

NARATIVE REPORT

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YUMA COUNTY, ARIZONA, 1919.

Altho Yuma County is of fair size as western counties go, being a hundred miles wide by a hundred fifty long, only a small part of its area is suitable for agricultural purposes.

With the exception of a few ranches in the Gila Valley near Wellton, which can be reached by auto from Yuma over very rough roads, and a small tract on the Colorado river near Parker, which can be reached only by rail via Phoenix, Arizona, or Colton, California, the producing lands are confined to a comparatively small area in the southwest corner known as the Yuma Valley.

This tract contains some fifty thousand acres and in connection with about fifteen thousand acres on the California side of the Colorado river forms the Yuma Project, Arizona-California, one of the oldest undertakings of the U. S. Reclamation Service. In addition to the above there is the Mesa Auxilliary Project, a tract of forty thousand acres of mesa land lying to the east of the main valley and about a hundred feet higher. This is to be irrigated by water pumped from the main canal in the valley and is expected to develop into a high class citrus orchard section. The first unit of this tract containing 6400 acres will be offered for sale on December 10th. 1919 and construction work will be started at once on installation of pumping plant and other necessary equipment. It is hoped that water may be available for planting in the spring of 1921 or 1922 at the latest.

The irrigation water is diverted from the Colorado river at a point about twelve miles above Yuma by the Laguna Dam, a unique structure, brought down on the California side to a point opposite Yuma, Carried under the Colorado river thru a large conduit or syphon and distributed by a very comprehensive system of canals and laterals. While the cost of recovery has been quite high--seventy five dollars per acre, the cost of operation and maintenance is

low and the distribution so perfect that the system is well nigh perfect. There is some alkali, mainly sodic carbonate, which is a serious problem in some places, but in the main the land is very rich and highly productive under irrigation as is shown by the fact that this project leads all other Reclamation Service projects in value of agricultural products per acre. The conformation of the land is such that uniform distribution of the water is had, the general practice being to grade the land level and control the water by rather high borders surrounding plots of from three to five acres. In addition to an even application of water this method makes it possible to leach alkali down below the danger point for young plants.

While frosts occur in the valley in winter the atmosphere is so uniformly clear that the soil cools but little and optimum temperatures are had very early in the spring. Alfalfa is harvested as early as March and as late as Christmas, the favorite time of seeding being December and January. Cotton planting begins in March and should end by May 10th. altho the tendency is to string it out, some being planted as late as July. About June 1st. the real summer weather begins and for a period of approximately four months the maximum daily temperature seldom registers less than 100 degrees with a minimum of from 70 to 80. During this period soil temperatures approximate 80 to 90 degrees but seldom exceed the latter as this is generally the maximum temperature of the water as it is applied to the land. Under such conditions plant growth is very rapid, alfalfa attaining a height of 36" in four weeks time and other plants growing equally as fast. Where fiber alone is wanted this is a favorable condition but where fruit such as alfalfa seed and cotton lint is desired it is a different matter and presents many difficult problems in moisture control. However, the conditions are so uniformly favorable that profitable returns are quite often had under methods and practices that would mean certain failure in almost any other section, and under these conditions it is difficult to conduct demonstrations ~~and~~ in crop production with the assurance that the expected results will not be confuted in adjoining fields.

The Project under present control was finished in 1912 but irrigation has been practiced for several years previous to this thru the use of water diverted from the river below Yuma and the general ~~practices~~ principles of irrigation farming are very well followed. This does not mean that present practices can not be improved upon but that the problems are major rather than minor ones and difficult to demonstrate. For instance, while water is the

controlling factor it may be applied in seeming impossible ways with approximately good results just so long as drainage exists but it is hard to convince some people that this is a fact. This, of course, is a Project problem and is being taken care of thru the Reclamation Service drainage system, but it is really surprising how much opposition there is to this work by some of the water users. It is gratifying to note that there is less objection to the drainage work this season than last.

The question of soil fertility is also a hard one. The land is rich, the cost of preparation great, the need of quick returns imperative and under such circumstances it is but natural to expect the farmers to attempt to secure this easy money even tho it may be at the expense of future operations. Believing this to be the true situation no demonstrations in the accepted sense have been undertaken, the time being devoted to the giving of expert advice to individuals and groups and to handling emergencies as they have arisen.

The manner in which this has worked out is quite well shown in the Distribution of Work of County Agent as shown on page 6 of the annual report and is a good indication of the relative importance of the various projects, in this sense being a good guide for arrangement of project work for another season. On an acreage basis the most important crop has again been cotton, it representing approximately 40% of the cultivated area with alfalfa next, it occupying about 25 or 30%, with grain sorghums and miscellaneous crops covering the balance. The relative attention required has been in about the same proportion. Cotton has led in all phases with alfalfa second and grain and miscellaneous crop stuff next. The matter of irrigation ties into the production of all crops so intimately that it is difficult to separate. The question of soils (alkali) is also a complex one, the reclamation of such soils being largely a matter of leaching of the caustic salts thru irrigation and the relative salt-resisting capacity of the various crops. The question of markets is a large one and affects the Valley as a whole but the work on this project this season has been confined mainly to alfalfa seed certification. Labor is also a general problem altho it is more directly associated with the production of cotton. County and State Fairs and other exhibits have received a good deal of attention because of the stimulating and educational value. Office work is made up of fractional parts of days and is for the larger part that incidental to general administrative requirements. No livestock projects have been undertaken since it still appears unreasonable to expect a farmer to increase or even maintain production of meats under conditions as they existed here the past season.

