**Supplementary Material**

Supplementary Table S1. Mandarin and hybrids from the Genebanks of the Instituto Agronômico de Campinas (IAC) (BAG Citros IAC), IAC Breeding Program and the Estação Experimetal de Citricultura de Bebedouro (EECB).

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| **ID** | **commom Name** | **mandarin group** |
| BAG CITROS 0994 | 16MPF21 | clementine |
| BAG CITROS 1262 | 2KR Monreal | clementine |
| BAG CITROS 1269 | de Nules VCR | clementine |
| BAG CITROS 1436 | IAC 1436 | clementine |
| BAG CITROS 1447 | Marisol  | clementine |
| BAG CITROS 1434 | Marisol I | clementine |
| BAG CITROS 1441 | Nules IAC 1742 | clementine |
| BAG CITROS 1283 | Tomatera | clementine |
| BAG CITROS 0898 | clemenina x Honey | clementine |
| BAG CITROS 1055 | clementina x Mexerica | clementine |
| BAG CITROS 1271 | Bruno SRA 531 | clementine |
| BAG CITROS 1527 | IAC 1527 | clementine |
| BAG CITROS 1433 | Clemenules | clementine |
| BAG CITROS 1427 | IAC 1427 | clementine |
| BAG CITROS 1429 | Oronules  | clementine |
| BAG CITROS 1428 | Oroval | clementine |
| BAG CITROS 1533 | Late IAC 585 | willow leaf  |
| BAG CITROS 0877 | Avana Apireno IAC 1739 | willow leaf  |
| BAG CITROS 0838 | Avana IAC 594 | willow leaf  |
| BAG CITROS 0840 | Córsega IAC 586 | willow leaf  |
| BAG CITROS 0845 | Imperial IAC 1331 | willow leaf  |
| BAG CITROS 0846 | Ipanema IAC 208 | willow leaf  |
| BAG CITROS 0847 | irradiação IAC 1631 | willow leaf  |
| BAG CITROS 0848 | Israel IAC 599 | willow leaf  |
| BAG CITROS 0859 | mexerica x clementina IAC 1545 | willow leaf  |
| BAG CITROS 0849 | Mildura IAC 1312 | willow leaf  |
| BAG CITROS 0850 | Mogi das Cruzes IAC 606 | willow leaf  |
| BAG CITROS 1380 | Montenegrina  | willow leaf  |
| BAG CITROS 0851 | Nobilis IAC 199 | willow leaf  |
| BAG CITROS 0842 | Paiva IAC 588 | willow leaf  |
| BAG CITROS 1424 | Pará IAC 193 | willow leaf  |
| BAG CITROS 0852 | Paulista IAC 567 | willow leaf  |
| BAG CITROS 1426 | Pernambucana IAC 578 | willow leaf  |
| BAG CITROS 0853 | Victória IAC 580 | willow leaf  |
| BAG CITROS 1778 | Rainha  | willow leaf  |
| BAG CITROS 1702 | Rio IAC 194 | willow leaf  |
| BAG CITROS 0234 | Rio IAC 584 | willow leaf  |
| BAG CITROS 0854 | Siracusa IAC 590 | willow leaf  |
| BAG CITROS 1555 | Tardia da Sicília IAC 589 | willow leaf  |
| BAG CITROS 0233 | Tardia IAC 582 | willow leaf  |
| BAG CITROS 0857 | Tardia IAC 591 | willow leaf  |
| BAG CITROS 0858 | Tardia IAC 592 | willow leaf  |
| BAG CITROS 1578 | Willow IAC 196 | willow leaf  |
| BAG CITROS 1430 | Hashimoto IAC 1430 | satsuma |
| BAG CITROS 1252 | Satsuma Miyagawa SRA 444 | satsuma |
| BAG CITROS 1437 | Ovari | satsuma |
| BAG CITROS 0986 | Wase IAC 213 | satsuma |
| BAG CITROS 1052 | Clemenville Alcazar IAC 931 | tangelo |
| BAG CITROS 1722 | Dekopon IAC 2009 | tangelo |
| BAG CITROS 1729 | Dweet IAC 1721 | tangelo |
