

Dates and Figs

Date Palm (*Phoenix dactylifera L.*)

French: Dattier; Spanish: Palma datilera; Italian: Palma del dattero; German: Dattelpalme

Good quality staple food. Plant density under good growth conditions 100 - 140 bearing trees/ha. An adult palm contains 50 - 110 leaves with an average lifespan of 5 - 6 years. Potential fruit bunches develop in the internodes of new leaves. Transpiration by the leaves is about 320 litres water per kg leaves per year. The plant is relatively salt-tolerant, with almost no growth restriction up to 60 mmol salt per litre and about 60 % growth reduction at 1.2 % salt content. Yields 24 - 40 kg fruit per tree per year in hot desert areas with restricted water supply. In some areas in Egypt, yields up to about 12 t/ha fruit are obtained under intensive management.

N uptake when in bearing: approx. 650 g N/tree/year (assuming 50 kg dry matter/tree/year, containing 400 g N, in new vegetative tissue, and 70 kg edible portion of fruit/tree/year, containing a further 250 g N).

Plant analysis data:

Plant analysis data - Macronutrients								
Plant part	N	P	K	Mg	Ca	S	Na	SiO ₂
Leaves	(% in dry matter)							
(38-43 % DM)	0.68- 1.04	0.08- 0.12	2.1-3.9	0.2-0.5	0.13-0.5	0.09- 0.13	0.02- 0.11	0.2-0.3
Fruit	(% in edible portion)							
(22.5 % DM)	0.35	0.063	0.65	-	0.059	-	0.001	-

Fertilizer recommendations:

In India, 1.8 - 2.7 kg N/tree/year are recommended for maintenance of trees in bearing. This should be applied in conformity with the seasonal growth pattern, i.e. during periods of active growth and water availability (irrigation too should be adapted to the growth rhythm; in Iraq it is recommended that the majority of irrigation water should be supplied during the 5 - 7 months of active growth and bunch development).

In Egypt El-Hammady et al., 1987 recommend 0.5 kg N/tree/year in three split dressings, plus 165 g K₂O/tree to increase fruit yield. Fertilizer may either be broadcast, coupled with appropriate irrigation, or may, if the equipment is available, be applied through drip irrigation (which improves the efficiency of use of both water and fertilizer).

Optimal use of locally available organic materials may be achieved by application of rapidly decomposing leguminous green manures (assisted by application of P fertilizer) and/or farmyard manure, by recycling of litter and by protecting the soil surface with mulch.

Fig (*Ficus carica L.*)

French: Figuier; Spanish: Higuera; Italian: Fico; German: Feige

A tree crop which is rather drought-tolerant and salt-tolerant but will not withstand high pH. Pruning to increase fruit size may start when the tree is large enough but during the first four years the prime interest is in vigorous plant growth. Removal of non-flower-bearing wood and

activation of dormant wood are commonly practised. Young plants with open tissue surfaces (resulting from propagation techniques) need protection from intensive insolation. Plant densities range from 40/ha under conditions of water stress to around 150/ha in ordinary plantations and to more than 1 000/ha where trees are headed back to a small size.

N uptake when in bearing: approx. 930 g N/100 kg fresh fruit (assuming a dry fruit/fresh fruit ratio of 0.35, with 0.47 % N in the dry fruit, and 1 kg dry leaves per 1 kg dry fruit, with 2.22 % N in the dry leaves).

Plant analysis:

Plant analysis data - Macronutrients						
Plant part	% of dry matter					
	N	P	K	Mg	Ca	Na
Leaves	2.0-2.5	0.1-0.3	1.0-1.6	0.8	3.0-3.6	-
Fruit	0.47	0.057-0.070	0.57-0.68	0.06	0.13-0.17	0.01

Fertilizer recommendations (India)

Young trees, 36 g/tree/year fertilizer N and 7 kg/tree/year farmyard manure.

Fully grown trees, 144 g/tree/year fertilizer N and 30 kg/tree/year farmyard manure. A typical nutrient content of fresh farmyard manure from cows in India may be taken as 15 - 55 kg N, 1.5 - 2.5 kg P₂O₅, 3.5 - 6 kg K₂O and 1 - 1.5 kg MgO per 1 000 kg. Under conditions of regular annual application resulting in steady state decomposition (decay of manure = supply of manure), the recommended 30 kg farmyard manure correspond to 45 - 165 g N, so the total N recommendation for fully grown trees, including fertilizer N, amounts to about 200 - 300 g N/tree/year. Assuming 300 trees/ha, this corresponds to 60 - 90 kg/ha/year. The timing of N fertilizer application should be in accordance with seasonal growth rhythm and availability of soil water. Where fertilizer P is also needed, and 90 kg/ha fertilizer N is given annually, 40 kg/ha P₂O₅ may be applied in the form of superphosphate or available NP-fertilizers.

Further reading

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