To increase oil yield from palms, you have to measure it

October 20, 2014. Penang, Malaysia – Oil palm has been commercially cultivated in Southeast Asia for more than a century. Its primary product, fresh fruit bunches (FFB) are highly perishable and once harvested, must be processed rapidly to extract the crude palm oil, a highly-valued commodity.

Interestingly, while the FFB received at palm oil mills is graded for various criteria that may affect the milling process, there is no estimate of oil content made. Milling efficiency is determined through estimates of losses in different stages of the process, instead of employing a balance between oil entering the mill and oil extracted, as is practiced with other perishable crops such as cassava and sugarcane.

Oil extraction rate, the key performance indicator for palm oil mills, is not necessarily related to the oil contained in the crop milled. Based on the principle of “what you do not measure you cannot manage”, it is clear that oil palm growers and millers do not have all the information needed to properly manage and increase palm oil yields.

The International Plant Nutrition Institute’s Southeast Asia Program (IPNI SEAP) has shown that best management practices implemented in the field to maximize FFB yield may not be compatible with raising oil extraction rates. Thus, targeting higher oil yield through a combination of high FFB yield and high oil extraction rates – such as the ‘vision 35:25’ target in Malaysia’s Economic Transformation Plan – may not be successful.

Oil is produced in the fields so that is where measurements should begin. Growers should institute measures (including harvest audits and oil content analysis) to determine their field oil recovery efficiency and the estimated oil content (EOC) of harvested FFB. In a similar vein, millers should investigate methods to determine the EOC of FFB received for processing. Knowledge of pre-milling EOC would encourage them to measure mill oil recovery efficiency, which is a better indicator of mill performance than oil extraction rate.

Using these recovery efficiency measures in the field and at the mill would ensure comprehensive analysis of the overall oil recovery process and clarify the efficiency of their operations. In addition, knowledge of EOC puts the onus on mills to remunerate growers fairly, i.e. based on the oil content of their crop. This may prove to be a huge incentive for growers to improve their field oil recovery efficiency.

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About IPNI
The International Plant Nutrition Institute (IPNI) is a not-for-profit, science-based organization dedicated to the responsible management of plant nutrition for the benefit of people. Through cooperation and partnerships with respected institutions around the world, IPNI adds its strength to agronomic research, education, demonstrations, training, and other endeavors. Best management practices for nutrient stewardship encourage the concept of 4Rs - applying the right nutrient source, at the right rate, at the right time, and in the right place. To learn more about IPNI, please visit: www.ipni.net

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Field Oil Recovery Efficiency is the efficiency with which the oil produced in the field (i.e. contained in the FFB) is recovered at harvest. The efficiency would be 100% if all available ripe bunches were harvested and there were no post-harvest crop losses.