATE FLASH - VARIETY CHOICE

It is the opinion of the Pureseed Committee of the Wellton Mohawk Irrigation District that strict compliance in planting Chilean 21-5 in the Wellton-Mohawk Valley in 1955 will not be expected. In view of the factors favoring African alfalfa, including a greater resistance to the Spotted Alfalfa Aphid (Yellow Clover Aphid), it is felt that farmers should feel free to plant the variety of their choice this fall.

Sincerely,



Albert R. Face
County Agricultural Agent



Paul Lineberry
Ass't County Agent

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
State of Arizona

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Agricultural Extension Service
Home Demonstration Work
County Agent Work

September 14, 1955

YOUR COMMUNITY NEWSLETTER

REPORTING BARLEY, WHEAT & FLAX
TEST RESULTS

Dear Farmers of the Wellton-Mohawk:

Barley, wheat and flax test results from the Batley ranch in the Mohawk Valley are reported below:

BARLEY AND WHEAT
VARIETY AND DATE OF PLANTING
TEST RESULTS

Barley, wheat and flax varieties were planted on the Frank Batley Ranch on five different dates during the winter of 1954-55. Flax will be reported elsewhere in this letter. The barley and wheat yields are indicated below in pounds per acre:

Barley

<u>Varieties</u>	<u>Dec. 1</u>	<u>Dec. 20</u>	<u>Jan. 28</u>	<u>Feb. 10</u>	<u>Mar. 12</u>
Mariout	4586	4965	4310	4482	1635
Arivat	4862	4793	3793	4068	

Only Mariout was planted in March

Wheat

Ramona	4000	5172	4034	3896	1689
Awmed Onas	4931	5275			
White Federation	4482	4586	3689	3275	
Selkirk	3655	3655	2931		

Where yields are not shown, the variety wasn't planted.

The winter of 1954-55 was considerably colder than usual with a late spring. This permitted later plantings to do somewhat better than might be expected on an average year. 1953-54 plantings ran into an early spring in 1954 and most late plantings were very poor. Each year could be considered an extreme in its own respect.

December 15 to 20 is indicated as being a good time to plant wheat and barley. This compares to ideal dates for the Yuma Valley of about December 5 to 10. Selkirk wheat is the Canadian Variety that has been grown at Yuma as an over winter seed increase for North Dakota, Minnesota and Canada the past few years. It matures later than our latest variety Awmed Onas.

FLAX VARIETY AND DATE OF PLANTING TESTS

FRANK BATLEY RANCH

These plots were harvested July 12, 13 and 14. The tests were conducted to determine the most adapted varieties of flax and the optimum date of planting for each variety.

<u>Variety</u>	<u>Dec. 1</u>	<u>Dec. 20</u>	<u>Jan. 28</u>	<u>Feb. 10</u>	<u>Mar. 12</u>
Imperial	19.7 bu.	50.4	36.3	46.7	6.7
Punjab 47	13.0 "	42.4	--	--	--
Punjab 53	16.6 "	48.0	34.4	41.8	--

Punjab 47 was only planted on the December dates. Punjab 53, our only fusarium wilt resistant variety, was not planted March 12.

Flax planting dates are critical in Yuma County. Yuma Valley finds November 20 to 30 to be best for fall plantings. December 20 certainly turned out to be as good in this one test shown above.

Flax brought Yuma County growers about \$3.50 per bushel this year. The top flax yield of 50.4 bushels per acre gave a gross per acre income of \$176.40 per acre. This was somewhat more than the gross from wheat or barley. The top yields of these crops gave the following gross incomes:

The December 20 Mariout barley planting with a yield of 4965 pounds per acre at 2 cents per pound gave a gross per acre income of \$99.30. The December 20 planting of Awmed Onas wheat with a yield of 5275 per acre at 3 cents per pound gave a gross per acre income of \$158.25.

There is a word of caution for flax. Flax is not a salt tolerant crop as compared to wheat and barley. Therefore, it should only be planted on the best of land known to be relatively low in alkalinity. Wheat or barley is the best bet on newly levelled land with a questionable amount of salty areas in the field.

Fred Gregg grew an excellent 40 acre field of flax this past year. It was planted February 6th and yield 50 bushels per acre.

BATLEY FLAX FERTILIZER TEST RESULTS

<u>FERTILIZER TREATMENT</u>	<u>YIELD</u>
1. None	27.6 bu. per acre
2. 50 N	36.9 " " "
3. 100 N	43.0 " " "
4. 125 N	43.7 " " "
5. 150 N	45.5 " " "
6. 100 N + P ₂ O ₅	43.0 " " "

N - equals nitrogen in actual pounds and P₂O₅ equals phosphate in actual pounds.

This particular test showed the highest yield from 150 lbs. actual nitrogen, however, not a significantly higher yield than from 100 pounds of nitrogen. 50 pounds of actual phosphate gave no response. One hundred pounds of actual nitrogen will generally be quite near the required fertilizer program for flax in Wellton-Mohawk on silty loam and silty clay loam soils.

BARLEY FERTILIZER TEST

A barley fertilizer test was conducted with the same treatments as in the flax test, however, there was no significant increase in yield from any of the fertilizer treatments.

We wish to express thanks to Frank Batley for land, paying of expense, and cooperation extended in this extensive test work. We also are grateful to Ervin Bramhall, assistant county agent, for the long diligent hours he spent establishing these tests and make the results possible.

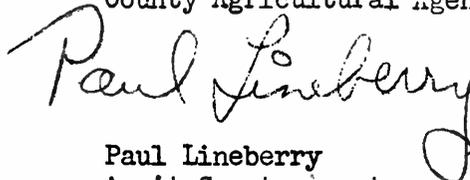
Mr. Bramhall left the County Agent's office September 1 to take a Farm Advisors position with the agricultural extension service of the University of California at Ventura, California.

For a detailed discussion of these tests, stop at the county agent's office.

Sincerely,



Albert R. Face
County Agricultural Agent



Paul Lineberry
Ass't County Agent

ARF:
PL:/mj

125 c.

The grain was harvested the first of June and yield added taken at that time.

Yield / Acre	Variety	Dec. 1	Dec. 20	Jan. 28	Feb. 10	Mar. 12
	Romana	4000	5172	4034	3896	1698
	Awned Onas	4831	5275			
	White Federation	4482	4586	3689	3275	
	Selkirk	3655	3655	2931		

The selkirk variety of wheat is a variety which comes from Canada and was increased by North Dakota and Minnesota in Yuma County. This variety was put in the test to determine the maturity date as compared to local adapted varieties. For example: Awned Onas is the latest to head of our own varieties and Selkirk is from a week to ten days later in heading than Awned Onas. From the results of one year's work it does seem that somewhere near the middle of December is probably the most optimum planting date for the Wellton-Mohawk area. This is on the basis of one year's work.

On the pages that follow in this report a circular letter can be found that reports the results of the variety and date of planting test conducted on the Frank Batley ranch.

SORGHUM

Yuma County farmers are still hesitant about planting grain sorghum due to the severe reduction in yield obtained in 1951, 52 and 53. 1954 was a fairly good year and 1955 yields will probably average around $1\frac{1}{2}$ tons per acre. A few farmers have reported 2 tons per acre but these are in the minority. In an effort to obtain more information on varieties and dates of plantings two variety tests were established on the Frank Batley Ranch. It had been intended that there be three or four dates of planting. However, rain, during the summer months, prevented this from being done. This test work was done in answer to a request from farmers in the Wellton-Mohawk area.

The first date of planting was June 29th, and the second July 30th. Varieties included in the test were DD 38, DD yellow sooner, Hegari, Plainsman, Caprock, and Imperial Kafir. At the time of this report, these tests have not been harvested. Each variety in the two tests were planted in four row plots and randomized four times. The seed was planted in the mulch and had a preplant fertilizer treatment of 50 lbs. of actual nitrogen from ammonium nitrate. Then at each date of planting the plots received a 50 lb. application of nitrogen from ammonium nitrate by side-dressing, when the sorghum 8 to 12 inches tall.

A number of farmers in Yuma County planted sorghum in April, with the idea of double cropping. The first crop proved to be very satisfactory for many farmers. The second crop is running around a ton to a ton and a quarter. Some farmers made Hegari silage from the first crop and then planted to make silage again from the second crop.

At a meeting June 3rd, of the Research and Extension planning Committee of the Wellton Mohawk water district, a Summer Crop Economic Survey test was planned and pronounced. This test included Sudan Grass, Sorghum, Soybeans, Castor Beans and Star Millet. Fred Gregg, of the Texas Hill Ranch, volunteered as farmer cooperator and offered 20 acres for the test. The purpose of the test was to make an economic comparison of the above summer crops following barley. County Extension Agents established the tests and the crop was planted on June 28th. All crops were planted in a moist sea bed in 38 inch rows with a cotton planter. The plots were 4 rows wide and 1300 feet long. Each plot

was replicated four times, making a total of 16 rows of each planting except where there was insufficient seed of a special variety.

A good stand was obtained with all crops and no cultivation was deemed necessary. One dusting for corn ear worms was applied on the 5th of September which was to prove as a good insect control. Land, which had previously grown a crop of barley, had the straw mowed raked and baled. The land had been irrigated and as soon as sufficient dry, 200 lbs. of ammonium phosphate was applied broadcast. Then the land was disinfested in one operation, followed by a cultipacker. The sorghum was harvested November 7, 1954 by the John Deer Combine. The two varieties of sorghums used in the test were DD yellow sooner, which planted at the rate of 7 and .4 pound of seed per acre and DD 38 which was planted at the rate of 9.5 pounds of seed per acre. The average yield per acre was DD yellow sooner - 3,171 lbs. per acre and DD 38 - 2921 lbs per acre. This is the average of the four replicates. In the pages of this report is a complete sheet listing yields of each of the varieties on a replicate basis.

CORN

A number of farmers in Yuma County became interested in growing corn for silage as well as for grain in 1955, as a result of information obtained the Palo Verde Valley where Extension Agents visited test plots on field scale production in 1954. It is estimated that 200 acres were planted in field corn in 1954 and slightly over 1000 acres in 1955.

Farmers were urged to plant their corn in February for both grain and silage. Farmers were discouraged from planting summer corn. Varieties recommended were of the high yielding varieties from the Palo Verde Valley Test. Much dependable information obtained by the Extension Agents came from work conducted in cooperation with Pete Carsons, Leroy Beck, and Frank Batley.

Corn Variety Test

Assistant Agent Bramhall was responsible for a Corn Variety Test conducted on the Pete Carsons Ranch in the Yuma Valley. The test was conducted to determine the best variety of corn for this area for grain and silage. The size of each treatment was 4 rows wide and 100 feet long. The treatments were replicated four times and randomized. The middle two rows of each variety were used as data rows. The test consisted of the following varieties: Pfister 488, Mexican June, Funk G-29, Texas 30, Funk 711, Funk 733, Pioneer 302, Pioneer 301C, Pioneer 312, Pfister 383, Michigan 250, ASE 210, Pfister 403, Pioneer 352, Kingcross and Osborn 419. The soil was prepared for planting in about the same manner as for planting cotton. The Corn was side dressed with 200 lbs of actual ammonium nitrate, when the corn was 8 inches high. Included in the pages of this report is a mimeograph which was prepared for corn field day. Since this mimeograph is very explanatory, it is included in this report.

Corn Silage Test

In order to determine which of the varieties in the Pete Carstens Variety Test were suitable for silage, two samplings were made. The first cutting was made July 7th and 8th and the second on July 15th and 16th. In each case the Assistant Agent went in and cut 50 feet off of the two inside rows of the four row plots. All the material from the two rows was then weighed and calculated on a per acre basis. Besides weighing the stalks and material, Ten ears from the stalks were weighed and graded as

to their maturity stage. A scale of 1 to 6 was set up with 1 being the milk stage - that is, where the milk would spurt out when pierced with the thumb nail or it could be compared to the ideal roasting ear stage. Stage 6 was considered as being the stage when the corn was mature enough for harvesting or "glazed". Stalk counts were made on the last two replicates cut on July 16. These were averaged and then projected out on a per acre basis and are included in the table. Since many of the silage yields seemed quite high, there was some question as to the accuracy of the sampling method. So, a field which was being cut and weighed over a scale was sampled using this same method. We went into the field which was about 600 feet long and consisted of 25 rows. We cut 50 feet of row in four different places within this area. Then we calculated out our yields and the yields according to the sampling method were 9% higher and the material which was cut and weighed over the scales by a commercial operator.

Concerning the high yields, one thing to keep in mind is that this corn was irrigated on July 1 and the first cutting was made on July 8. Another irrigation was made on July 10 and the cutting made on July 16. There is no doubt that this corn was full of water. Our sampling was done on the same day and at the same time the commercial operator was harvesting the field for silage. The results of the two dates of cutting for silage were summarized and compiled into one table. The basis of this was the maturity scale which was given to each variety at the two different times it was cut. Since of each of the corn varieties had a different maturity date, we felt it was unfair to compare a late maturing variety to an early maturing variety, which is what was done when the corns are compared as to yields on the day they were cut. Therefore the varieties were ranked on this adjusted scale using the maturing scale or, in other words, we used the weight which was taken at the time the corn was closest to its desired stage for silage cutting.

More demonstration work must be done on this in 1956 to determine the accuracy of our yields. If corn can produce 25 to 30 tons of silage or more per acre, it will definitely have a place in the County, since that would be more silage per acre than one can obtain from any of the sorghums.

