



NEWSFLASH : Transfer of fertilizer recommendations from commercial plantations to oil palm smallholders

Sep 20, 2013. Penang, Malaysia – Site-specific fertilizer recommendations are now possible for individual smallholder oil palm growers. By adopting a framework that incorporates pre-existing soil maps and Geographic Information Systems (GIS), smallholders will now be able to use valuable nutrient management information generated by commercial plantations to advise their fertilizer management strategies.

One of the biggest challenges faced by smallholders is the lack of comprehensive information for appropriate fertilizer management, unlike commercial plantation owners who have the resources to develop them. For smallholders in Papua New Guinea (PNG) who account for approximately 40% of total area under oil palm, their contributions to the national palm oil production is only 33%. This is an obvious gap in productivity that can be attributed to nutrient deficiencies and ineffective nutrient management.

Improving fertilizer management will greatly increase productivity and profitability for these smallholders in PNG. Yet, making appropriate fertilizer recommendations are difficult due to the large number of smallholders, and variability in climate, soil or crop management.

Using soil map information and GIS, the physical attributes of commercial plantation management units are matched to smallholder blocks that have been geo-referenced and entered into the GIS. Soil maps are then used to split the management units and smallholder blocks by soil type. Each soil type has a specific fertilizer need, so recommendations can be pre-calculated using commercial plantation data from comparable fields.

Appropriate fertilizer recommendations specific for soil type can now be made. While within-block variability in soil fertility may occur in the smallholder blocks, this framework eliminates a lot of the guesswork, providing solutions that region-wide standardized fertilizer recommendations do not account for.

In addition, smallholders can estimate potential yields (from plantation data) and determine the increase in economic gains should they follow fertilizer recommendations derived from the commercial plantations. By adopting these proven, site-specific fertilizer recommendations, oil palm smallholders stand to increase their overall productivity, and enjoy greater economic returns on their investment.

This approach developed in PNG, and which can be replicated elsewhere, is an excellent example of how transfer of knowledge generated in a commercial plantation can help with implementing 4R Nutrient Stewardship in oil palm smallholder systems.

Source: Webb, MJ, Nelson PN, Rogers LG, Curry GN, Pasuquin JM, Johnston A (2012). Site-specific fertilizer recommendations for oil palm smallholders using information from large plantations. Better Crops. Vol. 96 (4):10-12.

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