

**Genetic diversity of *Elaeis oleifera* (HBK) Cortés and interspecific hybrids OxG
from different origins**

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Abstract

During recent years in Colombia *E. oleifera* species has been a valuable genetic resource in the production of interspecific hybrids of *E. oleifera* (H.B.K) Cortés x *E. guineensis* Jacq., to address some phytopathologic problems in palm cultivation. However, it was observed that the agronomic performance, including its apparent tolerance to diseases, like bud rot and lethal wilt depends on the origin of the parents, especially the *E. oleifera* genitor. In this work, accessions of *E. oleifera* from different origins and hybrids (OxG) were evaluated using microsatellite markers in order to determine diversity parameters and population structure. Among the results of *E. oleifera* it was observed a wide range of genetic diversity where the highest value belonged to the obtained accessions from Colombia ($H_e = 0.501$), followed by Brazil ($H_e = 0.453$), Peru ($H_e = 0.425$) and the lowest value of diversity was obtained for the Ecuador palms ($H_e = 0.113$). Within the studied sources it was exhibited a big genetic differentiation ($G_{ST} = 0.508$), which was consistent with the formation of four groups, each having specific alleles, that correspond to the country of origin. These results allow us to infer that these populations of *E.oleifera* have independently evolved, probably because of geographical isolation. The evaluated hybrids were highly heterozygous, with the genetic diversity values for Coari x La Me ($H_e = 0.598$) and for Cereté x La Me ($H_e = 0.627$). The location of these hybrids within the dendrogram was determined according to the origin country of *E. oleifera*.