Corn Fertilizer Test

A corn fertilizer test consisting of nine treatments was conducted in cooperation with Pete Carstens of the Yuma Valley. This test was conducted to determine the nitrogen requirement of corn and the phosphate needs. The different rates of actual ammonium nitrate fertilizer were 100 lbs. of nitrogen, 120 lbs. of nitrogen, 200 lbs. of nitrogen, 250 lbs. of nitrogen, 300 lbs. of nitrogen, 120 lbs. of nitrogen plus 50 lbs. of P_2O_5 , 200 lbs. of agricultural ammonium gas, 200 lbs. 10-10-0 Fertilaid, 550 lbs. 2-4-0 Fertilaid and 100 lbs. of nitrogen plus 250 lbs. of Fertilaid. The results from the yield data showed there was no difference in yield from any of the treatments. The Conclusion is that this particular area has been in vegetable crops for a number of years, and therefore a high rate of fertilizer has been used on these crops. This led us to believe a carryover of nitrogen was present for this corn crop and therefore through off the results of the test.

Frank Batley Corn Variety and Date of Planting Test

Assistant Agent Bramhall was also responsible for the Corn Variety Date of Planting Test conducted in cooperation with Frank Batley. The purpose of this test was to determine the best variety of field corn for grain and the optimum date of planting.

Annual Narrative Report
Yuma County - 1954-55
Ray Weick, Acting County Agent
Paul E. Lineberry, Assistant County Agent
Ernest A. Foster, Assistant County Agent

The size of each treatment was four rows wide and 100 feet long, replicated four times and randomized. The middle two rows of each treatment of four rows were used as yield data rows.

The cropping history for this test was as follows: Leveled out of the desert in 1953 planted to barley in the Spring 1954, planted to hemp in the Summer of 1954. This was plowed under and planted to the corn variety date of planting test in the Spring of 1955.

The soil was prepared by discing, irrigating, floating, irrigating, harrowing and planting. The seed was planted in the mulch $2\frac{1}{2}$ inches deep. The seed was planted as near to a 6 inch spacing as was possible. Dates of planting included February 1, February 9, and March 12.

The date of planting on February 1 included the following six varieties: Texas 30, Pfister 403, Mexican June, Funks G-29, Pioneer 302 and Pfister 383. The date of planting on February 9 also included these following varieties: Funks G-787W, Funks G-711, Funks-G-73, Pioneer 301C, Pioneer 352, Pioneer 312, Pioneer 917, Pfister 488, and Kingscroft.

The harvest data was taken the first of August and the results worked out. There was an extreme difference in yield between replications. This was due to very uneven growth and a very uneven yield. It appeared, from observation, that the amount of cut and fill necessary to make the land level may have caused this unevenness in growth. Soil samples were taken of the area but showed no difference between replications. Included in this report are the sheets for the variety and date of planting tests.

FIELD CORN VARIETY AND FERTILIZER TEST
COOPERATOR PETE CARSTENS
YUMA VALLEY
JULY, 1955

These tests were conducted by the Yuma County Agricultural Extension Service in cooperation with Pete Carstens in the Yuma Valley.

These tests were conducted to determine the best varieties of corn for this area for grain and silage. Rates of nitrogen, some sources of nitrogen, and one treatment of phosphate was applied.

VARIETIES:

Some of the varieties selected for this test were based on best yielding varieties from tests in the Palo Verde Valley in 1954.

The corn varieties used in this test included Pfister 488, Mexican June, Funks 787W, Pfister 721, Pioneer 9178, Texas 30, Funks 711, Funks 733, Pioneer 302, Pioneer 312, Pioneer 301C, Pfister 383, Michigan 250, ASE 210, Pfister 403, Pioneer 352, Funks G-29, Kingcrost & Osborn 419.

The size of each variety and fertilizer treatment was 4-rows wide, 100 Ft. long. Varieties were replicated 4 times and randomized. The middle rows of each variety of 40 rows were used as data rows. The rows are 40 inches wide.

SOIL TYPE: Heavy loam soil

CROP HISTORY: 1954 - Cantaloupe

DATE OF PLANTING: February 23, 1955.

CULTURAL PRACTICES:

The soil was prepared in about the same manner as for planting cotton. The land was disked, chiseled, floated, furrowed up, irrigated, harrowed and planted. The seed was planted in the mulch, 2½ inches deep. Each variety of corn checked as to uniform spacing before actual planting. The seeds of corn was planted as near a six inch spacing in the row as possible.

CULTIVATIONS: Two

IRRIGATIONS:

February 6 (Preirrigation)	June 3	July 1
March 26	June 12	July 10
April 29	June 21	
May 26	June 30	

FERTILIZATION:

Corn was sidedressed with 200# of actual nitrogen in the form of ammonium nitrate. The fertilizer was applied when the corn was 6 to 8 inches tall.

INSECT CONTROL:

It wasn't necessary to control any harmful insects in this crop. There were some corn ear worms present. During the latter stage of maturity some

damage was noted from mites.

HARVESTING:

It is hoped that most of this crop will be harvested with experimental machines.

CORN PRODUCTION FIGURES FOR GRAIN

LAND PREPARATION

Disking (2)	\$3.00
Chiseling	3.00
Floating	.50
Borders	.25
Floating	.50
Beds	2.50
Harrowings (2)	1.00
Planting	1.50
Sidedressing	1.00
Cultivations (2)	2.00

MATERIALS

Seed	4.20
Water & Irrigation Labor	16.00
Fertilizer 200# Actual N.	30.00
Weed control	1.50

HARVESTING

Estimate with machinery 15.00

TOTALS \$81.95

Many of the varieties tested this year yielded 100 bushels per acre. Mr. Carsten's has been offered \$60.00 per ton or \$1.68 per bushel at his ranch for No. 1 shelled corn. With this price and the above costs of production, it appears this crop can be profitable. It is acknowledged that harvesting machinery isn't in our area at this time, however, equipment has been designed and can be made available so that the crop can be harvested for \$15.00 or less per acre if the crop becomes established in this area.

TABLE III
 CORN VARIETY TEST
 PETE CARSTENS, FEB. PLANTING

VARIETY	BU/ACRE *	MOISTURE PERCENT- AGE AT HARVEST	MATURITY RANGE
Funks 787W	110	28.	Late
Texas 30	106	28.2	Medium
Pfisters 383	103	17.7	Early
Pioneer 302	102	21.2	Early
Pioneer 352	100	16.	Early
Pioneer 312	97.5	17.7	Early
Pfisters 488	96.7	26.3	Early
Pioneer 301C	95.5	21.3	Early
Funks 711	93.	27.2	Medium
Funks G-29	92.5	21.7	Early
Pioneer 9178	87.7	25.6	Early
Funks 733	85.	31.1	Late
Michigan 250	77.3	16.8	Early
Pfister 721	73.1	28.2	Medium
Osborn 419	68.8	13.6	Early
Mexican June	67.4	29.2	Late
Pfister 403	65.5	24.0	Early
ASE 510	58.3	19.	Early

*Calculated to a moisture content of 12%.

FORAGE YIELDS FROM PETE CARSTEN'S
CORN VARIETY PLOTS

PROCEDURE:

1. The first cutting was made on July 7-8 and the second on July 15-16. All cuttings were made by hand. The object was to determine gain or loss of weight in eight days.
2. Fifty feet of row was cut and weighed from each of the four replicates except on the second cuttings where yields were not taken from Mich 250 and ASE 510 due to insufficient number of plants.
3. Ten ears were weighed from each replicate to determine percent of ear in total weight. Total ear counts were made in the same plot when grain yields were taken.
4. Each lot of ten ears was graded by the following scale for maturity:
 1. Milk Stage (ideal roasting ear)
 2. Soft dough
 3. Hard dough
 4. Slight dent
 5. Hard dent
 6. Glazed
5. A stalk count was made on the last two replicates cut on July 16. They were averaged and the results are given in the last column of the table that follows:
6. The method of checking forage yields (cutting and weighing 50 ft. of row) was checked by sampling a field being cut commercially. According to this check the yield from the above method was 9% higher than the commercial yields.

SILAGE RESULTS, PETE CARSTEN'S RANCH
JULY, 1955

TABLE I

Variety	Tons per Acre	Matu- rity	Tons per acre	Matu- rity	Per cent weight loss	Stalk count in 50 ft.
Date:	7/8	7/8	7/16	7/16	7/8-7/16	
Pfister 488	45.7	3 3/4	32.2	4 1/2	29.4	130
Mex. June	44.7	1	40.9	3 3/4	8.5	82
Funks 787W	39.7	2	30.3	3 3/4	23.8	97
Pfister 721	37.5	3	33.9	4	9.5	81
Pioneer 9178	34.7	3 3/4	26.8	4 3/4	22.7	91
Texas 30	34.6	3 1/4	31.6	4 3/4	8.8	86
Funks 711	33.8	2 1/2	30.4	4 1/2	10.1	85
Funks 733	33.4	1 1/2	32.6	4	2.4	86
Pioneer 302	31.2	3 3/4	24.6	4 3/4	21.1	100
Pioneer 301C	29.8	3 3/4	18.9	5 1/4	36.6	83
Pioneer 312	31.1	4	20.7	5	33.8	90
Mich 250	26.7	4 1/4	No cutting on 7/16			
A.S.E. 510	26.1	4 3/4	" "	" "		
Pfister 403	22.4	4	20.9	5 1/2	6.4	100
Pioneer 352	22.1	5	13.9	5 3/4	37.1	92
Funks G-29	21.8	4 1/2	13.8	5 3/4	36.8	90
Kingscraft	21.2	5	15.5	5 3/4	26.7	84
Osborn 419	16.8	5	12.0	6	28.9	86
Pfister 383	27.4	4	19.5	4 3/4	28.8	82

NOTES:

MATURITY SCALE = ranges from 1-6

- | | |
|------------------------------------|----------------|
| 1= Milk stage (ideal roasting ear) | 4= Slight dent |
| 2= Soft dough | 5= Hard dent |
| 3= Hard dough | 6= Glazed |

Maturity figures with fractions are due to the grading of replicates that were averaged to arrive at this figure. A variety was considered most desirable for silage when near the (4) or slight dent stage.

ADJUSTED SILAGE YIELDS, PETE CARSTENS RANCH
JULY, 1955

By considering the most desirable stage for each variety from the July 7 and July 15 cuttings, it was possible to produce the following table.

The weight given is the weight of the particular variety when cut at the most desirable stage (slight dent) for ensiling, except in the case noted.

TABLE II

Variety	Tons per Acre	Approx. Stalk Height	Stalk Count Per Acre
Pfister 488	45.7	13-14 ft.	34,211
Mexican June	40.9	15-16	21,579
Pfister 721	37.5	12'	21,316
Pioneer 9178	34.7	12-13	23,947
Texas 30	34.6	13'	22,631
Funk 711	33.8	11-12	22,372
Funk 733	32.6	12'	22,631
Pioneer 302	31.2	8-9	26,316
Pioneer 312	31.1	12'	23,684
Funk 787W	30.3	10-11	25,527
Pioneer 301C	29.8	12'	21,842
Pfister 383	27.4	10'	21,579
Pfister 403	22.4	8'	26,316
Pioneer 352	22.1*	10'	24,210
Funk G-29	21.8*	9'	23,684
Kingscraft	21.2*	9-10'	22,105
Osborn 419	16.9*	9'	22,631

*For best silage should have been cut at least 1 week before July 7.

BILL BECK FIELD CORN VARIETY TEST
PLANTED FEBRUARY 17, 1955

This land was previously planted to barley and then it was fallow for about six months before being prepared for corn. Prior to the barley, it grew a crop of cotton. The soil is a silty clay loam.

After being fallow, the land was watered, then disked and left to dry. It was then disked again and 90 pounds of actual phosphate in the form of treble super phosphate was applied. The land was then listed and pre-irrigated on January 10th.

The seed bed was prepared by harrowing twice. The variety test was planted February 17th.

The crop was injected with 150 pounds of anhydrous ammonia (123 pounds actual nitrogen) prior to the first irrigation.

The crop was cultivated following the first irrigation and 133 pounds of anhydrous ammonia (109 pounds of actual N) was again injected.

Following the second irrigation after planting the corn was furrowed out and hand weeded. By this time, the corn was shoulder high.

There were eight irrigations in all with the last one July 1.

The cost of production on this crop is estimated at \$75.20 per acre, not including harvesting, rent or interest.

Plots in this test were 620 ft. long and 4 rows wide. Plots were replicated 4 times. Yields were as follows:

Variety	Yield in bushels per acre
Pfisters 383	117.0
Funks G-29	116.8
Pioneer 302	109.0
Pfisters 403	103.2
Pioneer 352	90.7

Mr. Beck planted approximately 10 acres of each of these varieties in the remainder of his field.

J. F. Barkley Corn Silage Yields

This test was conducted by Mr. Barkley who gave the information to the Extension Service.

<u>Variety</u>	<u>Tons/Acre</u>
G-50	17.92
G-77	15.29
Pioneer 302	18.31
G-29	15.08
Pfister 403	17.02
Texas 30	21.24
Pfister 383	16.13
Mex. June	21.38

Mexican June was harvested in the milk stage and Texas 30 was harvested slightly premature for silage, therefore, the above yields of these two varieties will have to be discounted slightly. These earlier stages have a high moisture content without the desirable maturity of grain.

The corn in this test was planted March 2, 1955. It was planted at the rate of 15 pounds per acre with about a 6 inch spacing of seed in the row.

