

The Oil Palm – Fact File

Origin Riverine region of tropical rain forests of West Africa.

Botany *Elaeis guineensis* Jacq. Family of *Palmae*, subfamily *Coccoïdae*. Monoecious (both male and female flowers produced on the same plant). Eight leaves (fronds) are produced in successive leaf spirals. Five spirals of leaves are retained on each mature tree (i.e., 40 leaves). Leaf production rate is between 1 to 3 leaves per month. The time between the initiation of a female flower and the production of a ripe bunch is about 44 months.

Cultivars *Dura x pisifera* hybrids, referred to as *tenera* palms, are the most widely used planting material. Tissue cultured “clonal” palms are presently being developed world-wide.

Harvested part Fruit bunches (sessile drupe) contain fruitlets. Bunch weight increases from about 5 kg (three years after planting) to about 50 kg (>15 year old palms). Each fruitlet contains oil in the mesocarp (45 to 55 percent oil) and kernel (50 percent oil). Palm oil extraction rate from fresh fruit bunches (FFB) ranges from 20 to 25 percent. Kernel extraction rate ranges from 4 to 6 percent.

Life cycle Perennial. Wild palms have a life span of up to 200 years. Commercial palms have an economic life span of 20 to 30 years.

Phase	Duration
Nursery	10 to 12 months
Immature phase	24 to 30 months
Production:	
Steep ascent phase	Year 3 to 10
Plateau phase	Year 10 to 15
Declining phase	Older than 15

Maximum yield 46 tonnes FFB/ha, equivalent to 10.6 tonnes crude palm oil (CPO) and 0.9 tonnes palm kernel oil (PKO). Yields greater than 12 tonnes CPO/ha have been reported for clonal oil palms. Harvesting of FFB takes place every 7 to 14 days.

Nutrient removal in fruit bunches	kg				
	Yield	N	P	K	Mg
1 tonne FFB	2.94	0.44	3.71	0.77	0.81
25 tonnes FFB	74	11	93	19	20

Micronutrient requirements Boron, copper (peat soils, sandy soils), zinc, iron (coral soils).

Planting density Ranges from 120 to 148 palms/ha (to 160 palms/ha on peat), depending on planting material, soil, and climate. Wider plant spacing is used where growing conditions favour vegetative growth and vice versa. Palms are planted using a triangular spacing pattern. The most common spacing is 143 palms/ha, with palms planted on a 9 m x 9 m triangular spacing.

Climatic requirements Low altitude (less than 500 m above sea level), 15° from the equator in the humid tropics. Evenly distributed rainfall of 1,800 to 2,000 mm/year, but will tolerate rainfall up to 5,000 mm/year, provided the soil is properly drained. Oil palm is sensitive to poor drainage and drought. Potential yield is reduced where there are more than three consecutive months with less than 100 mm rainfall per month. Irrigation may increase economic returns in areas with pronounced dry periods. More than 2,000 sunshine hours (i.e., low cloud cover during daytime).

Soil requirements Adapted to a range of soil types. Tolerates low pH, but does not thrive at very high pH (greater than 7.5). Soil must be free draining. **BCI**