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Evaluation of Two Fruit Typing Methods and Their Use in Assessing the Purity of Commercially Planted Topaz D x P Oil Palm Replants

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A high level of dura contamination can significantly reduce oil yield and oil extraction ratio (OER). Recent surveys carried out in oil palm nurseries, independent estates and the commercial sector in Malaysia by the Malaysian Palm Oil Board (MPOB), indicates that dura contamination remains a serious concern. Although no recent survey data is available from Indonesia, field visits to medium and smaller estates suggests a similar problem also exists there.

Although genetic tools are now available for fruit typing, a simple, quick and practical survey method is still required, especially during due diligence visits to brownfield plantations up for acquisition, where quick decision making is required. This paper reports on the results of an investigation comparing the accuracy of two survey methods, namely individual palm survey (IPS) versus harvester platform survey (HPS) and the use of both methods to assess the purity of Topaz D x P seedlings planted in progeny trials and in commercial second generation replants in Asian Agri estates in Indonesia.

Results of the investigation conducted in three fields with varying levels of dura contamination [low, medium, high], showed that inspecting harvested fresh fruit bunches (FFB) on 20 per cent of roadside harvesters platforms (HPS) was just as reliable as fruit typing individual palms (IPS) in the field. No significant differences were recorded between the two methods. At medium to low contamination levels, HPS tended to slightly over estimate contamination levels but differences were small and within acceptable range. As HPS is based on inspecting ripe and harvested FFB, it excludes counting of pisifera palms which are female sterile and bunches abort before maturity. Nevertheless, numbers of the latter in commercial fields were found to be low or negligible. The HPS method was also easier to conduct, faster and less labour intensive than IPS. However, if an individual palm survey was required, inspection at 5 to 10 per cent intensity was just as accurate as 100 per cent palm inspection.

IPS was used to assess the purity of new Topaz D x P progenies planted in 18 breeding trials established from 2003 to 2010. Out of the 28 772 palms individually inspected, only five palms were non-tenera [0.02%] and were detected in only four out of the 18 trials.

The HPS was comprehensive, covering three provinces and a total of 14 estates which had undergone replanting from 2006–2016. Approximately 4 800 hectares were randomly surveyed encompassing 161 field blocks and 2 677 harvesters platforms (20 per cent). Out of over 25 000 FFB fruit typed, only 33 FFB (0.13 per cent) were found to be of dura type. Such low levels of non-tenera contamination in both the progeny trials and commercial fields are a testament to the excellent quality control measures implemented by Asian Agri R & D's seed pollination unit and a guarantee on the purity of Topaz D x P seed.

Keywords : Contamination, dura, D x P, oil palm, Topaz.