Irrigations were as follows:

Pre-irrigation - February 10

Other irrigation dates were as follows:

April 5	May 30
April 28	June 6
May 12	June 16
May 21	June 24

The previous crop was sorghum. The land was disked, subsoiled, disked floated and listed in 40 inch beds prior to the preplanting irrigation. The seed bed was prepared by harrowing. After planting the field was ring rolled.

The fertilizer program consisted of injecting 125 pounds of anhydrous ammonia (102.5 pounds of actual N) per acre just prior to the pre-irrigation. In addition 100 pounds of 16-20-0 was banded 5 inches under the seed just prior to planting.

The only insect problem considered damaging was spider mites which undoubtedly reduced the yield. Dusting sulfur was applied at the rate of 49 pounds per acre with no control resulting.

The crop was harvested for silage July 4 and 5.

YIELDS FROM FRANK BATLEY'S
 DATE OF PLANTING CORN TRIALS

Corn Planted February 1, 1955
 Corn Handpicked on August 4, 1955
 Samples for moisture testing purposes were taken August 16, 1955
 Moisture tests run on August 18, 1955

Corn weights from one 38" row 65.5 ft. long

	Average Moisture	Avg. Yield from .00467 acre (1-38" row x65.5')	Difference in Moisture adjusted to 10% moisture	Yield Per Acre Adjusted to 10% Moisture
Texas 30	22.0	22#	12.0	61.8
Pfister 403	13.6	20#	3.6	56.3
Mexican June	22.7	13#	12.7	32.0
Funk g-29	11.3	18#	1.3	49.0
Pioneer 302	17.6	25#	7.6	67.4
Pfister 383	15.9	17#	5.9	46.6

The above information is average from five replications.

See sheet C for data from each replicate.

MOISTURE READING FRANK BATLEY'S - FEBRUARY 1, DATE OF PLANTING

	Rep. I	Rep. II	Rep. III	Rep. IV	Rep. V
Texas 30	21.72	20.80	22.31	20.91	24.32
Pfister 403	10.67	14.95	14.56	16.53	11.30
Mexican June	24.00	22.66	22.73	24.91.	19.48
Funk G-29	9.98	11.44	11.70	12.09	11.70
Pioneer 302	20.25	14.17	20.80	16.85	15.86
Pfister 383	10.53	24.07	13.26	13.13	18.53

B - MOISTURE BATLEY RANCH
 February 1, date of planting

	<u>Total</u>	<u>Average moisture</u>
Texas 30	110.0	22.0
Pfister 403	68.1	13.6
Mexican June	113.8	22.7
Funk G-29	56.8	11.3
Pioneer 302	88.10	17.6
Pfister 383	79.50	15.9

DATE OF PLANTING TEST
 Frank Batley 's Ranch

February 1, date of planting •
 These yields and counts from 65.4 ft. of one row:
 Stalk Count, ear count, ear weight taken Aug. 4, 1955

	Rep. I	Rep. II	Rep. III	Rep. IV	Rep. V	Average
Ear Weight						
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Sheet D

	Average Moisture	Yield from 1/200 of acre (1-38" row x 68.9)	Difference in Moisture Adjusted to 10%	Yield per acre adjusted 10% moisture
Funk G-29	10.3	18#	.3%	48.4 bu.
Funk G 787W	10.6	15#	.6%	41.4 bu.
Funk 711	18.6	20#	8.6%	50.8 bu.
Funk 733	18.9	16#	8.9%	40.5 bu.
Pioneer 302	11.2	26#	1.2%	71.4 bu.
Pioneer 301C	10.3	23#	.3%	63.7 bu.
Pioneer 352	10.8	23#	.8%	63.4 bu.
Pioneer 312	10.8	25#	.8%	68.9 bu.
Pioneer 9178	12.3	23#	2.3%	62.4 bu.
Pfister 403	10.6	21#	.6%	58.0 bu.
Pfister 383	10.5	28#	.5%	77.4 bu.
Texas 30	14.2	20#	4.2%	53.2 bu.
Mexican June	17.1	19#	7.1%	49.0 bu.
Pfister 488	12.6	16#	2.8%	43.2 bu.
Kingscroft	10.2	20#	.2%	55.4 bu.

The above information is average of four replications.

See Sheet F for data from each replicate.

Annual Narrative Report
 Yuma County - 1954-55
 Ray Weick, Acting County Agent
 Paul E. Lineberry, Assistant County Agent
 Ernest A. Foster, Assistant County Agent

MOISTURE READING FRANK BATTLE'S * FEBRUARY 9, DATE OF PLANTING

	Rep. I	Rep. II	Rep. III	Rep.
Funk G-29	9.90	11.44	10.37	9.57
Funk G 787W	18.42	10.53	14.95	no co
Funk 711	19.28	17.76	21.44	15.99
Funk 733	17.99	14.56	23.10	20.13
Pioneer 302	13.00	10.67	11.19	9.98
Pioneer 301C	10.67	10.06	9.98	10.67
Pioneer 352	11.30	10.53	10.14	11.19
Pioneer 312	10.29	10.80	11.30	10.80
Pioneer 9178	11.57	14.17	9.98	13.39
Pfister 403	11.19	9.90	10.21	11.05
Pfister 383	10.53	10.21	10.93	10.29
Texas 30	16.63	17.07	11.57	11.70
Mexican June	16.53	14.69	18.88	18.53
Pfister 488	10.67	11.30	15.34	14.17
Kingscroft	9.73	10.29	9.90	11.05

FEBRUARY 9, VARIETY TEST, FRANK BATTLE

	Total	Average Moisture
Funk G-29	41.30	10.3
Funk E 787W	43.90	10.6
Funk 711	47.50	18.6
Pioneer 302	75.80	18.9
Pioneer 301C	44.90	11.2
Pioneer 352	43.10	10.8
Pioneer 312	49.20	10.8
Pioneer 917B	42.40	12.3
Pfister 402	41.90	Pfister 403
Pfister 383	56.90	10.6
Texas 30	41.90	10.5
Mexican June	56.90	14.2
Pfister 488	68.60	17.1
Kingscroft	51.50	12.8
	40.90	10.2

Annual Narrative Report
 Yuma County - 1954-55
 Ray Weick, Acting County Agent
 Paul E. Lineberry, Assistant County Agent
 Ernest A. Foster, Assistant County Agent

These Yields from 68.9 ft of row
 Stalk Count, Ear Count and Ear Weight taken August 15 and 16, 1954

Sheet F

	Ear Weight	Ear Count	Stalk Count	Ear Weight	Ear Count	Stalk Count	Ear Weight	Ear Count	Stalk Count	Ear Weight	Ear Count	Stalk Count	Average
Funk G-29	25	80	103	29	92	103	17	88	98	1	12	96	18-63-100
Funk 787W	23	45	63	19	54	83	19	56	80	1	1	64	15-29-72
Funk F 711	35	61	105	39	78	78	3	17	81	5	34	95	20-47-89
Funk G 733	27	61	92	18	66	88	17	64	77	2	14	78	16-51-121
Pioneer 302	41	105	135	34	116	123	21	102	112	10	70	115	26-98-121
Pioneer 301C	46	106	134	30	87	112	5	49	102	10	56	86	23-69-108
Pioneer 352	34	88	99	36	97	105	7	62	89	16	84	81	23-90-117
Pioneer 312	40	106	127	25	90	118	23	95	116	14	69	108	25-90-117
Pioneer 9178	33	98	110	27	90	126	21	91	111	13	64	94	23-86-108
Kingscroft	29	77	81	26	85	102	18	90	106	8	59	83	20-78-93
Pfister 403	37	97	150	23	70	83	13	75	109	10	62	109	21-76-112
Pfister 488	19	90	161	20	91	132	12	84	123	15	73	127	16-84-136
Pfister 383	40	122	129	38	110	113	14	98	130	20	80	106	28-202-119
Mexican June	29	75	109	25	62	94	11	38	83	14	49	88	19-56-93
Texas 30	24	71	87	21	69	90	23	81	82	12	58	81	20-69-85

See Sheet C for further information

Annual Narrative Report
Yuma County - 1954-55
Ray Weick, Acting County Agent
Paul E. Lineberry, Assistant County Agent
Ernest A. Foster, Assistant County Agent

Sheet G

Corn planted March 12, 1955
Corn handpicked on August 4, 1955
Samples for moisture testing purposes were taken August 16
Moisture tests were run on August 18, 1955

Corn weights are from one 38" row, 65.5 ft. long

	Average Moisture	Avg. Yield from .00476 acre (1-38" row x 65.5')	Difference in moisture adjusted to 10% mst.	Yield per acre adjusted to 10% moisture
Texas 30	23.2	25#	13.2	63.3
Pfister 403	15.2	26#	5.2	65.9
Mexican June	23.9	12#	13.9	35.6
Funk G-29	12.6	19#	2.6	53.9
Pioneer 302	19.3	28#	9.30	74.1
Pfister 383	15.1	27#	5.1	74.7

The above information is average from four replications.

See sheet I for data from each replicate

MOISTURE FROM FRANK BATLEY'S
 MARCH 12 DATE OF PLANTING

B. & C Moisture from corn pulled from
 Stalks on August 16, 1955

	Rep. I	Rep. II	Rep. III	Rep. IV	Rep. V
Texas 30	22.85	21.82	23.64	24.00	23.70
Pfister 403	13.91	15.47	16.12	16.40	14.17
Mexican June	23.52	23.52	23.52	25.26	23.70
Funk G-29	11.44	11.96	14.69	10.37	14.43
Pioneer 302	21.02	17.46	16.85	23.45	17.67
Pfister 383	17.76	13.39	11.05	17.07	16.26

MOISTURE FROM FRANK BATLEY'S
 MARCH 12 PLANTING

	<u>Total</u>	<u>Average Moisture</u>
Texas 30	116.2	23.2
Pfister 403	76.1	15.2
Mexican June	119.5	23.9
Funk G-29	62.9	12.6
Pioneer 302	96.6	19.3
Pfister 383	75.6	15.1

DATE OF PLANTING TEST

Sheet I

Frank Batley Ranch

Date of Planting - Mar. 12

These yields from 64.5 ft of row
 Stalk Count, ear count, ear weight taken August 4, 1955

	Ear Weight	Ear Count	Stalk Count	Ear Weight	Ear Count	Stalk Count	Ear Weight	Ear Count	Stalk Count	Ear Weight	Ear Count	Stalk Count	Ear Weight	Ear Count	Stalk Count	Average
Texas 30	35	76	92	18	54	94	28	64	65	22	55	92	25	71	93	25-64-87
Pfister 403	31	79	80	21	75	90	35	95	101	19	70	110	25	90	87	26-82-93
Mexican June	12	21	96	7	16	83	16	35	91	9	20	91	9	20	99	12-22-88
Funk G-29	23	74	80	15	57	95	26	79	71	18	59	71	18	69	92	19-67-82
Pioneer 302	32	80	105	25	52	67	33	70	110	30	73	110	30	82	96	28-71-92
Pfister	32	77	92	24	85	99	29	75	96	30	83	96	30	86	97	27-81-93

See Sheet C for further information.

Corn Harvest

A field day was conducted by Assistant Agent Bramhall to enable those interested to observe the operation of a picker sheller on the Pete Carstens and Bell Beck Ranches. Ted Welchert, Extension Engineer from the University of Arizona, talked on different corn pickers, field losses, moisture content of corn at the most desirable picking stage and custom rates. The picker sheller field losses, according to Welchert's test, ranged from 30 to 50 per cent on Pete Carstens field and to as high as 20% on Bill Beck's. The reason for these losses was due to the amount of corn stalks that had lodged, therefore making it very difficult for the corn picker to do a good job of picking the corn to the ground.

The conclusion that most everyone had arrived at was that the corn had been irrigated too near the date of maturity causing the corn stalk to rot at the base prematurely and, as a result, 25% to 75% of the corn stalk had lodged. In order to correct this matter of stalk lodging, more work should perhaps be planned to determine the proper stage of corn maturity by varieties and when the last irrigation should be made as well as how soon harvesting should begin.

In order for Pete Carstens and Bill Beck to get their corn harvested, it was necessary for them to have the corn picked by hand. Therefore, their cost of harvesting by hand picking was estimated at between \$20.00 and \$25.00 per acre.

Another grower in the Yuma Valley, Elgy Kryger, grew 100 acres of corn. This corn was originally planted to be sold as silage but later on it was decided to harvest the grain. Mr. Kryger purchased a one-row corn snaper. But, by the time he began to harvest his corn, much of it had gone down making it result in field losses as high as the picker sheller losses. However, Mr. Kreyger stated that if he has started in the field earlier with the machine, he felt that it would do a very satisfactory job.

Pete Carstens, after picking his corn by hand and piling it into small fields, thrashed the corn with a combine. The combine was driven into the field and from pile to pile. The corn was forked into the machine and thrashed. According to Mr. Carstens, it did a very satisfactory job of shelling.

Mr. Beck hauled his corn to his farm and shelled it with a regular corn sheller.

One of the important problems facing the Extension at this time is to encourage more farmers to plant corn. This is rather difficult. Neither of the men mentioned had sold much of their corn. The main problem being that corn is sold at a higher price than barley. And since there is plenty of barley produced in the area, cattle feeders are using barley for their main concentrate rather than corn.

Summing up the Experimental work that has been done in Yuma County one can say that we can produce from eighty to one hundred bushels of corn per acre without too much trouble. This corn should be planted early, preferably around the first two weeks of February. We need to be more careful with the last irrigation, particularly with reference to harvesting by machine and also cutting for silage. With the high labor cost here, machine picking must be done before corn can be produced economically.

