

DRY FARM LESSONS THAT APPLY UNDER IRRIGATION

By CHESTER L. MARSH, '25

**Moisture Conservation, Selection of Varieties, and Timeliness of Operation
Are the Three Cardinal Principles of dry farming; and when
Strictly Adhered to Save Many a Dollar.**

The Prescott Dry Farm is one of the University Experiment Stations. It is located about 8 miles North East of Prescott, and at the present is under the supervision of Carl Clark, a graduate of the University of Arizona.

Two years ago there was but little rain and snow during the winter so that the supply of stored moisture was just enough to start the crops that were planted along in March. By the latter part of July, when the summer rains came, most of the crops had died, making it necessary to re-plant. But in spite of the lateness in planting, a crop of Russian Sunflowers matured for silage. This last year there was an abundance of moisture in the soil at the time of planting, which gave the crops an especially good start that carried them well past the time for the normal summer rains, but there were no summer rains. Less than two inches fell from May 10 to Sept. 10 and not more than .20 inches at any one time. Yet the crops were not a total failure on the Prescott Dry Farm, while on the other dry farms of that district there was so little vegetation that grasshoppers were forced out on the dry range to pick a living.

Why is it that on most places the crops meet with total failure while on the Prescott Dry Farm they were much more successful? Was it due to differences in soil, climate, or rainfall? No! These factors were practically the same in each case. The difference was that on the Prescott Dry Farm, extreme care was taken in the conservation of soil moisture, particular emphasis was placed on the selection of varieties, and the timeliness in performing the various steps was given careful consideration.

To the farmers in the Salt River Valley and similar projects, the conservation of moisture may not seem so important. Right now, however, the water in the Roosevelt Dam is quite low and the winter rains and snows, upon which the filling of the dam depends, are late. The farmers have been asked to save all the water



PAPAGO SWEET CORN ON THE PRESCOTT DRY FARM.

they possibly can, and it is not impossible that before the coming season is over they will be limited to an amount much less than they are accustomed to using. Personally, we see little need to fear.

To the farmers in the Gila Bend, Postvale, Casa Grande, and Wilcox districts, where water is pumped at heavy expense and the amount of water is extremely limited, moisture conservation is of great importance.

No doubt, by proper methods of irrigating and correct practices in the conservation of soil moisture, much of the cotton shedding, which was so pronounced this year and which represents a tremendous loss to the cotton growers, could have been held in check. So we see that soil moisture conservation is important and deserves much study.

There are two schools concerning the best method of saving the soil moisture. The first, believing that a dust mulch, produced at the expense of many cultivations, is indispensable in preventing rapid loss of water from the soil by capillary movements and evaporation. The second, and more recent belief, is that the capillary movement of water is so slow that the amount of water brought to the sur-

face of the soil and there evaporated is negligible. This latter theory has grown out of numerous experiments being carried out all over the country.

Which of the two theories is correct we do not know. At present Prof. S. P. Clark of the Agronomy department, here at the U. of A. is making an extensive study of this moisture conservation problem under the Dry Farm conditions at Prescott and the irrigation conditions at Mesa. It is hoped that he will be able to publish some definite results as soon as he has compiled the data gathered this season.

Now for the 3rd, and last factor. We all have, to a greater or less degree, that spirit of never doing today what can be put off until tomorrow. But if the farmer puts off too many things today, he probably will have nothing to do tomorrow when the harvest comes around. This timeliness in farming operations is one of the big factors in farm management, and although volumes have been written on the subject there is still much to learn. Under dry farming conditions, a weeks difference in planting means a great difference in yield. Fall plowing is incomparably better
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than spring plowing. Likewise, under irrigation there is an optimum time for each step. To know just when to plow, how soon to get on the ground after an irrigation or rain, just when to plant, when to cultivate, when to harvest and when to do a thousand and one other things is to know something that was learned by long experience and observation, and something that will mean more profit in the end. This knowledge is certainly worth working for.

These factors, moisture conservation, selection of varieties, and timeliness of operation have been taken up in relation to the Prescott Dry Farm, because, due to the adverse conditions there, they have a more pronounced effect on the yield than they do under irrigation. I do not mean that they are not important enough for consideration under irrigation, for they certainly are, and if the next time you see an article or hear some one discussing moisture conservation, selection of varieties, or timeliness in operation, you will not only be increasing your bank account but helping in the advancement of agriculture if you will but take heed of these three points.

What variety of cotton, corn, sorghum, alfalfa, or any other crop, shall I plant? This is a question that must not be passed up without consideration. The mere fact that Bill Jones raised a good crop of Early Baart wheat on his clay loam soil is no indication that it will do well on your type of soil. Feterita is a highly recommended dry farm crop, but at Prescott it produced only 1-5 as much insilage as the Japanese Honey Cane. It also happens that this latter variety is the heaviest yielding sorghum crop under irrigation. As for corn, the Mexican June corn yielded 4400 lbs. of ensilage per acre, while its closest rival, Duncan Dent Corn, yielded only 3120 lbs. When one can get 1-3 again the yield by selecting the proper variety, surely it is worth while. Of course these figures look small but when you consider the plots had less than two inches of rain, and no irrigation from the time they were planted until mature enough for silage, it is not so bad.



A BUMPER CROP OF CLUB TOP ON THE PRESCOTT DRY FARM.

Just remember that the selection of variety may mean the difference between success and failure. In general it is best to plant the variety that has stood the test over a period of years. When some seed company comes out with a new "Wonder Va-

riety", don't swallow hook, sinker, line, and all, but try the bait and if the sample plot proves successful, try a little more the next year, and when you are sure it is the best variety, stay with it until something is absolutely proven to be better.

A HORTICULTURAL PROSPECTUS

Did you ever stop to think that, with the exception of California, no other state has such a wide variation of soils and climate that are adaptable to the production of horticultural crops as Arizona. Our state can be divided into three general divisions horticulturally. The lower valleys, ranging in elevation from a few feet above sea level up to fifteen hundred feet, are well adapted to the production of such fruits as oranges, grape fruit, figs, dates, persimmons, pecans, olives, European table grapes, and winter vegetables. The central and eastern part of the state with an elevation of 1500 feet to 4000 feet is adapted to the growing of such fruits as the peach, plum, apricot, grape, and late fall and early spring vegetables. The northern part of the state with an elevation above 4500 feet is well adapted to growing of the more hardy fruits such as apples, pears, American grapes, cherries, berries, and late spring, summer, and early fall garden products.

The natural overlapping of these three divisions makes it possible to

produce fresh fruit and vegetables the year around. This fact is of tremendous importance to the future outlook of horticulture in the state. By cooperative selling it will be possible to place some Arizona products on the market every day in the year, and in so doing, to establish contacts that will insure a ready market for other horticultural products.

Another important fact is that the early season of many of the Arizona products make it possible to place the fruits and vegetables on the market at a time when the market is depleted of these products from a majority of the larger producing sections. This marketing advantage carries with it the assurance of high financial returns to the producer. As an example of this let us take the citrus industry of the state. At the present time the two principle kinds of citrus grown commercially in the state are the Marsh Seedless grape fruit and the Washington Navel orange. These two fruits mature and are placed on the market starting the latter part of October and are practically all on the