

Interactive comment on “Formation and characteristics of an Ultisol in Peninsular Malaysia utilized for oil palm production” by Arolu Ayanda Fatai et al.

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NO. Referees comments Author's response Page No 1 The abstract does not support the study. The abstract has been revised/improved. The title of the paper has been re-phrased. 1. 2 The study objectives are very confusing. The objective has been re-phrased. 3. 3 The study area is not clearly designated. This has been explained in the methodology. Additional information has been added in the text 3. 4 The soil sampling was not clearly stated. Additional information has been added in the text 3. 5 What is meant by conventional soil sampling? This is the method commonly used in Peninsular Malaysia (Paramanathan, 1987), following standard soil survey techniques

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used worldwide (for example FAO). Sentences the text have been revised/improved accordingly. 3. 6 The author stated that based on colour and texture, the soil is mainly one series. How did the author come to such a conclusion using two parameters only? We have checked the geology of the study area. The soil is developed from the same parent material. In Peninsular Malaysia, the first criterion to define soil series is parent material. We checked the soil colour, texture and others as required for the identification of soil series (Paramanathan, 1987) in detail throughout the area using a soil augur during the detailed soil survey (the distance between observation points was 100 m). Sometimes we also checked the soil in between. From these observations, we concluded that only one soil series existed in the study area. Therefore, we dug a soil profile at a suitable site in the study area to study the soil in detail – for its mineralogy, chemical properties and classification (Soil Taxonomy). 3 7 Scientific methods and references are not clearly stated. Methods and references have been checked and improved accordingly 8 Page 10, figure 4 is highly unacceptable. The fundamentals of soil description are highly flawed. The use of machinery clearly demarcates the horizon. The measuring tape is not clearly indicative of soil depth. We have problem with drought during the period of the study, particularly when soil pit was dug. There was no rain for a month soon after finishing the soil survey. We hired a contractor to dig up the soil pit. Bera is far from our university. We to travel about 400 km after the soil pit was dug. The soil was dry and hard – like rock. With over 70% clay content, it was like cement. Difficult even to get the soil sample, let alone to smoothen the soil profile during observation. So we decided to let stay as it was. With difficulty, we described the soil profile. The clay skin (cutans) remained intact and so were the roots, fine and coarse. That was the best we could under the circumstances. We determine soil depth using another tape. The one shown in Figure 4 is just for taking a photo of the soil profile. 10 9 The author stated Jempol series. This is likely based on local soil series. What is the International equivalent (classification) of this series based on USDA soil taxonomy? How the author did came to conclusion of Jempol series. Comparative data from past study is missing. Jempol Series is the series as

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defined by the System of Soil Classification in Peninsular Malaysia (Paramanathan, 1987). The taxonomic classification of the soil is given later, in page 16. The profile was similar to the profile studied earlier by Tessens and Shamshuddin (1983), located 50 km away 10 16 10 Based on what soil suitability was conducted, the explanation and representation were not supportive at the least The evaluation was based on the criteria given in Table 6, page 17. This table was prepared by Shamshuddin et al (2015). Data presented in the data were obtained from various sources, including those reported by the experts who evaluated soils for oil palm production in Malaysia. 17 11 Grammar and syntax error throughout the manuscript The grammar and syntax have been improved Throughout the paper 12 References format and please recheck. The format and references have been checked and improved accordingly.

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