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Another problem is the hesitancy of cattle feeders, here in the area, to buy the corn which has been produced. It is not profitable to ship the corn to the west coast for sale, particularly at the yields we are getting at the present.

Corn undoubtedly has a place as far as production of silage is concerned here in this area. However, with barley yields running from 4,000 to 4,500 pounds and corn yields running slightly higher - assuming that the feed value of grain barley and corn grain is approximately the same, we can produce a little more TDN per acre by growing corn than we can by growing barley. However, it requires more fertilizer and does not fit in to the crop rotation system as well as does barley. But, if we can increase the grain yields to 125 bushels or better, then there is no doubt that corn would be a very satisfactory crop for the area.

Insect damage to corn planted in the Spring was very slight this year. The tests on Pete Carstens land did not receive any insecticide treatments at all and no damage was done. As far as ear worm damage is concerned, a few of the ears were poorly pollinated on one side of the ear, indicating that some of the silks had been cut by an ear worm. However, there was very little of this and it did not effect the quality of the corn.

CASTOR BEANS

There was very little interest in planting castor beans in Yuma County during 1955 due to the 6¢ per pound contract price. Three or four Yuma County growers did plant acreages of castor beans. At least one of these fields is known to be a failure due to poor cultural practices. It is well known that castor beans can be successfully grown in Yuma County; however, the 6¢ per pound is not inducive to growing castor beans. If threshers were available in the area, it would be possible to make a small profit with castor beans at this price. In order to determine the position of castor beans with respect to other summer crops, castor beans were included in the summer crop economic test on the Freg Gregg ranch in the Wellton Mohawk area. The beans were planted June 29th and have not been harvested at the writing at this report. However, from observation, one very outstanding fact is evident - that the beans, while they will grow well, the particular beans on the Fred Gregg Ranch have a tendency ripen unevenly. That is - the beans at the lower part of the plant may be dry and ready for picking, while there may still be blooms at the top of the plant. Also, the beans at the lower part of the plant have a tendency to fall off.

BERMUDA

Extension Agents did very little with Bermuda seed production since most all of the Bermuda growers have been in the business for sometime. There were, however, a few inquiries from newer growers. These inquiries concerned thrip control and fertilization. According to Dr. Don Tuttle, 5% malathion has a longer residual effect and is more effective than parathion on thrips. Local extension agents, therefore, recommended this alternate material. Bermuda harvest began in early July. Harvesting progressed slowly, due to the rainy conditions. A number of farmers reported excellent yields of seed where harvesting proceeded satisfactorily.

GREEN MANURE CROPS

During the summer months, the Extension Service made recommendations with regard to the planting of hemp or sesbania. Principal questions involved planting rates, dates of planting and irrigation and disking under.

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Papago peas had been recommended for a winter green manure crop, particularly for cotton production. Although papago peas can be very valuable on root rot land for cotton production, most growers are avoiding this land with reduced cotton acreage.

SOYBEANS

An undetermined number of farmers in Yuma County grew soybeans in 1955. Neither is it known what was the total acreage grown in the county. However, due to the disappointing yields this year, it is very doubtful that there will be too many acres of soybeans planted next year.

Yields ranged from as low as 400 lbs. per acre up to 1500 lbs. per acre. In general most of the yields run around 20 to 22 bushels per acre. However, these very few were disappointing compared to the quoted yields of the Salt River area.

During the growing season, the beans looked very well. But in no cases did the Assistant Agent notice or find any field with good inoculation. Many of the growers were disappointed in the delay of the beans to make a set and this, in turn, reflected itself in their indecision to add more money to the crop, since it seemed to be a poor yield. Many of the men had woolly worm infestation along with stink bugs in their beans. However, the woolly worms, in general, did not get into the fields until after the pods were formed and not too much damage was done by these woolly worms. However, the damage done by stink bugs is not known.

George Abel, Agronomist from the Southwest Field Station at Brawley, California, assisted the County Agent in presenting a television program on soybeans in June. This program was presented to assist soybean growers. Information was also relayed to growers by newspaper and radio.

Soybeans were also included in the Summer economic test which was put out on the Fred Gregg Ranch in the Wellton Mohawk area. The soybeans were planted in eight row plots replicated four times and randomized. The beans were planted in a moist seed bed at 38 inch rows with a cotton planter. Each row was approximately 1300 feet long. The entire field devoted to the test received 200 lbs. of ammonium phosphate applied broadcast and no other fertilizer was applied to the beans. However they appeared to be quite green throughout the entire growing period. Yet, very poor inoculation was observed.

The beans were inoculated just before planting and every attempt was made to keep the inoculant cool before applying. The beans were planted at the rate of 36 lbs. per acre with a cotton planter. Yields ranged from 1100 pounds per acre to 1700 lbs. per acre on different replicates. The average yield off of the test was 1483 pounds per acre. The variety of beans used was the Lee variety. Included in this report is a summary of the soybean part of the Summer Crop Economic Test.

There is unquestionably a lot of work that needs to be done on soybean production. According to George Abel, new variety will help increase the yields, possibly by 100 per cent. This should be a very important stride to making a soybean crop for the Southwest.

SUMMER CROP ECONOMIC SURVEY RESULTS

Texas Hill Ranch - Fred Gregg, Cooperator

1. Soybeans Planted June 28, 1955. Harvested November 9, 1955
2. Size of Plot: 4 Rows - 38" x 1300' (.38 Acre) - Plots in each replicate indicated by a, b, c, d.
3. How Harvested: Combine Direct
4. Planting Rate: 36.3# per acre

Rep 1		Rep 2		Rep 3				Rep 4	
A	b	a	b	a	b	c	d	a	b
450#	450#	650#	510#	520#	540#	510#	620#	670#	
Approximate yield in pounds per acre as follows:									
1184.2#	1184.2#	1710.7#	1342.1#	1368.4#	1421#	1342.1#	1631.5#	1763.1#	

Average yield in lbs. per acre: 1438.5

PEANUTS

Peanut Fertilizer Test

Assistant Agent Bramhall was responsible for a peanut fertilizer test with Frank Cochrane, located on the Yuma Mesa. The test was started with the purpose of finding out some sound basis for fertilizer recommendations.

The fertilizer test consisted of five treatments. The treatments were four rows wide and 100 feet long, replicated four times and randomized. The test included treatments with the following rates per acre of nitrogen; phosphate, and potash: 50 lbs. of actual ammonium sulphate nitrogen plus 50 lbs. of actual phosphate; 50 lbs. of actual ammonium sulphate nitrogen plus 50 lbs. of phosphate plus 50 lbs. of actual potash. The rates of nitrogen were applied by side dressing equipment at monthly intervals of 25 lbs. per acre. The 50 lb. rates were applied in two 25 lb. rates one month apart and the 75 lb. rate was applied in three applications. The phosphate and potash was put on with the first application.

The test was harvested on December 7th. While the results have not been statistically analyzed, it appears that there is no significant difference between yields. In fact, if anything, the check plot which received no treatment has the highest average yield. Yields per acre varied from 1689 lbs. per acre to 2069 lbs. per acre. These figures are the average of the four replications.

This is the second fertilizer test which has been conducted on the Yuma Mesa. The first was conducted with Hugh Johnston, in 1954. That particular test included nitrogen, potash and phosphate rates. And again there was no significant difference in yields from any of the plots. This was not a good crop of peanuts, however, and there is, unquestionably, information that should be obtained on the fertilization of peanuts. There is no experimental data available on their fertilization. There has been some preliminary research work done by the U. S. D. A. but there still needs to be further work to base recommendations on. In 1955 the peanut acreage in Yuma County totaled 560 acres, with 475 acres of this on the Yuma Mesa. The remainder is in the Parker area.

Included in the pages of this report is a sheet with the results of the Frank Cochrane peanut fertilizer test.

RESULTS OF FRANK COCHRANE PEANUT FERTILIZER TEST
 Harvested December 7, 1955

Yield in pounds per plot (4 rows x 100 feet)

<u>Treatment</u>	<u>R1</u>	<u>R2</u>	<u>R3</u>	<u>R4</u>	<u>Average</u>	<u>Average Yield in lbs. per acre</u>
2	57	35	56	48	49	1689
3	52	58	70	38	54	1861
4	46	74	46	39	51	1758
5	41	66	65	48	55	1896
6	69	64	38	73	60	2069

Treatment 2= 50# N (2 appl.) June 9, July 20
 3= 75# N (3 appl.) June 9, July 20, Sept. 5
 4= 40# N (2 appl.) + 50# P₂O₅ (P₂O₅ applied June 9
 one application)
 5= 50# N (2 appl.) + 50# P₂O₅ + 50# K₂O
 (P₂O₅ + K₂O applied June 9)
 6= Checkplot

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Sudan Grass

A considerable acreage of Sudan Grass has been planted for seed in the Wellton Mohawk area. However, in general, yields have been very disappointing. At the present time Sudan Grass seed is selling for about 5¢ per pound and with yields of 1,000 to 12000 lbs. per acre, it certainly is not an economical crop.

Again, the main trouble in harvesting of Sudan Grass is the uneven ripening of the seed. Also Sudan Grass shatters quite badly when it is being handled by machinery.

Sudan Grass was also included in the Summer Crop Economic Survey Test, which was planted on the Fred Gregg Ranch. The Sudan Grass was planted in 38" rows, approximately 1300 feet long and replicated four times. The only fertilizer it received was the same as the remainder of the crops in the test; 200 lbs. of ammonium phosphate applied broadcast.

Two seeding rates were used: 1, using cotton seed plates in a cotton planter put on 28 lbs. of seed per acre. 2, the other, using sorghum plates, put on six pounds per acre. The Sudan Grass was harvested November 10, 1955. The test plots were mowed with a regular alfalfa mower. An attempt was made to use an alfalfa seed roller on the mower to put the Sudan Grass in some type of windrow. However, due to the rank growth, it was impossible to use the roller. So the Sudan Grass was mowed, left on the ground for about ten days to cure. Since it was very difficult to get anything to put the Sudan Grass in to windrow out excessive shattering, 100 feet of each one of the replicates were turned into windrow with pitchforks. Then, that 100 feet was combined. Yields ranged from 600 and 98 pounds per acre to 1448 pounds per acre. By averaging the replicates and the two seeding rates, it appeared that the smaller seeding rate, of 6 lbs. per acre, was the most economical. It produced 1482 per acre, while the seeding rate of 28.6 lbs. per acre produced 1028 lbs. per acre. These yields have not been statistically analyzed at this time and it is not known whether this is a sufficient difference.

Included in the pages of this report is a brief outline of the results of the Sudan Grass test.

SUMMER CROP ECONOMIC SURVEY RESULTS

Texas Hill Ranch - Fred Gregg, Cooperator

1. Sudan Grass planted June 28, 1955. Harvested November 10, 1955
2. Size of Plot: 4 rows 38" x 100' (.029) acre
3. How Harvested: Combine from Windrow
4. Planting Rate: (a) With sorghum plates 6# per acre
(b) With Cotton plates 28.6 # per acre

	Rep 1		Rep 2		Rep 3		Rep 4	
	a	b	a	b	a	b	a	b
411#	39#	41#	30#	48#	20#	42#	30#	
1413#	1344#	1413#	1034#	1655#	698#	1448#	1034#	

Approximate yield in pounds per acre as follows:

Average Yield in pounds per acre:

- (a) With Sorghum plates - 1482#
- (b) With Cotton Plates - 1025#

STAR MILLET

Star Millet yields in Yuma County this year have been one of the bright spots as far as economics are concerned. With the price at 8¢ a pound and the yields varying from 1,000 to 2,000 pounds per acre, it has been a profitable crop. However, the yields appeared to vary according to whether the farmers used certain planting methods. The row planted fields have been running at approximately 1,000 to 1200 pounds per acre. This has been reported by a grower in the Yuma Valley who planted approximately 260 acres. A Yuma Mesa grower, however, reported an average of 1600 pounds per acre using a grain drill. This yield is probably the highest average that has been reported in the area. There is no doubt that Star Millet will be one of the better crops next year.

One of the problems faced by farmers as they begin harvesting their Star Millet is the uneven height of the heads. This necessitated taking quite a bit of the material into the combine to get all of the heads.

One custom operator who had good luck in combining his Star Millet, reported that he removed every other slat from the reel then he extended the reel arm, which in effect, gave a larger reel. He also added an eight inch extension onto the cutter bar which gave him a larger floor of the header. This prevented many heads from falling to the ground as they were cut.

At the beginning of Star Millet harvest, many operators were cutting 2½ to 3 feet from the ground. Later, after a severe windstorm, many heads broke and bent over which necessitated the operator to take a larger amount of material into the combine. Many operators were mowing the Star Millet, in effect, to prevent loss of the head. Another operator removed the reel from his combine and mowed the Star Millet very close to the ground. This requires taking quite a bit of the material into the Combine but reduces head field losses.

Successful Star Millet harvesting also requires a little higher cylinder speed than is used for barley.

OTHER FIELD CROPS GROWN IN YUMA COUNTY

Other field crops grown in Yuma County were Papago peas, black eyed peas, and pinto beans.

A field of black eyed peas was planted on the Yuma Mesa but is not know at this time what the results were. A field of pinto beans were grown in the Yuma Valley by Mr. Keahl. It is understood that fairly respectable yields were obtained. However, little information has been obtained by the Extension Service.

