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Marker-Assisted Selection and Its Application in Breeding for High Yielding Short Palms: The FGV Approach

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While the primary objective of oil palm breeding is high yield it is also desirable to have slower growing palms, hence, the various attempts to breed for shorter height increment. The breeding challenge is that all known genetically short palms are generally low yielding whereas current breeding stocks for high yield DxP are also for relatively tall palms. Combining high yields and dwarfness will take many years of breeding and selection. The genetic control of height increment suggests that the breeding can be more efficient with marker-assisted breeding (MAB), using markers linked to the trait. At FGV R&D the MAB approach for smaller height increment (HI) is being pursued. HI linked QTL markers have been identified from a high yielding cross and prediction models developed based on their distribution in 120 crosses ranging from very tall to short tall types. New crosses will be created from the model prediction and trialled against crosses based on phenotypic selection.

***Keywords**: Marker-assisted selection, breeding application, oil palm, short palm, height increment, QTL.*