**Supplementary tables**

Table S1. Origin of 173 *Lagenaria siceraria* accessions used for genetic diversity analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Accession Codes | Zones | Villages | Accession Codes | Zones | Villages |
| Ls1 | SE | Danguira 2 | Ls52 | NE | Tagadi |
| Ls2 | SE | Danguira 2 | Ls53 | NE | Kamala |
| Ls4 | SE | Danguira 2 | Ls54 | NE | Kamala |
| Ls6 | SE | Danguira 2 | Ls55 | NE | Kamala |
| Ls7 | SE | Danguira 1 | Ls56 | NE | Kamala |
| Ls8 | SE | Danguira 1 | Ls57 | NE | Kamala |
| Ls10 | SE | Danguira 1 | Ls58 | NE | Kamala |
| Ls12 | SE | Danguira 1 | Ls59 | NE | Kamala |
| Ls13 | SE | Danguira 2 | Ls60 | NE | Kamala |
| Ls14 | SE | Grand Alépé | Ls61 | NE | Kamala |
| Ls16 | SE | Grand Alépé | Ls62 | NE | Kamala |
| Ls17 | SE | Grand Alépé | Ls63 | NE | Marawi |
| Ls20 | East | Assalekro | Ls64 | NE | Marawi |
| Ls21 | East | Assalekro | Ls65 | NE | Marawi |
| Ls22 | East | Assalekro | Ls66 | NE | Marawi |
| Ls23 | East | Assalekro | Ls67 | NE | Marawi |
| Ls24 | East | Assalekro | Ls69 | NE | Flakièdougou |
| Ls26 | East | Ahounan | Ls70 | NE | Flakièdougou |
| Ls27 | East | Ahounan | Ls71 | NE | Flakièdougou |
| Ls28 | East | Ahounan | Ls72 | NE | Flakièdougou |
| Ls29 | East | Ahounan | Ls73 | NE | Flakièdougou |
| Ls30 | East | Ahounan | Ls74 | NE | Flakièdougou |
| Ls31 | East | Ahounan | Ls79 | NE | Tefrôh |
| Ls32 | East | Ahounan | Ls81 | NE | Tefrôh |
| Ls33 | East | Ahounan | Ls82 | NE | Tefrôh |
| Ls34 | East | Ahounan | Ls84 | NE | Tefrôh |
| Ls35 | East | Ahounan | Ls85 | NE | Tefrôh |
| Ls36 | East | Ahounan | Ls86 | NE | Tefrôh |
| Ls37 | East | Ahounan | Ls87 | NE | Laoudi-ba |
| Ls38 | East | Ahounan | Ls89 | NE | Laoudi-ba |
| Ls39 | East | Ahounan | Ls90 | NE | Laoudi-ba |
| Ls40 | East | Ahounan | Ls91 | NE | Laoudi-ba |
| Ls41 | East | Assiè Koumassi | Ls92 | NE | Laoudi-ba |
| Ls42 | East | Assiè Koumassi | Ls93 | NE | Laoudi-ba |
| Ls43 | East | Assiè Koumassi | Ls94 | NE | Laoudi-ba |
| Ls44 | East | Assiè Koumassi | Ls95 | NE | Kouassi N'dawa |
| Ls45 | East | Assiè Koumassi | Ls96 | NE | Kouassi N'dawa |
| Ls47 | NE | Tagadi | Ls97 | NE | Kouassi N'dawa |
| Ls48 | NE | Tagadi | Ls98 | NE | Laoudiba |
| Ls49 | NE | Tagadi | Ls99 | NE | Laoudiba |
| Ls50 | NE | Tagadi | Ls100 | NE | Laoudiba |
| Ls51 | NE | Tagadi | Ls101 | NE | Laoudiba |
| SE: South-East; NE: North-East | | | | | |
| Table S1. Continued | | | | | |
| Ls102 | NE | Sianoudi | Ls155 | North | Kaprémé |
| Ls103 | NE | Sianoudi | Ls156 | North | Dikodougou |
| Ls104 | NE | Sianoudi | Ls157 | North | Kaprémé |
| Ls105 | NE | Sianoudi | Ls158 | North | Ploro |
| Ls106 | NE | Sianoudi | Ls159 | North | Karapko |
| Ls107 | NE | Sianoudi | Ls160 | North | Karapko |
| Ls108 | NE | Sianoudi | Ls161 | North | Kaprémé |
| Ls109 | NE | Sianoudi | Ls162 | North | Diégon |
| Ls110 | NE | Sianoudi | Ls163 | North | Dikodougou |
| Ls111 | NE | Nafambeni | Ls164 | North | Korhogo |
| Ls112 | NE | Nafambeni | Ls165 | North | Nerkéné |
| Ls113 | NE | Nafambeni | Ls166 | North | Kpon |
| Ls114 | NE | Nafambeni | Ls167 | North | Korhogo |
| Ls115 | NE | Gouméré | Ls168 | North | Korhogo |
| Ls116 | NE | Gouméré | Ls169 | North | Nogota |
| Ls117 | NE | Gouméré | Ls170 | North | Ploro |
| Ls119 | NE | Gouméré | Ls171 | North | Dikodougou |
| Ls120 | NE | Gouméré | Ls172 | North | Ploro |
| Ls121 | NE | Gouméré | Ls173 | North | Nerkéné |
| Ls122 | NE | Gouméré | Ls174 | North | Ploro |
| Ls124 | NE | Sépidouo | Ls175 | North | Ploro |
| Ls125 | NE | Sépidouo | Ls176 | North | Korhogo |
| Ls126 | NE | Sépidouo | Ls177 | North | Ploro |
| Ls127 | NE | Sépidouo | Ls178 | North | Nogota |
| Ls128 | NE | Sépidouo | Ls180 | North | Nerkéné |
| Ls129 | NE | Sépidouo | Ls181 | North | Ploro |
| Ls131 | NE | Assoum1 | Ls182 | North | Kaprémé |
| Ls132 | NE | Assoum1 | Ls183 | North | Korhogo |
| Ls133 | NE | Assoum1 | Ls185 | North | Papé |
| Ls134 | NE | Assoum1 | Ls186 | North | Ploro |
| Ls135 | NE | Assoum1 | Ls187 | North | Dikodougou |
| Ls136 | NE | Assoum1 | Ls190 | North | Korhogo |
| Ls137 | NE | Assoum2 | Ls191 | North | Karapko |
| Ls138 | NE | Assoum3 | Ls192 | North | Dikodougou |
| Ls139 | NE | Assoum4 | Ls195 | North | Ploro |
| Ls141 | NE | Assoum6 | Ls196 | North | Kaprémé |
| Ls142 | NE | Djémitédouo | Ls197 | North | Dikodougou |
| Ls144 | NE | Djémitédouo | Ls198 | North | Dikodougou |
| Ls145 | NE | Djémitédouo | Ls199 | North | Kaprémé |
| Ls146 | NE | Ondéfidouo | Ls200 | North | Kaprémé |
| Ls148 | NE | Ondéfidouo | Ls201 | North | Kaprémé |
| Ls149 | NE | Ondéfidouo | Ls202 | North | Ploro |
| Ls151 | NE | Ondéfidouo | Ls205 | Centre | Laviara |
| Ls153 | North | Dikodougou | Ls208 | Centre | Laviara |
| Ls154 | North | Tapré |  |  |  |
|  | | | | | |

