

Twenty-Two Tips for Practical Oil Palm Planters

By E. Mutert and T.H. Fairhurst

Nursery phase

1. Select a suitable source of soil for bag filling (i.e., loamy soil, but not peat or “heavy” clay soil).
2. Select an appropriate irrigation system, based on the characteristics of the water supply (e.g., silt load, quantity available).
3. Incorporate sufficient phosphorus (P) fertilizer in the soil to be used for bag filling.
4. Maintain a properly designed program of nursery fertilizer application and apply fertilizers carefully to avoid leaf scorch. Do not over apply fertilizer.
5. Install a system of open drains to prevent standing water after irrigation events. Install shade (shade netting) in the pre-nursery and in the main nursery (nipah fronds) as required.
6. Cull out all seedlings showing abnormal traits (e.g., runt, narrow leaf, erect type, and fused pinnae).
7. Plan nursery planting so that seedlings are ready when land clearing has been completed. Avoid planting “over-aged” seedlings.



(At top left) A section through a “cut back” seedling ready for planting shows that flower initiation has already begun. Planting shock will cause these potential female flowers to abort.

(At top right) Response is reduced when potash fertilizer is incorrectly applied in a narrow band around the base of the tree.

(At bottom left) Correctly applied potash fertilizer.

(At bottom right) Properly spread urea is uniformly distributed across the application zone.



New development and immature phase

8. Prepare the field for planting properly. Planting points should be properly lined and each point cleared of debris. Avoid planting palms amongst tree stumps and logs that remain after land clearing.
9. Establish a full, vigorous stand of legume cover plants such as *Pueraria phaseoloides*, *Calopogonium mucunoides*, or *Centrosema pubescens* before planting. On low fertility status soils, apply sufficient mineral P and potassium (K) fertilizer to produce rapid canopy development (i.e., 115 to 300 kg P₂O₅/ha and 35 to 60 kg K₂O/ha).
10. Apply sufficient P fertilizer in the planting hole (i.e., 0.05 to 0.1 kg P₂O₅/palm). Mix the P fertilizer with the topsoil before packing the soil around the seedling.
11. Plant seedlings at the correct depth. In mineral soil, the bole should be level with the surrounding soil. In peat soil, use the “hole-in-hole” method after compacting the peat with heavy machinery. Always compact the soil around the seedling during planting as this helps reduce the incidence of planting shock.
12. Install a network of main and field drains to avoid the occurrence of standing water, which results in the appearance of nitrogen (N) deficiency symptoms.
13. Apply sufficient mineral fertilizer for rapid vegetative growth and canopy closure and a short immature phase (i.e., 24 months to first harvest). Wherever possible apply empty bunches as mulch around each planted point at 150 kg/palm.
14. Maintain a proper upkeep program of circle weeding to minimize competition between palms and the legume cover plants and other competitive creeping weeds such as *Mikania cordata* and *Merrimia umbellata*. Carry out regular rounds of supply planting to avoid the occurrence of vacant points due to dead or diseased palms.

Mature phase

15. Clear all palm circles of debris and establish clean circles before commencing harvest. Carry out a census to establish the number of productive and healthy palms.
16. Upgrade main and harvest roads to allow vehicular access to all fields, even during wet weather.

(At left) Properly planted supply palm.

(At right) Applying 0.5 kg ground magnesium limestone (GML) in planting hole on peat soils.



17. For the first three years, harvest bunches without removing the subtending frond to maximize green, productive frond retention during the phase of steep yield ascent.
18. Make optimal use of nutrients contained in empty fruit bunches and pruned fronds by proper recycling and spreading.
19. Maintain a program of balanced fertilization, based on the results of soil testing and leaf analysis.
20. Establish a simple fertilizer monitoring system using six whole fields as plots and including the following six treatments: Standard Estate Practice (for a particular leaf sampling unit), half N, half K, double N, double K, double N and K.
21. Introduce an independent monitoring unit to evaluate field conditions against agronomic standards defined in field handbooks (e.g., upkeep, fertilizer application, harvesting, and pruning...see page 52).
22. Introduce a computerized database system (e.g., OMP7...see page 52) to store, analyse and retrieve agronomic data. **BCI**



Severe planting shock due to careless planting.

Dr. Mutert is Director and Dr. Fairhurst is Deputy Director, PPI/PPIC East and Southeast Asia Programs.

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(Top left) High yields are the product of a high number of large fruit bunches per palm. Both of these factors are strongly influenced by palm nutrition and canopy management (planting density and pruning).

(Top right) On steeply sloping land, palms should be planted on terraces to improve access for harvesters and prevent soil erosion.

(Middle left) An aerial view of an oil palm estate and factory.

(Middle right) Properly arranged frond stacks and a well established mixture of ground cover plants under a mature palm stand.

(Bottom left) Leaf sampling teams must be properly trained to identify Frond 17.

(Bottom right) Mechanised fertilizer application is feasible where labour is in short supply and terrain is not too steep.