No comprehensive organization campaign has been launched because there has at no time appeared to be any assurance that an organization such as the Farm Bureau is supposed to be would continue to function of its own volition after being organized. No doubt a well planned effort along this line would result in a large enrollment as members of a Farm Bureau but it is also more than likely that it would require a large part of the county agent's time to keep the organization alive and active. There is no opposition to the proposition but there is too little demand for it to justify expectations of satisfactory results.

Discussing the various projects in detail I have to submit the following:

ALFALFA SEED
CERTIFICATION:

Work with this project has been continued from last season and has been confined practically to inspection of the alfalfa fields for classification and the certification of the seed. The results of last year's efforts along this line proved the need and value of such work. Without doubt it not only increased the returns to the growers last year but it stabilized the market to the extent of creating a strong demand on the part of the planters for certified Peruvian seed. There was a strong effort on the part of the large wholesalers to buy this season's crop at 27¢ per pound but the growers held for higher prices and the bulk of the crop finally moved at around 35¢, a net gain to the growers of 8¢ as a result of the demand created for certified seed. As there will be some 8000 sacks of seed this means approximately a hundred thousand dollars resulting from work done under this project.

COTTON SEED:

Since cotton is the main crop it is readily apparent that any increase in yield would amount to considerable to the project. In addition to the assistance that could be given along cultural lines it appeared that the opportunity to secure better seed would be worth a great deal to the grower. With this end in view, and because existing quarantine laws would not permit individuals to import seed, arrangements were made with the State Experiment Station to secure a small quantity of the best to be had in Texas. This was planted and grown under cooperative agreements which assured the saving of all the resultant seed for planting purposes. While the quantity imported was much less than desired, only two bushels

being available, the result has been very gratifying both in yield of lint and seed, we now having about 4000# of a high grade cotton ~~for~~ seed for next years planting, which should produce sufficient for all after that. The quality of this cotton is very good and the yield high, averaging 25% more lint than the average field which would have meant approximately \$750,000. had the whole planting been as good. It will not be possible to retain this high capacity in a large way but the first and second generations should effect an increase of from 5% to 10% over existing strains. It was hoped that additional mother seed could be secured for another year but it now seems that this will not be possible. The fact that such plant breeding work should be carried on by the local Experiment Station is becoming more evident each planting season.

LABOR

Profiting by the difficulties experienced last season in the matter of securing the necessary laborers for picking cotton the growers early manifested a desire to organize in some way that would be satisfactory for this purpose. Since it appeared that it would be necessary to import aliens from Mexico attempts were made to ascertain what the conditions for such importation would be so that an organization might be effected that would fully comply with the requirements. After repeated efforts the growers were finally able to perfect an organization that met with the approval of the Dept. of Labor and the permission to import was granted but it came too late to be of any service for this season's crop. Pickers were secured thru labor contractors and in various other ways in sufficient numbers to save the crop better than last year but an additional thousand would have meant at least a quarter million dollars in cleaner work at a lower price. The effort along this line was not without results as the Cotton Growers Association which was organized will be available for quick action another year.

IRRIGATION

Following last year's practice a good deal of time has been devoted to this project since it is so closely related to all crop production. Many trips have been made and much advice given relative to the advisability of applying water to certain crops. This has often been expert opinion altho an effort has always been made to show the reason for the decision. The main thot has been to increase the duty of water as well as the yield of the crop and at the same time have a due regard for drainage. While it is not possible to make a direct statement regarding the results of this work it is generally conceded that less water has been used this season to the benefit of the crop.

**FAIRS, EXHIBITS
& CONFERENCES.**

Absence of the County Fair Commissioner just prior to the date set for the County Fair made it necessary to do a great deal to make this event a success. The State Fair also claimed quite a little attention, partly because of the exhibit in connection with County Agents Work as shown by the Extension Service. An exhibit of Yuma County products was arranged at Somerton on the Fourth at the request of the Supervisors. The Yuma County Commercial Club calls for attention at frequent intervals, especially so of late because of the Government sale of land in December. Assistance was given the County Fair Comm. in the preparation of a exhibit for the International Soil Products Exposition held at Kansas City in October.

The writing of Projects, Reports and the attendance at Conferences have consumed more than 10% of the time.

Miscellaneous.

Under this head has been included all work in connection with Cotton Production and Cotton Ginning, Alfalfa as a hay crop, Wheat and other small grains, Grain Sorghums, Citrus Fruit growing, Specialists and other visitors, and the drag end of the work generally.

In conclusion it might be said that the year has been a fairly busy one and that the work as conducted has apparently been quite satisfactory to the farmers and business men of the county and especially so to the County Supervisors who are held responsible for the expenditure of the county appropriation.

Respectfully submitted,


County Agent.