



NEWSFLASH: Yield gaps in oil palm: IPNI Southeast Asia study shows huge potential for increasing yields in existing Indonesian plantations

January 26, 2017. Penang, Malaysia – Assessing attainable yield of oil palm is the key for sustainable site-specific intensification of production. By calculating the difference between attainable yield and actual yield, we obtain the yield gap, which indicates the scope for yield improvements through management. According to Dr. Munir Hoffmann, lead author of an International Plant Nutrition Institute (IPNI) / University of Göttingen study on yield gaps*, such site-specific estimates have rarely been done with oil palm until now.

The IPNI study proposed a revised analytical framework for yield gap analyses in oil palm, which was then used to quantify existing yield gaps at plantations located in Indonesia and Malaysia covering an area of 38,300 ha. The approach allowed for estimating the yield that can be achieved without additional irrigation but otherwise optimal management and environmental conditions, i.e., water-limited potential yield. However, management and growing conditions are variable, and final attainable yield is lower than the water-limited yield.

IPNI found that water-limited potential yield did not differ very much between sites: 35-39 t fresh fruit bunch during the plateau phase, the most productive phase in the life time of a palm. Attainable yields were in the range of 26-31 t/ha of fresh fruit bunch.

This led to marked differences in the gaps between the analyzed four sites. Site 1 did poorly with a gap of over 33% of water-limited attainable yield. Sites 2 and 3, intermediate with gaps of 24 and 22%. Site 4 did well with a gap of just 11%. Overall, the plantation firm forgoes an estimated US\$ 3 million of gross annual income when yields are less than possible. Application of IPNI's analytical framework can guide oil palm operators to systematically improve yields through targeted management change.

** The findings of the study were recently published by Hoffmann et al. (2017) as "Yield gap analysis in oil palm: Framework development and application in commercial operations in Southeast Asia" in Agricultural Systems 151:12-19.*

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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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