Papago peas are also being planted by a few Yuma Mesa Farmers for seed production. The yield, coupled with the price, makes them a good crop for the Yuma Mesa.

SUMMER CROP ECONOMIC SURVEY

At a meeting June 3rd of the Research and Extension Planning Committee of the Wellton Mohawk Water users district, a summer crop economic test was planned. This test included Sudan Grass, Soybeans, Castor Beans and Star Millet. Fred Gregg, of the Texas Hill Ranch, volunteered as farmer cooperater and offered 20 acres for the test. The purpose of the test was to make an economic comparison of the above summer crops following barley.

County Extension Agents established the test on June 28th, when crops were planted. All crops were planted in a moist seed bed in 38" rows with a cotton planter. Plots were four rows wide and 1300 feet long, except for soybeans plots which were eight rows wide. Each plot was replicated four times making a total of 16 rows of each planting except where there was insufficiency of a special variety.

Star Millet and Sudan grass were planted at varying rates to obtain rate information. All crops were grown for seed production. As a good stand was obtained with all crops, no cultivation was deemed necessary. One dusting for corn ear worms was applied on September 5, which provided good insect control. This land was planted to barley previously. The straw was mowed, raked and baled. The land was then irrigated and as soon as sufficiently dry 200 lbs. of ammonium phosphate was applied broadcast. The land was then disced and harrowed in one operation and followed by a cultipacker. It was then planted. While these results have not been statistically analyzed, here are the results of the sorghum, soybeans, and sudan grass, which are the only ones that have been harvested at this time

Sorghum

- Double Dwarf Yellow Sooner - Planted 7.4 pounds of seed per acre.
Average Yield - 3,171 pounds per acre.
- Double Dwarf 38 - Planted 9.5 pounds of seed per acre.
Average Yield - 2,921 pounds per acre.

Soybeans

- Planted 36.3 pounds per acre.
Average Yield from four replicates - 1,438
pounds per acre (approx. 24 bu. per acre)
Highest Yield from a 1/3 acre plot - 29 bu./acre/

Sudan Grass

- Planted 6 lbs. per acre. (Sorghum Plates)
Planted 28.6 lbs. per acre. (Cotton Plates)
Average for 6 lb. rate - 1,482 lbs. per acre.
Average for 28.6 lb. rate - 1,025 lbs. per acre.

Gross Income

- DD yellow Sooner - 3,171 lbs at 2¢ = \$63.42 per acre
- DD 38 - 2,921 lbs at 2¢ = \$58.42 per acre
- Soybeans - 1,438 lbs at 4¢ = \$57.52 per acre
- Sudan Grass
- 6# rate - 1,482 lbs at 5¢ = \$74.10 per acre
- 28.6# rate - 1,025 lbs. at 5¢ = \$51.25 per acre

The Star Millet and Castor Beans yet remain to be harvested off of the plot.

Since this is the first year for a test of this sort, it must be run again before any recommendations can be based on the results.

IRRIGATION

There is considerable need for additional research on the irrigation of a number of our crops in Yuma County. Extension irrigation specialist, Pat Middleton, has been of assistance to local extension agents in presenting that information there is available on the irrigation of a number of our crops.

Irrigation data is being accumulated on the Wellton Mesa Development Farm by Leonard Erie of the U. S. D. A. This information is being followed by extension agents and will be made available to Wellton Mesa Farmers.

ENGINEERING

It is believed that the Extension Service can develop more of an engineering program with its new engineering specialist, Ted Welchert. Mr. Welchert worked closely with Extension Agents on corn harvesting and on alfalfa seed threshing in 1955. It is planned that his work should be continued in 1956.

ENTOMOLOGY

Local Extension Agents worked closely with Extension Entomologist, Dr. J. W. Roney, on the recommendations for control of the various insects on the crops in Yuma County. Dr. Don Tuttle, local research entomologist, also worked closely with local Extension Agents in presenting new findings on insect control recommendations.

Both of these men assisted Extension Agents in presenting newspaper, radio and television information on insect control.

SOIL

Extension Agents presented information on fertilization of all of the important crops in Yuma County. Tests that have been established on fertilization have been reported under respective crops.

Dr. C. O. Stanberry, Soil Scientist Agricultural Research Service for the U. S. D. A., assisted the Extension Agents on a number of questions regarding fertilization. Dr. Stanberry worked with local extension agents on TV and radio.

Extension soils specialists visited local extension agents and assisted them in some of their problems.

RURAL SOCIOLOGY

Extension Service worked very little in the field of rural sociology. Its activities were confined to working with the various organized farm groups in presenting programs of a social and educational nature. Column items have appeared on farm safety during the year.

AGRICULTURAL ECONOMICS

Extension Agents have presented outlook information to farmers through the assistance of the state extension economists. Prices of the various farm commodities have been reported through the County Agent's column from time to time. Support prices are usually reported in cooperation with the ASC.

PLANT PATHOLOGY

The Extension Plant Pathologist has been of great assistance to the Extension Agents in surveying the latest disease problems in Yuma County. The largest project undertaken in 1955 was that of cantaloupe crown blight. Details from this survey can be found under cantaloupes in this report. Television, radio, and newspapers have been used to present information on plant diseases. Extension plant pathologists assisted local Extension Agents in presenting this information.

CROP IMPROVEMENT

Yuma County undoubtedly has the most extensive crop improvement program than any county in Arizona. This is probably due to the large number of farmers, who produce certified and registered alfalfa seed. As a result, considerable work falls upon local Extension Agents. It is felt that this is an important part of the Extension Program and that Extension Agents must work closely with farmers to acquaint them with the certification program.

County Improvement Records

The County Agent's Office keeps on file records of all certified fields in Yuma County. A copy of every application is forwarded to the secretary of the Arizona Crop Improvement Association, along with necessary fees. The County Agent has revised the application cards so that an original and two carbons are used. This provides a copy for the grower, the County Agent's office, and the Arizona Crop Improvement Association.

Publicity has been given to deadline dates for applications to radio, newspapers and television. Handbooks have been given to those new growers who are unacquainted with the crop improvement regulations. At the time this handbook is given to growers, an explanation is made of the crop with which the grower is particularly concerned.

FOUNDATION SEED APPLICATIONS

Farmers in Yuma County filed their applications for foundation seed in the County Agent's office. These applications are, in turn, forwarded to the Arizona Crop Improvement Association. The County Agent has made suggestions

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to directors of the Pureseed Association, secretary of the Arizona Crop Improvement Association, and to members of the Wellton Mohawk District interested in seed certification of the subject of growing foundation seed for Yuma County.

Pure Seed Association

The Extension Agents worked very closely with the Executive Committee of the Yuma County Pureseed Association in all matters pertaining to the Arizona Crop Improvement Association, foundation seed, and over winter seed increases. The County Agent assisted in preparing a history of Yuma County Seed Increases in 1954.

This history can be found in the 1954 Annual Report. Nearly 800 acres of over winter seed increases were grown in Yuma County in 1954-55. Extension Agents were called upon to furnish advice to these out of state people who were having increases made in Yuma County. Much of this advice was given by letter, while others called at the County Agent's office.

Those who are actually growing increases in Yuma County asked more detailed questions. Frequently these inquiries are very time consuming. We felt that these increases are of sufficient importance to other states and that cooperations with universities and foundation seed stock organizations is important enough to warrant cooperation of the local Extension Agents.

This fall, the fall of 1955, approximately 514 acres of over winter seed increases have been planted in Yuma County. The bulk of these are Durham Wheat over winter seed increases and two organizations are mainly sponsoring these. One is the Northeastern North Dakota Seed Increase Association, a group made up of farmers in North Dakota who wish to increase their seed stocks for distribution next Spring. The other is H. D. McGrew, who is also representing several growers from Minnesota.

This amount of seed increase will bring approximately \$65,000.00 into the community.

WEED CONTROL

Weed control recommendations have been made on several crops during the past year. Test work was done with Dalapon on Johnson grass on the Homer Kryger ranch. Some material was applied on ditch banks, while other was applied in cotton. Air test work has been observed by Extension Agents and it is believed that Dalapon should be satisfactory for ditch bank control of Johnson grass as well as control of Johnson grass in the field if properly used.

Extension Agents are watching test work with new materials that will probably be of value to a number of crops in the future.

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COUNTY FAIR

The County Agent served as ex-officio member of the Yuma County Fair Board for the third consecutive year. The third annual Yuma County fair was again a success. A domestic exhibit building, 70 x 240 feet was constructed. This building served to house the exhibits of the Home Demonstration Clubs and the 4-H Home Economics Division. The County Agent was on the building committee for the construction of this building.

The County worked closely with the superintendents of the Agricultural Department and the 4-H Divisions. The first junior fair was established by this County Agent in 1945. The junior fair ran for seven consecutive years, and now the County Fair has completed three successful years.

COOPERATION WITH OTHER AGENCIES

Yuma County extension program has been coordinated with research conducted by the Agricultural Research Service, and the University of Arizona. The extension Service has cooperated with the Wellton Mohawk Water Users and the Bureau of Reclamation on the Wellton Mohawk Development Farm and on test work in that area. The Agricultural Stabilization and Conservation Service has given the County Agent assistance on farm support prices and in turn the Extension Service has given publicity to their program. Farm Home Administration has worked with the County Agent's office on radio programs and newspaper items. The County Agent has sat in on joint organization meetings with the SCS and discussed the problems of the Wellton Mohawk.

OUTLOOK AND RECOMMENDATIONS

The next five years should see the Agricultural acreage in Yuma County approach 300000 acres. With the scattered communities and the numerous crops in Yuma County, it behooves the Extension Service to develop an Extension Organization in Yuma County, that can cope with the many problems confronting Yuma County's agriculture.

At the present time, considerable work needs to be done on soybeans, field corn and star millet.

Additional work must be done on crops for canning and freezing, the marketing project of course will be to bring a cannery or freezing plant or both to Yuma County.

Livestock feeding in Yuma County continues to increase. Every effort must be made on the part of the Extension Service to stay abreast with current insect problems in Yuma County, as they can be very critical to the county's economy. These insect problems are changing from year to year and insecticides are likewise changing.

SUMMARY

This report covers a period in which the 4-H Club program in Yuma County experienced some very satisfactory trends. Among the unique things about the years work were:

1. Final enrollment of 504 members.
2. Demonstration Help Day - 50 in attendance.
3. National 4-H Club Week observation in connection with the first Annual 4-H Club Barbecue.
4. Third Annual Yuma County Fair - over 1200 4-H Club entrees. Also at the Yuma County Fair was experienced the highest average livestock sale over market price ever recorded.
5. Exchange Program - the ground-work was laid for an exchange program between 4-H Club members from Yuma County and a Mid-western state.
6. Delegates to National 4-H Club Camp - Yuma County had one delegate to this event during the 1954-55 year.
7. 4-H Club Camp - 61 4-H Club members from Yuma County attended this camp. This is the most to ever attend from this county.
8. State 4-H Club Round-up - 41 attendance from Yuma County
9. Total Completed members - 421 This is the highest number of 4-H club members to complete in Yuma County - percentage of completion is 83.45%. This is the highest percentage recorded.
11. Club Congress - Seven Delegates from Yuma County were selected as representatives to the National 4-h Club Congress in the Arizona Delegation this year.
12. Scholarships - two \$250.00 scholarships were awarded to 4-H Club members in Yuma County during the past year.
13. Alumni awards - Yuma County had a state winner. This is part of the High Tower.
14. Community Events - Yuma County 4-H Club Council was awarded a trophy for first place in the silver spur rodeo for the float entered in this event.
15. Recognition Event - 400 4-H Club members, leaders, parents and friends of 4-H attended this event this year. This is the largest attendance for several years. While we did not realize a very large expansion in numbers of 4-H Club members in the County during the past year, we found the program was on a more concrete foundation.

4-H Club work in Yuma County may be found in a number of different areas or communities. To mention them, they are: Gadsden, Somerton, Crane, Yuma Mesa Rural, Yuma Mesa City, North and South Gila Valleys, Salome, Quartzsite and Parker Valley. Mileage-wise, this covers an area of approximately 140 miles from the southernmost 4-H Club member to the northernmost 4-H Club member and approximately 75 miles from the westernmost member to the easternmost member's home.

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Due to the extensive area covered by 4-H Club activities in the County, naturally there is a lot of time spent in travel while visiting various 4-H Club meetings, projects and the various 4-H members homes.

It was observed that there was a trend for too much emphasis to be placed on winning projects and not enough on the spirit of 4-H Club work. Program planning was used to eliminate this in part. Leader training was also employed to correct this situation whenever possible.

During the year, the Agent in charge of 4-H Club work made an extended effort to make 4-H work a family project. Less meetings were attended and more home visits were made. This provided the opportunity to discuss 4-H work with parents. The increased interest of parents is most evident when the reorganization period for the 1955-56 4-H program was started. More parents than ever responded to the need for leaders in their communities.

Major projects for the 4-H program in Yuma County were: Foods, Clothing, Beef and sheep. It is possible to understand the popularity the foods and clothing projects have among the home economics members. However, the popularity of beef and sheep projects could only be explained by the profitable livestock auction sale conducted each year in conjunction with the County Fair.

ORGANIZATION AND PLANNING

4-H Meetings

As stated previously, there was a trend by the Agent in charge of 4-H Club Work to attend fewer meetings and to make more home visits. Nevertheless, during the course of the year, a goodly number of 4-H meetings were attended by Extension personnel.

