

Hole preparation

The actual digging of the hole is one of the last actions before planting takes place, but it must be emphasised that this is not the final preparation for the planting operation itself. This is the point where the required inputs such as gypsum and organic materials are worked into the soil.

It is recommended that a hole of 1 cubic m be prepared and that the soil from the hole be mixed with the organic material and gypsum. The soil mix is then put back into the hole, Afterwards the site is clearly marked for positioning of the small date palm plants.

At this stage, once the hole has been prepared and closed, it is irrigated. Subsequent irrigation, several times (2 to 3) before planting, will also allow the mixed soil to settle in the hole.

[Note – if you haven't pre-prepared the holes, dig them early in the day and water the area, then plant later on with more water.]

In most soils, the early and rapid growth of the date plant is better when the holes are prepared one to two months before planting. Well-rotted manure can also be used in holes prepared and irrigated shortly before planting, but extreme care must be taken to put the manure (and fertilisers) deep enough to allow a layer of soil at least 15 to 20 cm thick to be placed between the manure and the roots of the date plant.

Case Study – Gurra Downs, South Australia: Using a bobcat we drilled holes 600mm in diameter and 2.75 metres deep. The first 50cm or so of good sandy soil was set aside and the poorer calcrete soil heaped for removal.

Using a grader blade behind a tractor we dragged surrounding sandy soil into the hole. Before completing the backfill operation we primed the hole at a depth of 1 metre with 25kg of slow release organic fertilizer, rich in phosphorous and minerals. Hole spacings are 9 metres x 9 metres

Once the holes were backfilled, they were irrigated and allowed to settle for a few weeks. After they finished sinking, they were topped up and declared ready for planting.

Planting time and depth

Planting should always be initiated early in the morning to limit stress on the date plantlets and also to allow sufficient time for adaptation (from the plastic bag to the soil).

Bags are to be removed with care and the plant, with most of its surrounding substrate, to be planted carefully.

Planting is probably the area where most people make the vital mistake of planting the plant too deep. The planting depth is critical because the "heart" of the plant should never be covered with water. Once the plant is covered with water the growing point rots and the plant dies off. If a date plant is planted too shallow, its roots will desiccate and die.

The golden rule is to ensure that the greater diameter of the bulb of the plant is at the same level as the soil surface after transplanting and to ensure that water does not go over the top of the date plant.

Basin preparation

Immediately after transplanting, a basin is prepared around the palm to prevent run-off and to ensure a sufficient supply of water to the plant. When using a micro irrigation system, it is recommended to have a basin of approximately 3 m in diameter and 20 to 30 cm deep. The basin should have a slight downward slope towards the plant to allow the water to reach the root system of the young plant.

Mulching & Irrigation

Mulching is done by putting a layer of organic material (e.g. wheat straw) around the base of the palm. Mulching of the basin has the following advantages:

- Limits water loss from the soil through evaporation;
- Prevents crust formation;
- Allows better water penetration into the soil;
- Limits weed growth around the plant; and
- Improves the humus content of the soil.

Immediately after transplanting, the palm should be irrigated to limit transplant stress. Once the plantation is established, a frequent irrigation schedule is to be followed to allow sufficient water supply to the young date palm.

The irrigation frequency is soil type dependant, but on very sandy soils it requires daily irrigation during the first summer. Heavy soils will require irrigation once a week, while in most soils, irrigation is required every second or third day. During the first six weeks, the date growers should inspect their planted date palms to verify that the surface soil does not dry and shrink away from the plant.

Shade & Protection of Young Palms

[Source: Gurra Downs] We installed guards using two methods: old netting covered with shade cloth, and wooden stakes surrounded with windbreak fabric.



Above: Netting guards about the diameter of a 200 litre (44 gallon) drum, made up and covered in shade-cloth. These are good guards but time consuming to make. They are also re-usable but unsightly and awkward to store when not in use. Our preferred method was to use 4 wooden stakes 1.5" x 1.5" thick and staple windbreak fabric to them. These are quick and easy to construct, stakes are re-usable and stack for storage when not in use.

The shade-cloth fabric was folded over at the top and wired closed. The purpose of the guard was to provide protection from the extremes of summer and reduce the effects of

winter frosts. Guards were removed when the palms had outgrown them about 12-20 months later. The palms were considered hardy enough at this stage to withstand extremes without the comfort of a guard.

Organic Weed Control

Mechanical methods to deal with competing weed problems include using a weed mat for young palms, and introducing poultry to convert weeds and insect pests into fertiliser. A good fence will exclude wild dogs, foxes and cats, and allow you to run poultry such as Cape Barren geese.



Another method that Gurra Downs are adopting is the use of mulch to suppress weeds. They have been trialling the use of grapemarc, a by-product of the distilling process composed mostly of grape seeds and stems. After it is well composted, apply in a thick layer around the palm. This suppresses weeds, helps retain moisture and reduces evaporation. This black mulch absorbs heat through the day and releases it at night which adds a little insurance against potential major frost events. The marc is 4.2 pH which helps buffer our high pH soils. It contains good levels of potassium, as well a small quantity of other organic forms of minerals and trace elements.