

2009

November

## Resumption of Manuring and Its Impact on the Nutrient Status, Growth and Yield of Unfertilised Oil Palm

MANJIT SIDHU, CHEONG KENG KONG, ZULKASTA SINURAYA, MARTIADI KURNIAWAN AND  
ABDUL HASYIM

*Asian Agri Group, R&D Centre, Bahilang Estate, Tebing Tinggi, Deli, North Sumatera, Indonesia*

*A part of an existing NPK factorial fertiliser trial was used to assess whether unfertilised and poorly grown oil palm could be rehabilitated to achieve their site yield potential. The trial also provided an opportunity to gauge the “time-frame” and fertiliser rates required to achieve full recovery in palm nutrient status, vegetative growth and FFB production. Manuring was restarted in two out of three zero-fertiliser (N<sub>0</sub>P<sub>0</sub>K<sub>0</sub>) replicates which had been unfertilised for four consecutive years and their responses compared to palms that have been fertilised continuously since field planted.*

*The first large response to manuring commenced approximately nine months after application of fertiliser due to a large increase in bunch number and to a lesser extent, bunch weight. At lower fertiliser rates (8.5 kg/palm/year), FFB yield recovery peaked at 85 per cent (28.2 t/ha), four years after fertiliser commencement. However, with higher fertiliser inputs (11.5 kg/palm/year), 100 per cent recovery or a peak FFB yield of 36.0 tonnes per hectare per year was achieved, but only after six years.*

*Due to severe retardation, recovery in growth of unfertilised palms took much longer than FFB production. After six years, even palms refertilised with the higher rate were poorer in growth than those continuously fertilised. Nevertheless, refertilised palms were deemed to have attained optimum growth in view of their full yield recovery.*

*Correction of N and P status in previously unfertilised palms was very rapid, occurring within one year and on par with fertilised palms after two years. Correction of K status was slightly slower, requiring two years with the higher rate and five years with the lower rate. Renewal of fertiliser inputs had very little effect on soil N content, but improved soil P, K, Ca and Cl levels over a short period of time.*

*The trial results confirm that with judicious fertiliser inputs and best management practices, “neglected palms” could be fully rehabilitated even on very poor soils, to achieve their site yield potential within a time-frame of approximately six years.*

**Keywords:** Fertilisers, oil palm, rehabilitation, yield recovery.