| EECB 345 | Ellendale CCC-411 | tangelo |
| BAG CITROS 1432 | Nova SPA 03 | tangelo |
| BAG CITROS 0209 | Lee IAC 441 | tangelo |
| BAG CITROS 1440 | Nova IAC 1853 | tangelo |
| BAG CITROS 0959 | Osceola IAC 443 | tangelo |
| BAG CITROS 0868 | Page IAC 1525 | tangelo |
| BAG CITROS 0210 | Robinson IAC 442 | tangelo |
| BAG CITROS 0893 | Caçula 3 IAC 1330 | common |
| BAG CITROS 0894 | Caçula 4 IAC 1318 | common |
| BAG CITROS 0880 | Fortune  | common |
| EECB 43 | 1/28 FCAV [LCD]  | common |
| EECB 30 | 1/43 [LCD]  | common |
| EECB 232 | À Peau Lisse SRA 267  | common |
| BAG CITROS 0875 | África do Sul IAC 557 | common |
| BAG CITROS 0878 | Batangas IAC 504 | common |
| BAG CITROS 0879 | Batangas IAC 505 | common |
| EECB 230 | Beauty of Glen Retreat | common |
| BAG CITROS 1327 | Burgess  | common |
| BAG CITROS 0884 | Cape Nartjee IAC 523 | common |
| BAG CITROS 0883 | Cape Nartjee IAC 522 | common |
| BAG CITROS 0885 | Carvalhais IAC 546 | common |
| BAG CITROS 1312 | Carvalhais de Vidigueira  | common |
| BAG CITROS 0049 | Cravo IAC 182 | common |
| BAG CITROS 1692 | De Wildt IAC 545 | common |
| BAG CITROS 0919 | Imperatriz IAC 565 | common |
| BAG CITROS 1293 | Encore EECB 212 | common |
| BAG CITROS 0922 | Fallglo IAC 1427 | common |
| BAG CITROS 1236 | Fewtrll EECB 229 | common |
| BAG CITROS 1755 | Fremont IAC 543 | common |
| IAC Breeding Program | Fremont 5-1 | common |
| IAC Breeding Program | Fremont 5-2 | common |
| IAC Breeding Program | Fremont 5-3 | common |
| IAC Breeding Program | Fremont 9-1 | common |
| IAC Breeding Program | Fremont 9-2 | common |
|  IAC Breeding Program | Fremont 9-3 | common |
| BAG CITROS 0832 | IAC 1717 | common |
| BAG CITROS 0937 | Junqueira IAC 721 | common |
| BAG CITROS 0941 | King x Dancy IAC 1378 | common |
| BAG CITROS 1586 | Kinnow IAC 176 | common |
| BAG CITROS 0944 | Ladu IAC 539 | common |
| BAG CITROS 1632 | Ladu x Szinkon IAC 552 | common |
| BAG CITROS 1257 | Lebom  | common |
| BAG CITROS 1658 | Loose Jacket IAC 515 | common |
| BAG CITROS 0206 | Montevideo IAC 438 | common |
| BAG CITROS 1038 | Muscia IAC 607 | common |
| BAG CITROS 0047 | Oneco IAC 173 | common |
| BAG CITROS 0970 | Ponkan casca verde IAC 1722 | common |
| BAG CITROS 0974 | Ponkan casca verde IAC 722 | common |
| BAG CITROS 0257 | Ponkan Chiaradia IAC 1484 | common |
| BAG CITROS 1639 | Ponkan IAC 172 | common |
| BAG CITROS 0968 | Ponkan IAC 222 | common |
| BAG CITROS 0966 | Ponkan IAC 224 | common |
| BAG CITROS 0969 | Ponkan IAC 225 | common |
| BAG CITROS 0967 | Ponkan IAC 226 | common |
| BAG CITROS 1602 | Ponkan IAC 445 | common |
| BAG CITROS 1381 | Ponkan Nanine  | common |
| BAG CITROS 0044 | Tuxpan IAC 170 | common |
| EECB 227 | Yoshida  | common |
| BAG CITROS 1356 | Red Skin  | common |
| EECB 221 | Rodeking SRA 431  | common |
| BAG CITROS 0979 | Rosehaugh Nartjee IAC 555 | common |
| BAG CITROS 1423 | Span IAC 1423 | common |
