

# PROPAGATION OF DATE PALMS IN SOUTHERN ARIZONA

By L. C. Thayer, '29

Dates Are Propagated True To Type Only From Offshoots; Method of Rooting And Cutting Offshoots; Varieties Now Being Planted in Arizona

**D**ATES, unlike most other fruits, cannot be propagated true to type from cuttings, but can be propagated true to type only from offshoots. Mature offshoots are more likely to grow than are small unmaturing ones. Therefore, it is better to secure offshoots that weigh from 15 to 30 pounds. Offshoots with well-developed root systems should be secured, as they will recover more quickly after being transplanted than will those with poorly developed or no roots.

Late spring—April, May and June—is the best time for transplanting rooted offshoots. The palms are just starting into active growth and have a long growing period in which to become well established. Offshoots transplanted in the fall are usually failures. Although successful plantings can be made in mid-summer, the newly set palms will not become established as those planted late in spring.

Date palms should be planted 25 to 30 feet apart, if the square system is used. As a rule, other things being equal, palms planted farther apart will produce larger yields of fruit than will palms planted close together.

Planting Distances	Number of Palms per acre
25 feet by 25 feet	70
30 feet by 30 feet	48

The preparation of the holes is a very important matter in the successful planting of offshoots. In well-drained soils, holes should be dug not less than three feet wide and three feet deep. In compact soils the holes should be made at least four feet wide and four feet deep, and, in addition, should be blasted to insure good drainage.

The use of liberal amounts of stable manure in the holes, previous to planting, gives best results. It is essential, however, that the holes be dug and the manure applied several months in advance of planting, in order that the manure may become thoroughly decomposed. If the manure is used, the holes should be filled one-third to one-half full with well-rotted barnyard manure and this covered with about one foot of top soil. Water should be run into the holes every four or five weeks until time to plant the offshoots. At planting time the manure in the holes should be thor-



The Date, a Profitable Sub-tropical Fruit for Arizona

oughly decomposed, thus supplying an ideal medium for young roots and helping growth after the young palms become established. If the holes are dug just prior to planting time they should be filled in with surface soil and settled thoroughly with one or more irrigations before the offshoots are planted. Before the offshoots are planted a basin twelve inches deep and six to eight feet in diameter should be made around the hole. This basin serves several useful purposes. It facilitates thorough irrigation, and the rooting of subsequent basal offshoots, provides a receptacle for a manure mulch, and enables one to brace the mother palm by filling in the soil around the base of the tree after the period of offshoot production has passed.

In planting the offshoot, the base is set into the ground to the depth of its greatest bulb diameter. The offshoot should never be set deep enough to allow irrigation water to cover the crown or central bud. Top soil should be worked in around the roots so as to bring it in contact with every root of the palm. Irrigation should follow immediately afterwards. After the

irrigation water has drained away, soil should be filled in around the offshoot wherever the water has caused it to settle. Dirt should be banked up around the offshoot to a point just above the water level in the basin. A manure mulch should be placed over the entire area of the basin. This is important in order to maintain constant moisture and temperature conditions in the soil.

It is necessary for the offshoot to be provided with protective covering immediately after planting. A shade will lessen leaf evaporation, prevent sunburning, and tends to retard top growth until the roots have become well established. A burlap sack can be slipped over the top of the offshoot and tied at the bottom.

Frequent watering is essential, especially for the first seven or eight weeks. As a rule frequent light irrigations are much better than are heavy, less frequent ones. On light soils, for the first three weeks a light irrigation should be given every three to four days. If the soil is heavy, irrigations should be given every four to six days. During the rest of the grow-

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## THE STATE FAIR

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livestock, exhibited at this fair, are all examples of what is possible in the way of quality production, and serve as a measuring stick to guide the farmer in his efforts to produce the best. It is true that every farmer cannot produce the best, but seeing the best will better enable him to determine just how far he is falling short and give him a new determination to strive harder to reach the goal.

The State Fair, therefore, should serve as an incentive to the farmers of the state to produce the best and it is to the accomplishment of this ideal that it should be directed.

## SPECIALIZATION

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farm products, however, we do not wish to imply that diversification has not its value. Under the conditions generally encountered in the east at this time, it has its place, and since such is the case, it should confine itself to that region. Southwestern agricul-

ture is particularly well adapted for specialization, and only when this is fully recognized will our agriculture assert itself and take its rightful place at the top of the ladder of prosperity and progressive agriculture.

## DATE PROPAGATION

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ing season the offshoots should be irrigated frequently enough to keep the soil moist around the offshoot. The number of irrigations can be reduced during the winter months as long as enough water is applied to keep the soil in a good growing condition. The offshoots should be irrigated every week during the summer months after the first season.

Young palms should be wrapped with burlap during the first winter to protect them from killing frosts. The protection should be removed in the spring as soon as all danger from killing frosts has passed.

The varieties now being planted in southern Arizona are Awaydi, Deglet

Noor, Halawi, Hayany, Iteena, Klachavi, Khalasa, Kustawi, Mactum, Zahili.

If the dates are set out correctly and properly cared for they can be grown almost as successful as can the more common fruit trees. The date is suitable to the warmer sections of Arizona, and, in time, should take its place among the leading commercial fruits of southern Arizona.

## AGRICULTURAL ENGINEERING

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young man with an engineering bent and an attitude sympathetic to agriculture. O. W. Sjogren, chairman, department of agricultural engineering, University of Nebraska, and past president of the American Society of Agricultural Engineers, says, "As to the future of agricultural engineering, I cannot see anything but a bright future. If agriculture is going to rise from its present disparity as compared to manufacturing and the other industries of our country, it must make a greater application of engineering. Who is to do this best but the engineer who is familiar with agricultural methods? Agriculture must adopt the methods of other industries and increase the productive power per individual engaged in that industry. The only way that this can be accomplished most effectively is by a greater adoption of engineering methods. It is true that agriculture has developed by the aid of agronomists improving grain, by the animal husbandman improving breeds of various kinds of livestock, a greater study has been made of effective applications of fertilizers and in many other ways. All these agencies need equipment of the most efficient kind, which the engineer must design and, perhaps, in many cases, operate."



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