**Table 3: Parentage and origin of oil palm progenies**

|  |  |  |  |
| --- | --- | --- | --- |
| **S/NO** |  **CODES** | **ORIGIN** | **TYPE OF FRUIT**  |
| 1 | P3 | A cross between Aba and Calabar | Nigerian Tenera |
| 2 | BB4 | An Ecuador Deli | Deli Dura |
| 3 | P8 | A cross between Ufuma and Angola | Nigerian Tenera |
| 4 | P1 | A cross between Ufuma and Aba | Nigerian Tenera |

Table 4: Allele frequency, number of alleles, genetic diversity and polymorphic information content of ISSR markers

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S/NO** | **Marker** | **Major allele Frequency** | **No. of obs.** | **Allele No** | **Gene Diversity** | **PIC** |
| 1 | ISSR 890 | 0.2500 | 8.0000 | 5.0000 | 0.7813 | 0.7456 |
| 2 | ISSR 836 | 0.2500 | 8.0000 | 6.0000 | 0.8125 | 0.7861 |
| 3 | ISSR 827 | 0.7500 | 8.0000 | 3.0000 | 0.4063 | 0.3706 |
| 4 | ISSR 858 | 0.3750 | 8.0000 | 6.0000 | 0.7813 | 0.7544 |
| 5 | ISSR 818 | 0.3750 | 8.0000 | 4.0000 | 0.6875 | 0.6299 |
| 6 | ISSR 888 | 0.3750 | 8.0000 | 4.0000 | 0.7188 | 0.6675 |
| 7 | ISSR 889 | 0.5000 | 8.0000 | 4.0000 | 0.6563 | 0.6050 |
| 8 | HB-12 | 0.3750 | 8.0000 | 4.0000 | 0.7188 | 0.6675 |
| 9 | ISSR 868 | 0.3750 | 8.0000 | 5.0000 | 0.7500 | 0.7119 |
| 10 | ISSR 826 | 0.3750 | 8.0000 | 5.0000 | 0.7500 | 0.7119 |
|  | Mean | 0.3750 | 8.0000 | 4.9091 | 0.7216 | 0.6829 |

PIC= Polymorphic information content based on ISSR polymorphic markers applied

**Table 5: Genetic diversity parameters generated from the different oil palm progenies using ISSR markers**

**S/No Name Sample Size Na Ne H I**

============================================================

 1 120 Susce 70 2.0000 1.9600 0.4898 0.6829

 2 2211 Susc 70 2.0000 1.9429 0.4853 0.6784

 3 3023 Susc 70 2.0000 2.0000 0.5000 0.6931

 4 2478 Susc 70 2.0000 2.0000 0.5000 0.6931

 5 3456 Susc 70 2.0000 1.9007 0.4739 0.6668

 6 1621 Tole 70 2.0000 1.9935 0.4984 0.6915

 7 1723 Tole 70 2.0000 1.9935 0.4984 0.6915

 8 4189 Susc 70 2.0000 1.9007 0.4739 0.6668

 **Mean 70 2.0000 1.9614 0.4899 0.6830**

 **St. Dev 0.0000 0.0427 0.0112 0.0113**

============================================================

Ne- Effective number of alleles, H- Nei’s gene diversity, I- Shannon’s Information index, (progeny 120, susceptible), (progeny 2211, susceptible), (progeny 3023, susceptible), (progeny 2478, susceptible), (progeny 3456, susceptible), (progeny 1621, tolerant), (progeny 1723, tolerant), (progeny 4189, susceptible)

**Table 6: Genetic differentiation in oil palm progenies using ISSR markers**

============================================================

 **S/NO Name Sample Size Ht Hs Gst Nm**

============================================================

 1 120 Susc 70 0.4898 0.2939 0.4000 0.7500

 2 2211 Susc 70 0.4853 0.3755 0.2262 1.7100

 3 3023 Susc 70 0.5000 0.4163 0.1673 2.4878

 4 2478 Susc 70 0.5000 0.3347 0.3306 1.0123

 5 3456 Susc 70 0.4739 0.3755 0.2076 1.9087

 6 1621 Tole 70 0.4984 0.3837 0.2301 1.6726

 7 1723 Tole 70 0.4984 0.3755 0.2465 1.5282

 8 4189 Susc 70 0.4739 0.2612 0.4488 0.6142

 **Mean 70 0.4899 0.3520 0.2815 1.2764**

 **St. Dev 0.0001 0.0027**

============================================================

Hs= gene diversity within population, Ht= total gene diversity, GST= coefficient of gene differentiation, and Nm= estimate of gene flow. (Progeny 120, susceptible), (progeny 2211, susceptible), (progeny 3023, susceptible), (progeny 2478, susceptible), (progeny 3456, susceptible), (progeny 1621, tolerant), (progeny 1723, tolerant), (progeny 4189, susceptible)

**Table 7: Coordinate positions of tolerant and susceptible alleles based on PCA on oil palm progenies**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Progenies** | **Axis 1** | **Axis 2** | **Axis 3** | **Axis 4** | **Axis 5** |
|  | Coordinates | Cos² | Coordinates | Cos² | Coordinates | Cos² | Coordinates | Cos² | Coordinates | Cos² |
| 1 | 0.8598 | 1000 | 0.0033 | 0 | -0.0048 | 0 | 0.0019 | 0 | 0.0030 | 0 |
| 2 | -0.1096 | 162 | 0.0395 | 21 | -0.2067 | 576 | 0.0049 | 0 | 0.0583 | 46 |
| 3 | -0.1179 | 234 | 0.0718 | 87 | -0.0200 | 7 | 0.0676 | 77 | -0.1129 | 215 |
| 4 | -0.1265 | 354 | 0.1077 | 256 | -0.0475 | 50 | 0.0634 | 89 | 0.0528 | 62 |
| 5 | -0.0973 | 101 | 0.2384 | 609 | 0.0328 | 12 | -0.1175 | 148 | -0.0576 | 36 |
| 6 | -0.0979 | 106 | -0.0119 | 2 | 0.2041 | 459 | 0.1821 | 365 | 0.0491 | 27 |
| 7 | -0.1157 | 214 | -0.1225 | 240 | -0.0623 | 62 | -0.0594 | 56 | 0.1385 | 307 |
| 8 | -0.1002 | 117 | -0.0941 | 103 | 0.1881 | 413 | -0.1604 | 300 | 0.0068 | 1 |