| BAG CITROS 0993 | Span IAC 595 | common |
| BAG CITROS 0856 | Sunwikon IAC 576 | common |
| BAG CITROS 1000 | Sunwuikon IAC 562 | common |
| BAG CITROS 0045 | Swatow IAC 171 | common |
| BAG CITROS 1002 | Sylhat IAC 512 | common |
| BAG CITROS 1007 | Szinkon x Ladu IAC 548 | common |
| BAG CITROS 1009 | Szuwinkon IAC 571 | common |
| BAG CITROS 1010 | Szwinkon x Szinkon Tizon IAC 560 | common |
| BAG CITROS 1044 | Tankan IAC 502 | common |
| EECB 223 | Wallent SRA 438  | common |
| BAG CITROS 1018 | Warnuco IAC 547 | common |
| BAG CITROS 1661 | Wilking IAC 177 | common |
| EECB 220 | Zanzibar SRA 442  | common |
| IAC Breeding Program | TC x LP 24 | tangor |
| IAC Breeding Program | TC x LP 48 | tangor |
| IAC Breeding Program | TM x LP 175 | tangor |
| IAC Breeding Program | TM x LP 203i | tangor |
| IAC Breeding Program | TM x LP 217 | tangor |
| IAC Breeding Program | TM x LP 222 | tangor |
| IAC Breeding Program | TM x LP 358 | tangor |
| IAC Breeding Program | TM x LP 87 | tangor |
| IAC Breeding Program | TM x LV 15 | tangor |
| IAC Breeding Program | TM x TP 02 | tangor |
| IAC Breeding Program | TM x TP 03 | tangor |
| IAC Breeding Program | TM x TP 04 | tangor |
| IAC Breeding Program | TM x TP 05 | tangor |
| IAC Breeding Program | TM x TP 07 | tangor |
| IAC Breeding Program | TM x TP 08 | tangor |
| IAC Breeding Program | TM x TP 09 | tangor |
| IAC Breeding Program | TM x TP 11 | tangor |
| IAC Breeding Program | TM x TP 12 | tangor |
| IAC Breeding Program | TM x TP 13 | tangor |
| IAC Breeding Program | MC x LP 140 | tangor |
| IAC Breeding Program | MC x LP 319 | tangor |
| IAC Breeding Program | MC x LP 355 | tangor |
| IAC Breeding Program | MC x LP 367 | tangor |
| IAC Breeding Program | MC x LP 38 | tangor |
| IAC Breeding Program | MC x LP 386 | tangor |
| IAC Breeding Program | MC x LP 7 | tangor |
| IAC Breeding Program | MC x LP 707 | tangor |
| BAG CITROS 1435 | Ortanique Hybrid | tangor |
| BAG CITROS 1769 | Murcott IAC 221 | tangor |
| BAG CITROS 1034 | Murcott J IAC 1502 | tangor |
| BAG CITROS 0954 | Murcott Precoce IAC 1578 | tangor |
| BAG CITROS 1739 | Olé | tangor |
| BAG CITROS 1523 | Ortanique IAC 554 | tangor |
| BAG CITROS 1243 | OTA 14  | tangor |
| EECB 12 | Satsuma x Natal 3 | tangor |
| BAG CITROS 1683 | Thomas IAC 519 | tangor |
| IAC Breeding Program | TM x LP 157 | tangor |
| IAC Breeding Program | TM x LP 246 | tangor |
| IAC Breeding Program | TM x LP 253 | tangor |
| IAC Breeding Program | TM x LP 258 | tangor |
| IAC Breeding Program | IAC 2019Maria | tangor |
| IAC Breeding Program | TM x LP 321 | tangor |
| IAC Breeding Program | TM x LP 33 | tangor |
| IAC Breeding Program | TM x LP 353 | tangor |
| IAC Breeding Program | TM x LP 370 | tangor |
| IAC Breeding Program | TM x LP 61 | tangor |
| IAC Breeding Program | TM x LP 124 | tangor |
| BAG CITROS 1449 | W Murcott IAC 2013 | tangor |