The visits at the various meetings disclosed the age-old lack of program planning. There was evidence, during the period covered by this report, of program planning gradually becoming a more useful tool in many areas of club work. There was, however, vast room for improvement.

The Extension personnel was most needed at the meetings early in the year. Visits were effective at that time and there was no great need for return to that club's meeting for a considerable period of time.

In the fall of 1955 the Yuma Mesa Rural area was used as a pilot project in establishing a 4-H family program. Two mothers were elected as community leaders. Every father volunteered to serve as a project leader. A meeting schedule was worked out whereas monthly meetings were held in the various members homes. At the time of this writing, the Yuma Mesa area could rightfully be called the outstanding area for 4-H Club work in Yuma County - that is, from spirit, type of meeting, and general community enthusiasm for 4-H.

PROGRAM PLANNING

4-H Program planning in Yuma County is designed to include Extension personnel, both state and county, 4-H leaders, parents and members as well as local civic leaders.

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On several occasions during the year these groups were contacted, either as individuals or collectively as groups, for the purpose of planning the County-wide 4-H program. Perhaps some of the time spent by the Agent in charge of 4-H Club work could be classified as public relations. At least at every opportunity the objectives of 4-H Club work were emphasized. All too often it was observed that the spirit and objectives of 4-H were forgotten in the desire to win. On many occasions, when a plan for 4-H was being formulated, the Agent would be on hand to guide the thinking so as to coincide with objectives of the 4-H program. Not only was this practiced in 4-H meetings but also with planning meetings with outside groups or individuals.

A well balanced 4-H Club meeting was designed to include a snappy business meeting, project discussion, committee reports and a period of recreation. Of these points in a 4-H meeting, the ones that need to be emphasized are better business meetings and more use of committees and a bit more regularity in the recreation program.

4-H PROJECTS

As stated previously, major projects were: foods, clothing, beef and sheep. The tractor program gained a great deal of popularity during the 1954-55 club year. In the Yuma area, all 4-H club members interested in the tractor program met once each month to discuss the project. Frank Deason was the leader and did a great deal to make the meetings very interesting. The meetings were scheduled at the various implement dealers places of business in Yuma. Another group carried the tractor program in the Wellton area under the leadership of Bob McElhane. In the fall of 1955, the third tractor group was organized in the Parker area. Bill West, local implement dealer in Parker served as leader.

Of all of the areas of 4-H and of all of the 4-H Club projects concerned, the tractor program in the Parker area was the most needed. Most 4-H'ers in the Parker area are Indian children whose parents are farmers. The farm machinery represents a large investment for those families and their knowledge of tractor care is very limited.

A certain amount of concern, in the fall of 1955, over state-wide project requirement changes was evident. The Home economic phase of the program experienced the most changes. Several clubs had their projects started under the previous requirements and before the new requirements were available. The matter was finally settled by allowing this to be a year of transgression whereas the work was already started under the old requirements it could and would be accepted as credible work towards completions.

It was observed that several 4-H Club members were doing 4-H club quality work in addition to the projects reported. These members were visited and it was explained to the members concerned that they could also get their credit for the other work being done.

PROJECTS AND HOME VISITS

In view of the lack of parent interest and general lack of knowledge about 4-H Club work, a major effort was made to visit with more parents. Whenever the Agent was in the rural area, he made it a point to visit with several parents of 4-H members. Questions were asked the parents in regard to their children's 4-H Club project. Matters were brought up which would provide the opportunity to further explain and discuss 4-H Club work. Not every parent was visited personally. Those who were new parents or those who were specifically at a loss were visited.

There is no exacting way in which to determine the results of this endeavor. But seemingly, there was a better general understanding of 4-H among the parents at the end of the club year.

At the beginning of the 1955-56 4-H club year, a letter was sent to the parents of all first year 4-H Club members. The letter gave a very brief summary of 4-H Club work in United States, Arizona, and Yuma County. It welcomed them into 4-H Club work and invited them to call or visit the County Agricultural Extension Service office at any time. Enclosed in the letter was a University of Arizona circular entitled, "Help your Boy or Girl in 4-H Club Work".

DEMONSTRATIONS

4-H members and leaders in southern Yuma County turned out for a demonstration Help Day, January 22. Approximately 50 4-H members, leaders and parents were on hand. State 4-H club leader, Graham Wright, also was present to assist in the activities that day.

A general session of do's and don't's of demonstrations were held in the morning by the Agent in charge of 4-H work. In the afternoon, he worked with members interested in agricultural demonstrations in one room, while Miss Bettie Mead, Assistant Home Demonstration Agent, worked with members on Home Economics demonstrations in another room.

March 12, the Yuma County 4-H demonstrations had Contest day. This event was held at the Somerton Grammar School. Certainly due credit should be given to Mrs. Howard Salyer and Mr. O. L. Carlisle for the very fine facilities which were made available for the contest. Complete results of this contest are to be found in the 4-H Club consolidated report for Yuma County.

Judging

December 11th was set as an all county Agriculture Judging Contest. Approximately 45 4-H members were in attendance for this event. Classes of rabbit, poultry, lettuce, tomatoes and cabbage were judged at the Crane School. In the afternoon one class of lambs, three classes of cattle and one class of fat barrels were judged. The results of the cattle judging was used as a basis of selecting teams to represent Yuma County in the Arizona National Livestock show held in January each year, in Phoenix.

On December 23rd, Walter Jacoby & Sons of Somerton, Agriculture Ammonia Distributors sponsored a trip for these judges to the Rolling Ridge Ranch at Chino, California. Herm Schulte made arrangements for the trip and tour. The team

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members toured the ranch before noon and then judged several classes of Hereford Cattle in the afternoon. This was a very effective day in teaching these members a bit more about the livestock business.

The Yuma Valley Cattle Company was host to a team practice again on December 29th. At this session oral and written reasons were work on.

During the ~~third~~ Annual Yuma County Fair, judging contests for all divisions of Home Economics and Agriculture were conducted. The details of this contest are related under the section entitled "County Fair" in the Yuma County Annual Consolidated 4-H Club report.

Only the highest ranking juniors and seniors in each contest were named at that time as round-up team members for competition in state-wide contests.

During the Summer months, judging practices were held for the purpose of selecting remaining team members for Round-up competition. The results of Round-up judging competition can be found in the Annual Yuma County 4-H Club Consolidated Report.

Showmanship and Fitting

Two demonstration sessions were held in March to instruct 4-H members, leaders and parents on fitting and showing livestock. On March 8th, a demonstration was held with Everett Brown, a local bank employee who has had considerable experience with fitting and showmanship, on hand to assist in the place of Al Lane. The demonstration was held at the County Fair Grounds under the lighting system there. Mr. Brown did a very fine job. A calf was curled and clipped to demonstrate hair grooming. It was demonstrated how to throw the animal for a hoof trimming or other treatment. Following the fitting, some time was spent in demonstrating showmanship. A lamb was blocked and shown properly and proved a very interesting demonstration.

Yuma County has probably the largest sheep enrollment of any county in Arizona. The swine demonstration was limited because of interest in facilities. However, several of the good points were brought out for the benefit of those members who had swine projects and were in attendance.

On March 9th, a similar demonstration was held in northern Yuma County at the Connor Byestewa Farm. Here beef and lambs were fitted and shown because they represented the variety of livestock handled there as 4-H club projects. In addition, a brief demonstration on selecting rabbits was given. Assistant County Agent in charge of 4-H Club work worked alone on the Parker demonstration.

ENROLLMENTS AND COMPLETIONS

The 1954-55 year for 4-H Club work was very satisfying. This year more boys and girls completed 4-H work than in any other of eight years just preceding. The same is true for percentage of completions. A nine-year chart, found in the Yuma County Consolidated Report, will show the figures for the nine years quoted. However, in the 1954-55 4-H Club year we found 504 4-H Club members enrolled, 420 completing and 83.45 % of completions. To break those enrollment and completions figures down a bit further, we find there were 171 boys enrolled, 149 completing for 87.13 percentage of completion. Girls - 333 enrolled, 271 completed for a percentage completion of 81.78.

In addition to the increase in completions and percentage of completions, a total of seven clubs were added this year. This made a total of 28 4-H organized and operating in Yuma County.

An extra effort was extended this year to obtain the most accurate final enrollment figures from the leaders by January first. This undoubtedly accounted for the increase in completions.

Enrollment and completions for Yuma County for the year were used as publicity in the reorganization for the 1955-56 4-H Club year.

LEADERSHIP FOR 4-H CLUB WORK

In Yuma County, as in any other area, the 4-H club program is successful only through the efforts of the adult volunteers for 4-H club leaders. Some of Yuma County's finest people are 4-H leaders. A total of 56 adults actively worked with the 28 4-H clubs during the year. The average years of leadership was something above two years.

Mrs. Betty Frauenfelder, of Gadsden, was sited as having the longest period of service, that is, eleven years. Two leaders, Mrs. Nora Wynn of Somerton and Mr. Pete Gonzales of Gadsden, each received an award of the Silver Clover at the Annual 4-H Club Recognition Event in October.

The leadership for the 4-H Club program in northern Yuma County has been slowly worked away from the professional workers in service into the hands of farmers and home-makers in the Parker area. Agent in charge of 4-H Club work made a good many farm visits during the year to discuss 4-H work with the leaders.

Many misconceptions about 4-H work were cleared up because of these visits. The farm visits with the leaders seemed to leave the impression that the local County Extension Office was interested in aiding the leaders in doing a good job in 4-H leadership.

One of the tools which the 4-H leaders seemed to fail to discover, on many occasions, was using the 4-H parents. In almost every instance of an interested 4-H member there is a set of interested parents at home who would be more than glad to help lend a hand if they were only called upon by the 4-H leader in their community.

INFORMATION AND PUBLICITY

The matter of getting information and publicity out to the people of Yuma County was never a problem. The wonderful cooperation of newspapers and radio stations and television stations and the presence of an envelop addressing machine in the Extension office made this job a comparatively easy one.

Newspaper

The Yuma County Farmer and local weekly farm newspaper has given the Yuma County Extension office excellent cooperation in publicizing the 4-H Club Program. Each week there has been a column entitled "Yuma 4-H Front" appearing in this paper. This column varied in length but usually there were from six to twenty different reports, announcements and other articles of 4-H interest appearing.

In addition to the "4-H Front", there were numerous articles concerning 4-H Club work and activities in the County as they were covered by the staff of the paper. The local daily paper also carried occasional articles in reference to 4-H Club work.

Radio

Each Wednesday was 4-H Club Day over radio station KYUM in their early morning farm news program. That, at least, was the situation until the middle of September when the resignation of a staff member who had been carrying four programs each week through an extra load upon an inexperienced staff. At that time the Agent in charge of 4-H work was named Acting County Agent. He then assumed a second program on 4-H club work each week.

Several different approaches were employed to give a variety to the five-minute programs. During the period of reorganization, in the fall of the year, one program each week was utilized to review the requirements of the various 4-H Club Projects. The programs were fundamentally designed to inform the 4-H members, as well as the general public, about 4-H activities as they had happened or were about to happen. These programs had a very wide listening audience and they were certainly a valuable asset in getting information about club work out the people.

The radio stations also cooperated at times when special announcements were needed. These instances were when calves were available for distribution or when a group of 4-H members would be returning from some out of county trip.

Circular Letters

The circular letter was used widely to convey information to 4-H Club members, leaders and parents during the 4-H Club year. In a county so large as Yuma, the circular letter must be relied upon perhaps more than normally. However, when distances and travel often prohibited a general meeting, circular letters were used to relay information to the people concerned. It was a general practice to send copies of letters sent to 4-H club members to their leaders so that they might also be informed of what their members were doing or needed to do.

Covered Wagon

During the time when the 4-H Clubs were reorganizing for the 1955-56 year, the "Covered Wagon" was rolled out again. The "Covered Wagon" is a monthly newsletter type of circular letter mailed monthly to 4-H club members and leaders. The "Covered Wagon" carried announcements of coming 4-H Club events, summaries of past events, items reported by 4-H Club reporters and suggestions for games for 4-H recreation leaders.

Animated cartoons were used extensively to give the letter more readability. Perhaps the most difficult task in connection with the covered Wagon was to make the information brief enough so that the members would be inclined to read all of it.

Television

Untill the month of November, a regular monthly television program was presented on 4-H Club work. There were an estimated 28,000 receivers sets in the area of the local station, KIVA. Since the 15-minute 4-H Club program was scheduled

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at either 6:15 or 6:30 PM and there were no other TV stations available for the viewers, is it not reasonable and conservative to assume that 15,000 people viewed each program.

The 4-H Club programs were varied. Sometimes livestock was taken to the station along with the 4-H Club member. On other occasions, just the 4-H members or the Agent in charge of 4-H Club work appeared to present the programs.

A good deal of time was spent in the preparation of TV programs. Without question, many people were reached with the programs, however, whatever amount of time was spent in preparation and presentation of 4-H TV programs, it was time that had to be taken from something else.

In November, the television station management notified the Extension office that the time had been sold that was being used for the Extension programs. So, from that time forward, no programs were presented.

ACTIVITIES AND EVENTS.

Pre-fairs

The Parker area was the only community to conduct a pre-fair this year. This was the second Annual Parker 4-H Club Achievement Day. The event showed considerable improvement over that of the first, one year ago.

Civic organizations of Parker were 100% behind the event. They arranged for prize money, provided a place for conducting the event, provided panels and also aided in the layout of the pre-fair.

High winds inconvenienced the participants, but certainly it did not prevent them from having a very successful day. The idea behind pre-fair is to demonstrate to the public the accomplishments of the 4-H Club members and to give these members extra experience in exhibiting.

