



# DATE PALM

**NAANDANJAIN**

A JAIN IRRIGATION COMPANY

## INTRODUCTION

Date palm (*Phoenix dactylifera*) is a tree belonging to the *Arecaceae* family. It is grown mostly for its edible sweet fruit, which is becoming increasingly popular in the world. Date palms are relatively advanced on the evolutionary scale, and yet they have a long history of cultivation, dating back to ancient times. Date palms were originally grown in the Middle East, North Africa and the Near East. In some places, dates were cultivated thousands of years ago and were an important source of food. Today, dates are entering new markets and are being consumed in cultures that were formerly not familiar with this fruit. For this reason, date palms are considered a profitable crop. In some places in the world, the size of the areas in which dates are cultivated is continuously growing and expanding.



## CULTIVATION

Compared to other fruit plantations and orchards, date palms are usually planted in quite a dispersed way. In a well-managed plantation, spacing of 9 meters by 9 meters is standard, allowing about 120 trees per hectare. Date palms require heat and low humidity to set fruit and ripen to maturity. Therefore, this crop is usually found in a desert environment.

In hot and dry areas, the water sources are often saline. Date palms can grow on water with EC values of 4 Ds/m or more, without showing any sign of stress. Due to the natural adaptation of the date palm to an arid environment with saline water sources, it is possible to irrigate this crop with water of a low quality.



The propagation methods used with date palms today are very similar to the traditional methods used in ancient times. Most of the manufacturing of new plants is achieved with vegetative propagation, using offshoots in a method called “layering”. With this method, the grower encourages the offshoots to develop roots while still on the mother plant, thus ensuring their survival until they have developed enough to be planted on their own as part of a new plantation. This method is old, requires a lot of skillful handling, and takes a relatively long time. Despite these disadvantages, most young date palms are produced in this way. The use of tissue culture is not common because it can result in morphological distortions in the mature trees.



## IRRIGATION

Date palm is considered a heavy consumer of water. Depending on the time of year, the daily water volume per tree can range from 400 to 900 liters. The daily return can reach up to 100 cubic meters per day for each hectare.

Date palm can be irrigated by drippers or by sprinklers, but with both there should be high water flow.

Plantations using organic manures or composts should be irrigated with micro-sprinklers in order to properly integrate the manures into the soil, as is customary in organic agriculture.

As opposed to other types of cultivated palm trees, such as the oil palm, the irrigated area of the date palm is concentrated around the trunk of the tree and does not cover most of the plot, leaving most of the plantation dry.

In these circumstances, it is quite challenging—both for the grower and for the irrigation system itself—to provide these large amounts of water in such a short time, to such a limited area. NaanDanJain has developed a unique product called Turbo Drip, specially designed for optimal date palm irrigation!

## IRRIGATION SOLUTIONS

### TURBO DRIP

This unique dripper, pressure-compensated with extra high flow rates, is ideal for date palm irrigation.

- Self-compensating dripper with high flow rate
- Constant flow rate between 1.0-4.0 bar pressure
- Uniform irrigation and fertigation in all topographical conditions
- High resistance to clogging due to large, wide water passages
- Low maintenance emitter
- Easy to assemble and dismantle for maintenance purposes
- Made from chemical-resistant material

Turbo Drip with bayonet barb				Turbo Drip with 4/7 barb			
27 l/h	35 l/h	43 l/h	60 l/h	27 l/h	35 l/h	43 l/h	60 l/h



## MICRO-SPRINKLERS

### AQUASMART 2002

Ideal for organic plantations and the perfect solution for date palms, AquaSmart can be located anywhere near the trunk and meet this crop's high water requirements. It supplies the desired wetting area and is extremely efficient in integrating composts and manures in organic cultivation

- Constant flow rate between 1.5-4.0 bar pressure
- Uniform irrigation and fertigation in all topographical conditions
- Wide range of flow rates and distribution patterns
- Insect-proof nozzle
- Sturdy and solid structure
- Easy to dismantle and assemble
- Innovative spike with locking clip and water-stop aid
- Clog-resistant, even at lowest flow rates



## DRIP IRRIGATION

### NAANPC

Ideal solution for irrigation in topographically challenging terrain and where long laterals are required. For accurate irrigation of orchards and plantation.

- 16 mm and 20 mm polyethylene dripline with integrated pressure-compensating drippers
- Double water inlets and outlets per dripper
- Individual double filter and flushing mechanism for maximal clog resistance and self-cleaning



0.95 l/h



1.6 l/h



2.2 l/h



3.8 l/h

### AMNONDRIP

Ideal solution where long laterals are required. Optional Subsurface Drip Irrigation (SDI) and CNL for pulse irrigation.

- Pressure-compensating (PC)
- Efficient self-cleaning turbulence provided by the Cascade labyrinth
- 3D water inlet structure improves clog resistance
- High-quality silicone diaphragm

#### AmnonDrip PC



0.5, 1.1, 1.6, 2.0, 2.2, 3.8 l/h

#### AmnonDrip CNL



0.5, 1.1, 1.6, 2.0, 2.2, 3.8 l/h

#### AmnonDrip PC AS



0.5, 1.1, 1.6, 2.0, 2.2, 3.8 l/h



### TOP DRIP

For irrigation of long rows with high uniformity

- Pressure-compensating (PC)
- Efficient self-cleaning turbulence provided by the Cascade labyrinth
- 3D water inlet structure improves clog resistance
- High-quality silicone diaphragm

#### TopDrip PC



0.6, 1.0, 1.6, 2.0, 2.2, 3.5 l/h

#### TopDrip PC AS



0.6, 1.0, 1.6, 2.0, 2.2, 3.5 l/h



## FERTILIZATION

In nature, the date palm has adapted to harsh environmental conditions, including scarcity of available nutrients. However, due to the large amounts of water provided during cultivation, the nutrients tend to leach and the efficiency of fertilization is low. It is therefore customary to provide relatively large amounts of fertilizer.

The recommended portions are 300 kg/h N, 100 kg/h P, and 300 kg/h K. Of the nutrients, nitrogen is most likely to leach, but there are ways to reduce the loss of this and other nutrients. Consult one of our professionals for advice.

We, at NaanDanJain, are at your service regarding all aspects of the cultivation of date palms. Our products lead in the field of irrigation as a whole, yet at the same time provide the ideal solution for date palms specifically.





NaanDanJain is committed to finding the ideal solution for your Date Palm, tailored to your local climatic conditions, soil and water properties, and budget. Contact our office or your local dealer for further information.

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All information should be used only as a guideline. For specific recommendations contact your local agronomist.

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