

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Morphological diversity among the Senegal and Gambia oil palm germplasm was well defined by both principal component and clustering analyses. Considering the different morpho-bio-agronomic descriptors, it has been possible to observe a noteworthy inter and intra-group diversity. The characters that were dominants in the first components are closely related to yield and yield components; while vegetative and physiological traits like the radiation conversion efficiency (e), fractional interception of radiation (f) and leaf characters were associated with second components and other extracted components. The fatty acid traits were not that dominant on the extracted PCs. This recommends the likelihood of attaining, through selection, suitable genotypes combining high yield with desirable traits for direct release as cultivars in the Malaysian Palm Oil Board (MPOB).

Cluster analysis also aided in distinguishing accessions on the basis of their different levels of similarity. Six groups were identified with precise differences according to the extracted principal components. Compared with other groups, cluster-III showed highest mean values for yield traits. With the exception of cluster-IV which had lowest mean value for yield traits, all other groups had moderate to high values of yield and yield related traits. The cluster analysis however, provides valuable information in order to utilize directly the most promising accessions for production (for example SSC 3, SEN 09.04) or for future usage in selection programs. Furthermore, there was no consistency in assigning of members to groups, as accessions from different geographical origin were placed together.

However, caution must be taken as regard the accessions because they are an expression of linked genetic and environmental effects, i.e. findings were based on morphological traits which are usually influenced by environment. Therefore, further studies should be undertaken to ascertain the claims of this study. For example, molecular techniques which are more precise and are not affected by the environment can be conducted to further verify the findings from this study. The findings of this research will however be of utmost help to researchers, plant breeders and policy makers.