Extension personnel from Yuma assisted in setting up and carrying out the event.

Recognition Events

During the month of November the Somerton Junior Farmers and Home Makers 4-H Club held their sixth Annual Recognition Event at the American Legion Hall in Somerton. Approximately 75 4-H Club members, parents and friends were in attendance at this event. This attendance figure is somewhat lower than years previous. The leaders, Mr. and Mrs. Howard Salyer were on hand to present to the members their achievement pins and certificates. Mr. Al Face, former County Agent, was the main speaker of the evening. In addition to the main speaker, Marilyn Carlisle reported to the group on her trip to Salt Lake City as a Make It Yourself With Wool Winner. Also Charlotte Salyer reported on her trip as a delegate to National 4-H Club camp in Washington, D. C. earlier in the year.

Luggage was presented at this event to Dennis Harmon, Charlotte Salyer, and Marilyn Carlisle as winners of the out of state trips from this club. This precedent has been carried on by the Somerton Junior Farmers and Home Makers for several years.

Parker also held a recognition event for all of the 4-H Clubs in the Parker Community during the month of November. It is always very interesting to attend the 4-H Club events in the Parker area. Most of the 4-H members there are Indian and come from Indian families. Approximately 100 people attended this event. It was a very fine evening in that all 4-H Club members received their pins and certificates as well as county medals which they had won during the year. This Agent was on hand to give a brief talk about 4-H Club work.

Club parties and picnics

In the Spring of the year, many clubs had picnics or parties. All of these events in a Community tended to make the 4-H Club program just a bit more interesting for those members involved.

COUNTY ACTIVITIES

Activities such as health, safety, recreation and community service were all approached from various aspects during the club year. However, accomplishments were not too inclusive. One club, the Yuma Mesa Jack Rabbits, initiated a road sign program in their area to give the name and location of all the farms in their community.

During the United Funds Drive, two 4-H Clubs, the Cook 'n Chuckle and the Busy Women, made contributions as a means of community service.

The health activity was brought out, dusted off, and forgotten in almost the same time to tell about it.

The safety program received a little interest from a few areas but very little was accomplished. It was the opinion of the Council and Leaders Association members that these activities be held in reserve until such time that a club program is on a firm enough foundation to need these activities to fill in with the remainder of the program. It was also suggested that these activities be introduced one at a time and a concentrated county-wide effort be extended towards a current activity for the year.

Silver Spur Rodeo

The 4-H Club Council was represented in the Junior Chamber of Commerce rodeo activities by having a float in the parade. This float was designed by Mary Bobersky and was built almost entirely by 4-H Club leaders and members. It was awarded a trophy in the educational division. This, of course, is very gratifying to all concerned.

Cattlemen's Convention

Also during February during the time when the Arizona Cattle Growers Convention was in Yuma, the 4-H clubs had a part in this program. 4-H Club members, Favil West and Roger Frauenfelder were coached to present a beef quartering and type demonstration for the delegation. The boys were assisted by Lorn Cumley and his 4-H Club project calf. The demonstration was so successful that it was used again later in the month for a television program.

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Also, the 4-H Club Council prepared and distributed maps of a feedlot tour scheduled during the convention's stay in Yuma. The map bore the 4-H emblem and a welcome to Yuma County by the 4-H Club Council.

County Fair

April 13 through 17 mark the days of the third Annual Yuma County this year. The fair, which has grown to be one of the largest County Fairs in Arizona, had its real beginning as a 4-H Club Fair nearly 10 years ago. Today the 4-H Clubs still play an important role in the fair. The 4-H division is by far the largest part in all respects. It is a lot of work but a satisfying thing as well.

Here, in this report, an attempt will be made to be general as an inclusive report is found in the Yuma County 4-H Consolidated Annual Narrative.

Previous to the time the fair actually got underway, a good deal of work was done by 4-H club members, leaders and parents to ready the pens and equipment. A new barn to house eighty head of beef cattle was added to the facilities for the junior division. The Agent in charge of 4-H club work was instrumental in designing the building and seeing to the procurement of materials and labor for construction. The schedule of building was interrupted by high winds for several days and the last of the metal roofing was placed on the shed even after the cattle was stabled.

The entering of 4-H exhibits at the Yuma County Fair was handled jointly by the Extension Office and adult 4-H Club leaders. The fair catalogue was distributed just as early as possible. This year it was later than it should have been and consequently caused a few hardships.

Approximately the middle of March entree blanks and related information were distributed to 4-H club leaders. They, in turn, handed these to 4-H members who made their entrees according to the fair catalogue. Completed entrees were returned to the Extension Office where they were filed according to the divisions. Official entree information was then transferred to Superintendent's record sheets which are the working records for the fair. A new type of record was tried this year which was to eliminate the job of making entree tags. It worked quite well.

On Thursday, agricultural exhibits come into the fair. Beef is weighed at the Sturgis gin before coming to the fair grounds. Sheep and swine were weighed at the fair grounds by committees of local cooperators who served as an official weighing committee. As soon as animals were officially weighed, they were reported to superintendents of the various divisions who see to it that they are put into the correct pens. All of the livestock were stabled in groups. This allowed the clubs to function very effectively in the herdsman job and award program that was part of the fair activities.

4-H Agricultural Entrees were as follows:

Beef	68
Sheep	59
Swine	25
Goats	4
Dairy	5
Poultry	20
Rabbits	33
Crafts	13
Garden	12
Home Beautification . . .	35
Insects	1
Crops	4
Miscellaneous	3
Tractor	11

The following ribbons were won in the following divisions:

Beef	6 purple
	20 blue
	27 red
	21 white
Sheep	7 purple
	20 blue
	23 red
	16 white
Swine	4 purple
	12 blue
	10 red
	3 white
Goats	1 purple
	3 blue
Dairy	1 red
	1 purple
	4 blue
	1 red
Poultry	7 blue
	7 red
	2 white
Rabbits	8 blue
	16 red
	4 white

Crafts	6 blue
	5 red
	2 white
Garden	10 blue
	2 red
Home Beautification. . . .	27 blue
	8 red
Insects.	1 blue
Crops.	3 blue
	1 red
Miscellaneous.	2 blue
	1 red
Tractor.	2 blue
	6 red
	3 white

The tractor program was new to all concerned this year and it could be considered quite a successful event. Last year one contestant took part where as 11 tractor members were on deck for the rodeo this year.

Favil West, with a score of 222 points, was first high man and Dennis Harmon was second with 203 points. Favil, however, had represented Yuma County in last year's 4-H Club Round-up and as a result he was not eligible this year. Dennis Harmon was the representative for Yuma County this year as well as Leslie Kammann.

In the agricultural judging, the high individuals in the Contest were Jane O'Rielly, Morris Sevada, and Mary Bobersky. This was a three-way tie which was broken by judging an extra class and was eventually won by Morris Sevada. All of the agricultural judging events conducted at the Yuma County Fair, by far, the livestock judging event was the most popular with the 4-H club members. A total of 34 4-H Club members took part in the judging contests.

Showmanship

Showmen were selected in preliminary judging to compete in the final showmanship contest. This year the showmanship finals were held in the evening. This was very successful. A large audience stayed and observed the event. The exhibitors and their animals were both rested a bit and consequently the event went much smoother.

Herdsmanship

The herdsmanship contest was new this year. It was designed to create a more attractive livestock display area. A scorecard including courtesy, neatness of animals and equipment and neatness of surrounding area was designed. Competition was between clubs. It was new to leaders and members alike and as a result, it was a little bit rough this year. Nevertheless, it has had a desirable effect on the parents since it so much improved the appearance of the exhibit area at the county fair.

The Parker Desert Farmers was the highest scoring club with a total of 1,080 points out of a possible 1200. The Yuma Livestock Association sponsored an award of a showbox which went to the winning club.

Club Sweepstakes

A system was used to place a point value on different ribbon grades of different exhibits. All points compiled by members of one club were added together. This total is divided by the enrollment of the club to give an average of points per member. A free trip to Tucson State 4-H Club Round-up is awarded to the leader of the club with the highest average points per member.

The stitch and Cackle Club, whose leader is Mr. Pete Gonzales, had a total of 102 points with an average of 17 points per member. The Hem and Ha club was the Home Economics winner with an average of 24 points per member. Their leader is Mrs. Faulkner.

The rate of gain contest was sponsored by the First National Bank of Arizona. Awards, of copies of Morrissions Feeds and Feeding, go to the high three gains between sheep and swine.

Average daily gain:

Beef.....	Buddy Rose	- 2.48 # per day
Sheep.....	Baker Cochran	- .496# per day
Swine.....	Dorothy Arnold	- 1.81 # per day

Special Ribbon Awards

The Yuma County Livestock Association sponsored special ribbon awards to individuals who compiled the most points in livestock exhibits. Ribbons were awarded to the high 10% of the livestock exhibitors.

M. G. Miniken Award

The M. G. Miniken Award went to the individual who compiled the most points in both agricultural and home economics judging. The agricultural award was won by Morris Sevada, the Home Economics award was won by Helen Faulkner. This award was a \$25.00 U. S. Savings Bond to each of these individuals.

P. C. W. A. A. A.

The Pacific Coast Women's Auxillary of the Aberdeen Angus Association made an award of a silver trophy to the outstanding girl exhibitor of Angus cattle. Jane O'Rielly was the winner of the award this year. Jane had a purple ribbon angus steer on exhibit at the fair.

Individual Sweepstakes

This award is sometimes know as the Arizona Fertilizer Award. It is an award of \$25.00 cash to the two individuals who compile the most points in the Senior Division of 4-H Agricultural and Home Economics. These awards were won this year by Margaret Faulkner, Home Economics and Jane O'Rielly in Agriculture. Jane compiled 79 points to win the Ag division and Margaret gathered 69 points to win the Home Economics division.

Gadsden Home Maker's Award

This award of an official 4-H Club jacket was sponsored by the Gadsden Home Makers club. The award is made to those junior 4-H members who gained the

most points in accordance with the point system. In agriculture, Vincent Schulte was the winner. In Home Economics the winner was Sandra Neese with 28 points.

Home Economics at the Fair

The Home Economics members had exhibits at the fair again this year. The quality was up to par with years previous. Of particularly outstanding merit was the 4-H Club Home Economic booths on display in the domestic exhibit building. Entrees in the Home Economics Division totaled as follows:

Clothing	499
Food Preparation.....	429
Food Preservation.....	47
Home Furnishings.....	16

The total, added to the agricultural entrees made a grand total of 1284 actual entrees in the 4-H division of the Yuma County Fair in 1955. These totals are actual material exhibits and did not include competition in such things as; judging, showmanship and dress review.

Dress Review

The Dress Review finals were held on the show stage at the Fair again this year. A nice background scene was painted by one of the 4-H mothers, Mrs. O. L. Carlisle of Somerton. The dress review received a 30-minute broadcast this year over local radio station, KYUM. Results of the dress review were as follows:

Sports Outfit.....	Mary Bobersky
Best Dress.....	Maybelle Mason
Suit Dress.....	Joyce Barry
Tailored Coat.....	Helen Faulkner
Party Dress.....	Norma Baldrige
School Dress.....	Barbara Braden

Senior Sweepstakes winner was Maybelle Mason. Junior Sweepstakes winner was Sandra Neese.

Point Money

The Yuma County Fair Board made available \$1,000.00 for distribution to the Junior Division to be distributed in accordance with the point system. The points accumulated this year were as follows:

4-H Agriculture.....	1,665 points
4-H Home Economics.....	1,844 points
FFA	456 points
FHA	452 points

The points were worth 22¢ each to the exhibitors in the Junior Division.

Auction Sale

The Livestock Auction Sale was one of the major parts of the Yuma County Fair. A great deal of planning and organization goes into this event. It pays off as the Junior Auction Sale here has a reputation of being one of the smoothest operating Sales of any place in the area. The organization and work begins actually early in the fall, a full six or seven months prior to the fair. A Livestock procurement and auction committee chairman is named to head these activities. In the fall, these individuals work on livestock procurement and

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during the season of the fair, they work on the job of getting rid of the animals. The Chairman names a committee whose job is to contact potential buyers for the sale. This Agent works closely with the group. It is the Agent's job to keep the committee posted on the number of animals to be sold and to keep track of the details as a clearing house. Sellers and personal contacts are named. The auctioneer, once again, was Milton Zinn. Mr. Zinn has won a lot of respect in this community and certainly has done an excellent job with the sale.

Statistics of the Auction Sale

Total Animals Sold..... 160.
No. of 4-H Animals Sold..... 133.
Total lbs. of meat sold...70903. lbs.
Total amount of the Sale.....\$28850.61
Average price per lb. for purple animals.....\$.44.568 per pound

Beef.....\$.44.187
Sheep.....\$.43.500
Swine.....\$.46.416

Average Price per lb. for blue ribbon animals..... 46.89¢

Beef..... 46.31¢
Sheep..... 44.92¢
Swine..... 53.00¢

Average price per lb. for red ribbon animals:

Beef..... 42.51¢
Sheep..... 55.94¢
Swine..... 51.62¢

Average price per lb. for white ribbon animals

Beef..... 25.625¢
Sheep..... 25.250¢
Swine..... 24.500¢

Some of the high sales were as follows:

- Beef - 55¢ to Mike Smith by John C. Smith, Jr.
- 55¢ to Karen West by Farmers Marketing Corp.
- Sheep- \$1.30 to George Reese, Jr. by California Cotton Oil
- Swine- 85¢ to Vincent Schulte by Frank Ferguson

A daily live radio broadcast was made by the Agent in charge of 4-H Club Work. This program gave the people a complete rundown on the 4-H Club activities as they had happened that day. Everyone worked hard at the County Fair Exhibits and, as a result, a very fine show was presented for the public.