SE: South-East; NE: North-East

Table S2. Discriminative data for measured 9 agromorphological traits for 173 accessions of Lagenaria siceraria

| Traits | Minimum | Maximum | Average  ± standard deviation | *F* | *p* |
| --- | --- | --- | --- | --- | --- |
| BN | 3,50 | 28,60 | 11,12 ± 4,29 | 3,197 | < 0,001 |
| PL | 2,07 | 10,60 | 5,53 ± 1,63 | 4,077 | < 0,001 |
| FWE | 0,34 | 9,27 | 0,93 ± 0,71 | 1,108 | 0,190 |
| FL | 12,24 | 28,94 | 19,61 ± 2,69 | 2,765 | < 0,001 |
| FW | 8,44 | 16,40 | 11,47 ± 1,34 | 3,576 | < 0,001 |
| SCD | 6,30 | 14,20 | 9,08 ± 1,26 | 4,232 | < 0,001 |
| 100-SWE | 8,74 | 20,32 | 14,37 ± 2,34 | 2,949 | < 0,001 |
| SN | 22,00 | 256,20 | 126,93 ± 43,68 | 2,173 | < 0,001 |
| SWE | 3,29 | 52,06 | 18,55 ± 7,80 | 1,945 | < 0,001 |

BN number of branches ; PL: plant length; FWE: fruit weight; FL: fruit length; FW: fruit width; SCD: seed cavity diameter; 100-seeds weight: 100-SWE; SN number of seeds per fruit; SWE: seeds weight.

Table S3. Classification matrix based on the groups obtained by agromorphological characters

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Classification (%) | G I | G II | G III | G IV | Total |
| G I | 100.00 | 66 | 0 | 0 | 0 | 66 |
| G II | 97.98 | 2 | 81 | 0 | 0 | 83 |
| G III | 100.00 | 0 | 0 | 7 | 0 | 7 |
| G IV | 100.00 | 0 | 0 | 0 | 17 | 17 |
| Total | 98.85 | 68 | 81 | 7 | 17 | 173 |

G I: group I; G II: group II; G III: group III; G IV: group IV

Table S4. Pairwise F*ST* and Nei’s genetic distance between the oleaginous *Lagenaria siceraria* populations

|  |  |  |  |
| --- | --- | --- | --- |
| Population 1 | Population 2 | *GD* | *FST* |
| Centre | Est | 0,1472 | 0,3403 |
| Centre | Nord | 0,1734 | 0,3819 |
| Centre | Nord-est | 0,1294 | 0,315 |
| Centre | Sud-est | 0,1504 | 0,3395 |
| Est | Nord | 0,1287 | 0,3883 |
| Est | Nord-est | 0,0154 | 0,0721 |
| Est | Sud-est | 0,0131 | 0,0605 |
| Nord | Nord-est | 0,0909 | 0,3144 |
| Nord | Sud-est | 0,136 | 0,3942 |
| Nord-est | Sud-est | 0,0359 | 0,1488 |

*GD*: genetic distance; *FST*: genetic differentiation