**Table S1.** Accessions identified with 14 desirable seed physical and hydration traits in the chickpea mini core collection

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ICC # | SWT\* | ICC # | SCC | ICC # | SV | ICC # | GMD | ICC # | SA | ICC # | SSp | ICC # | SSA |
| 15518 | 36.6 | 7272 | 4.12 | 9137 | 548 | 9137 | 8.19 | 9137 | 211 | 7323 | 90.35 | 7323 | 84.23 |
| 9137 | 35.5 | 14199 | 4.21 | 15697 | 540 | 15697 | 8.14 | 15697 | 208 | 9137 | 89.71 | 13187 | 83.36 |
| 16796 | 34.9 | 4841 | 4.26 | 16796 | 539 | 16796 | 8.13 | 16796 | 208 | 13187 | 89.60 | 9137 | 82.97 |
| 8151 | 34.2 | 11764 | 4.29 | 15518 | 530 | 15518 | 8.09 | 15518 | 206 | 15518 | 89.50 | 15518 | 82.51 |
| 14199 | 33.4 | 8261 | 4.32 | 12328 | 527 | 12328 | 8.08 | 12328 | 205 | 7308 | 89.09 | 8261 | 82.49 |
| 12328 | 33.0 | 10755 | 4.36 | 15333 | 517 | 15333 | 8.03 | 15333 | 202 | 6263 | 88.95 | 7308 | 82.31 |
| 15697 | 32.1 | 12328 | 4.38 | 8151 | 509 | 8261 | 7.98 | 8151 | 200 | 8261 | 88.51 | 15435 | 82.11 |
| 15333 | 32.1 | 10885 | 4.47 | 8261 | 509 | 8151 | 7.98 | 8261 | 200 | 13283 | 87.84 | 6263 | 82.05 |
| 8261 | 31.0 | 7308 | 4.52 | 14199 | 507 | 14199 | 7.97 | 14199 | 200 | 8151 | 87.75 | 11764 | 81.78 |
| 12866 | 29.7 | 7255 | 4.54 | 10885 | 484 | 10885 | 7.85 | 10885 | 194 | 11764 | 87.70 | 13283 | 81.71 |
| *Control cvs.* | |  |  |  |  |  |  |  |  |  |  |  |  |
| G 130 | 10.0 |  | 15.78 |  | 172 |  | 5.57 |  | 97 |  | 76.87 |  | 68.51 |
| L 550 | 19.3 |  | 4.93 |  | 328 |  | 6.90 |  | 150 |  | 86.10 |  | 79.40 |
| ICCV 2 | 22.6 |  | 7.16 |  | 390 |  | 7.31 |  | 168 |  | 87.80 |  | 82.09 |
| ICCV 10 | 17.1 |  | 12.23 |  | 255 |  | 6.34 |  | 126 |  | 85.31 |  | 77.66 |
| *Mean* | *15.6* |  | *13.10* |  | *256* |  | *6.26* |  | *125* |  | *80.95* |  | *72.83* |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ICC # | SBD | ICC # | | | STD | | ICC # | | SP | | ICC # | | SHyC | | ICC # | | SHyI | | ICC # | | SwC | | ICC # | | SwI | |
|  |  |  | | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 10341 | 0.791 | 637 | | | 1.372 | | 10341 | | 64.0 | | 9137 | | 0.485 | | 13077 | | 1.309 | | 9137 | | 0.463 | | 6537 | | 1.577 | |
| 3761 | 0.757 | 1915 | | | 1.355 | | 9137 | | 61.0 | | 8151 | | 0.416 | | 12726 | | 1.306 | | 16796 | | 0.370 | | 10341 | | 1.226 | |
| 95 | 0.755 | 15606 | | | 1.352 | | 8261 | | 60.8 | | 16796 | | 0.413 | | 14077 | | 1.301 | | 8261 | | 0.362 | | 9137 | | 1.225 | |
| 12492 | 0.753 | 1052 | | | 1.343 | | 12328 | | 60.0 | | 15518 | | 0.405 | | 14051 | | 1.281 | | 15518 | | 0.361 | | 13764 | | 1.207 | |
| 1923 | 0.745 | 8350 | | | 1.342 | | 11879 | | 58.9 | | 12328 | | 0.392 | | 9137 | | 1.281 | | 12328 | | 0.360 | | 8261 | | 1.167 | |
| 708 | 0.741 | 708 | | | 1.333 | | 9895 | | 58.7 | | 15333 | | 0.386 | | 12654 | | 1.281 | | 13283 | | 0.336 | | 13524 | | 1.165 | |
| 11879 | 0.739 | 791 | | | 1.333 | | 8195 | | 58.2 | | 14199 | | 0.379 | | 15802 | | 1.266 | | 15406 | | 0.321 | | 13077 | | 1.159 | |
| 67 | 0.739 | 12928 | | | 1.333 | | 3761 | | 58.1 | | 15697 | | 0.368 | | 13461 | | 1.258 | | 8151 | | 0.319 | | 8195 | | 1.152 | |
| 4463 | 0.736 | 3218 | | | 1.332 | | 11944 | | 58.1 | | 13283 | | 0.364 | | 13816 | | 1.251 | | 14199 | | 0.312 | | 3761 | | 1.152 | |
| 2629 | 0.735 | 12492 | | | 1.331 | | 9402 | | 58.1 | | 15406 | | 0.361 | | 3946 | | 1.249 | | 15697 | | 0.309 | | 11879 | | 1.146 | |
| *Control cvs.* | | |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| G 130 | 0.735 |  | | | 1.269 | |  | | 57.1 | |  | | 0.117 | |  | | 1.174 | |  | | 0.114 | |  | | 1.147 | |
| L 550 | 0.724 |  | | | 1.192 | |  | | 60.7 | |  | | 0.213 | |  | | 1.173 | |  | | 0.213 | |  | | 1.172 | |
| ICCV 2 | 0.714 |  | | | 1.219 | |  | | 55.0 | |  | | 0.179 | |  | | 1.227 | |  | | 0.148 | |  | | 1.087 | |
| ICCV 10 | 0.723 |  | | | 1.329 | |  | | 54.4 | |  | | 0.199 | |  | | 1.340 | |  | | 0.191 | |  | | 1.083 | |
| *Mean* | *0.700* |  | | | *1.286* | |  | | *54.4* | |  | | *0.182* | |  | | *1.161* | |  | | *0.163* | |  | | *1.043* | |
| \*. SWT = 100-seed weight (g); SCC = Seed coat content (%); SV = Seed volume (mm3); GMD = Geographic mean diameter (mm); SA=Seed surface area (mm²); SSp = Seed sphericity (%); SSA = Seed shape aspect (%); SBD = Seed bulk density (g/cc); STD = Seed true density (g/cc); SP = Seed porosity (%); SHyC =Seed hydration capacity (g/seed); SHyI = Seed hydration index; SwC =Seed swelling capacity (ml/seed); SwI = Seed swelling index. | | | | | | | | | | | | | | | | | | | | | | | | | | |