4-H Council Meetings

Yuma County 4-H Club Council met each month during the school year. The 4-H Council was made up of members from each club, unless it was a mixed club having both Ag and Home Ec projects. In this case, the mixed clubs elected both an Agriculture and Home Economics representative. They elected new officers in the fall who were installed at the 4-H County Recognition Event in October. The 4-H Council acted on all 4-H business and administered council funds. At regular meetings they planned various phases of 4-H programs.

The council worked hard and hand in hand with the 4-H Club leaders Association and frequently their meetings were held jointly.

4-H Leaders/Association

The Yuma County 4-H Leaders Association is made up of all of the 4-H leaders in Yuma County. Due to the distances which prevail in this county, a northern Yuma County 4-H Leaders Association was formed in 1955 so that the leaders in that area might get together to work and plan as a group. Quite often these leaders meetings are used for leader training.

The leaders association also had their election of officers which were installed at the Annual 4-H Club Recognition Event.

Recognition Event

1955 marked an anniversary date for the 4-H Recognition Event in Yuma County. It was the tenth such event to be held. A great deal of time was spent to make it a more successful event than those previous.

Favil West, who is president of the 4-H Council for the year 1954-55 was master of ceremonies for the evening. Invocation was given by Rev. Stanley Olson, Pastor of the Faith Lutheran Church of Yuma. Miss Mary Bobersky, 1955-56 president of the Yuma County 4-H Council was in charge of the introduction of guests. As far as possible, the local representatives and the national donors for the 4-H awards program were invited to be on hand to present those awards to the winners in Yuma County. They, as well as other members and friends of 4-H, were among the guests in attendance at the recognition event and introduced by Miss Bobersky.

The certificates of leadership were handed out by the Acting County Agent. County winners in Home Economics were given their awards by the Home Demonstration Agent and the Assistant Home Demonstration Agent. Agriculture awards were presented by Graham P. Wright, State 4-H Club leader, of the University of Arizona. Mr. Wright also gave a very fine report of activities throughout the state of Arizona and he was also charged with the responsibility of the candle lighting ceremony in connection with the installation of Council and Leaders Association Officers.

A total of 55 4-H club leaders received their certificates of leadership and their pins as the case may or may not have been. Two leaders, Mr. Pete Gonzales of the Stitch and Cackle 4-H Club and Mrs. Nora Wynn, assistant of the Junior Farmers and Home Makers received awards of the Silver Clover for 5 yrs. of leadership. These awards were presented by Mr. Wright, state 4-H Club Leader.

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Mrs. Betty Frauenfelder, assistant leader in the Gadsden Stitch and Cackle 4-H Club, was on hand to receive a very fine round of applause for her eleven years of 4-H Club leadership.

A complete accounting of County Winners in both Agriculture and Home Economics will be found in the Annual 4-H Club Consolidated Report for Yuma County.

Something new in so far as the Recognition Event was tried this year. It is the general opinion that it was very successful. Instead of having a recognition banquet, as had been the case in years previous, this year the meal was a pot-luch affair. This type of event entailed, to a degree, more planning than a banquet. However, it must have been worth while as the attendance came up from 119 of one year ago to something in the neighborhood of 400 this year.

STATE EVENTS

4-H Round-up

Round-up this year was unique, an experience for all who were concerned with it. This was the first time that it had been held in August. The change from June to August, after the 4-H program for the year in Yuma County was developed definitely, worked some hardships on our delegation and representation at 4-H Roundup. Also, for the first time, Round-up and Leaders Conference was combined or held at the same time. The combination of Round-up and Leaders Conference worked out moderately well. The leaders enjoyed the opportunity to observe Round-up activities and the Extension Agents enjoyed having the leaders on hand to assist with many details.

In Yuma County, the 4-H program, as well as most other organizations, is geared to the most work being accomplished during cooler winter months. Summer time is an inactive period in 4-H Club work. 4-H members often get jobs or are absent with their families on vacations. This was most obvious this year, when attempts were made to get members together for judging practices.

Conditions were made even more difficult when heavy rains made it impossible to reach the northern end of the County. Even when circumstances are at their best, it is not an easy task to coach a judging whose members are separated by 140 to 150 miles.

Nonetheless, a total of 41 4-H members from Yuma County registered for competition at the 37th Annual 4-H Round-up, August 22-26 on the University of Arizona campus at Tucson. These members were those who have ranked highest in various demonstrations and judging activities.

Yuma County 4-H members were sponsored for these trips by the combined contributions of the Yuma and Somerton Chamber of Commerce and the Northern Yuma County 4-H Leaders Association.

The results of the competition by Yuma 4-H members appear in the Yuma County 4-H Consolidated Report.

4-H CLUB CAMP

One of the largest delegations to ever attend 4-H Club Camp from Yuma County attended the Prescott area camp this year. A total of 60 members were in attendance.

The delegation from Yuma County tended to be of a somewhat younger average age than in years in the past. This was partly due to the fact that Round-up followed at such a close date. Several members had to make a choice when the two functions were scheduled as they were. In most instances, they chose to attend Round-up.

The Assistant County Agent in charge of 4-H, in addition to supervision the delegation from this County, also had four 2-hour classes in recreation, four 2-hour classes in leather craft, and several lengthy sessions of recreation during the evening programs.

A certain amount of uncertainty was evident in the activities of the camp. It seemed that no one was quite certain of duties, schedules, or plans in general. Most certainly, one person should have been placed as unrepresented director.

Craft classes at camp were very well received. The most popular one being Enamel-on-Copper. It was new to everyone and one which the smallest camper could do well.

LEADERS CONFERENCE

The following Home Making leaders from Yuma County attended Round-up and Leaders Conference: Mrs. Alice Rushin and Mrs. Wonda Golden - Busy Women; Mrs. Mona Wright and Mrs. Marie Cobb - Roll; Mrs. Virginia Bobersky - Sip and Sew; Mrs. C. H. Barry - Cook N' Chuckle; Mrs. June Meyer - Desert Queens; Mrs. Mae Baldrige - Parker Clubs; Miss Lucendia Cross - Stitch & Ditch; and Mrs. Nopht from the Parker area.

It was a new experience for the 4-H leaders in Yuma County and Arizona to attend Round-up and Leaders Conference at the same time and in the fall of the year. This schedule did provide the 4-H leaders with the opportunity of observing the competition that the members take part in. All leaders who did manage to find the time to attend the Conference were quite well pleased with the time spent.

ARIZONA NATIONAL LIVESTOCK SHOW

Two teams of Senior age 4-H members from Yuma County were entered in judging competition at the Arizona National Livestock Show in Phoenix. Members judging were: Favil West, Danny Johnson, Mary Bobersky, Jane O'Rielly, Lorin Kumley, Harry McKee, Karen West and Marilyn Power.

The members were handicapped as usual by the lack of good cattle to practice on. They ranked 9th and 11th as teams.

Connor Byestewa, of Parker, had his scramble intry calf screened from competition.

ARIZONA STATE FAIR

The only 4-H entries from Yuma County at the 1955 State Fair were 28 Home Economics entries from the Parker area.

It was very difficult to create interest among the 4-H members in exhibiting at the state Fair.

NATIONAL 4-H CLUB WEEK

Yuma County 4-H Clubs worked several items into one during March. On March 5th, the first day of National 4-H Club Week, the 4-H Club members and leaders worked very closely together to sponsor a 4-H Club barbecue. This event had 3 objectives in mind. First, it was a money making project; second, it called attention to National 4-H Club Week; and thirdly, it was connected with the dedication of the new \$39,000. Domestic Exhibit Building at the County Fair Grounds.

The 4-H Council realized about \$400 from their endeavor, but even more important, nearly 1500 people were in attendance at this event, which the 4-H sponsored.

Several business houses in Yuma area carried ads in the local papers calling attention to 4-H Club week. These were ad mats furnished by the National 4-H Club committee. This was the first year that members had done such a thing.

NATIONAL 4-H CLUB CONGRESS

The Yuma County 4-H Club Program received a very pleasant surprise during the month of October, when it was announced that seven of the boys and girls of Yuma County would be in attendance at the National 4-H Club Congress, held annually in Chicago. The winners from Yuma County are as follows:

Roger Frauenfelder.....	Boy's Ag. Program
Norma Baldrige.....	Clothing
Dennis Harmon.....	Garden
Joyce Barry.....	Girl's Record
Maybelle Mason.....	Santa Fe
Mary Bobersky.....	Santa Fe
Marilyn Carlisle.....	Santa Fe

In addition to the trip, Marilyn Carlisle will receive a \$250.00 Santa Fe Scholarship. These seven boys and girls were part of the 13 boys and girls who had submitted records to the state 4-H Club office for these trips.

NATIONAL 4-H CLUB CAMP

Yuma County had another representative to National 4-H Club Camp again this year. It was Charlotte Salyer, member of the Somerton Junior Farmers and Home Makers 4-H Club. Charlotte was a worthy delegate. She made herself available to speak to other 4-H Clubs upon her return.

SPECIAL AWARDS AND SPONSORS

State Awards

Scholarships - Standard Oil - to Charlotte Salyer

Santa Fe - to Marilyn Carlisle

Arizona Fertilizer Award

This is an award of \$25.00 to both Ag and Home Ec sweepstakes winners at the County Fair. Winners this year were:

Jane O'Rielly - Ag
Margaret Frauenfelder - Home Ec.

Mr. Sam Dick, local representative, presented the winners with their checks on a TV program shortly after the Fair.

Gadsden Home Makers Award

This award was sponsored by the Gadsden Home Makers Club. It was an award of official 4-H Club jackets to the Junior winners of the sweepstakes award. Winners this year were: Wincent Schulte - Ag., and Sandra Neese, - Home Ec.

Scrapbook Award

The scrapbook awards were sponsored by Yuma Stationers. It was an award of a new scrapbook and went this year to Mary Bobersky for her best scrapbook exhibit at the County Fair.

M. C. Miniken Award

This was an award of two \$25.00 U. S. Savings Bonds going to the two high judges at the County Fair. Winners were:

Morris Sevada - Ag
Helen Faulkner - Home Ec

Rate of Gain Contest

Complete results of this contest are covered in the County Fair Report.

P. C. W. A. A. A. Award

Presented to the top girl exhibitor of Angus the award was sponsored by the Pacific Coast Women's Auxillary of the Aberdeen Angus Association.

Jane O'Rielly was the winner this year.

Point Money

\$1,000.00 was made available to the Junior Division of the Yuma County Fair. This includes the 4-H club exhibitors. Points are established for each ribbon grade on each exhibit. The point system this year made each point worth 22¢.

Round-up and trips

The Yuma County Chamber of Commerce made \$500.00 available towards Round-up expenses. As well, the Somerton Chamber of Commerce provided \$100.00 for the same reason. The Northern Yuma County 4-H Leaders Association put in \$87.00 toward Round-up expenses of delegates from their area.

4-H Calendar

Once again the 4-H calendars were sponsored by the Atmar Distributing Company. Nearly 500 such calendars were made available to the 4-H members.

Sears Award

The third and final Sears Foundation award of a registered Holstien Heifer was made last year.

Exchange Club Award

No Pigs were farrowed this year in keeping with the exchange club swine program.

Danfaith Award

Marilyn Carlisle and Conner Byestewa were named winners of the W. B. Danfaith search for the outstanding 4-H boy and girl.

Livestock Association Junior Memberships

The Yuma Livestock Association made Junior memberships available to all 4-H members carrying 4-H livestock projects. They also made special ribbons available to the livestock exhibitors ranking in the high 10%.

Herdsmanship Award

This was a new award this year. It was designed to make a more attractive exhibit area. Around the livestock stalls and pens at the Yuma County Fair, it was a popular contest and it served to make members more conscious of appearance. The award presented was a showbox valued at about \$30.00 sponsored by the Yuma Livestock Association.

Bruce Brockett Award

During the month of November, the Acting County Agent was contacted by Mr. Sam Dick, a local businessman, in reference to an award of a Beef Master Calf to the 4-H Club Program, here in Yuma County. Investigation of this award disclosed that Mr. Bruce Brockett, an influential businessman from Rim Rock, Arizona, had been to the Yuma County Fair several years previous and had, at that time, made some statement that he would like to supply to the 4-H Club members of Yuma County some of his Beef Master Calves to be fed and shown in competition at the Yuma County Fair. Through the efforts of Mr. Dick, it was arranged that a 600# Beef Master Calf was made available to the 4-H Council this year for distribution to one of the older and more experienced calf feeders in the 4-H club program here. Bob Smith, a five year 4-H member from the Gadsden Stitch and Cackle Club was selected to feed this calf. Bob went after the calf, to Phoenix, on Thanksgiving Day and returned and is very, very happy with the animal. An agreement was worked out with Mr. Smith so that he will carry insurance on the calf, feed it, and exhibit it at the 4th Annual Yuma County Fair. Upon the sale of the animal, he will return to the 4-H Council an amount equal to the purchase price of the calf, or approximately \$100.

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Somerton Rotary Club Awards

The Somerton Rotary Club sponsored awards for the fall judging contest last year. An award was made to the leader who had the best representation and the high Juniors and Seniors in the contest.