Supplementary Information

**Construction of a core collection of native Perilla germplasm collected from South Korea based on SSR markers and morphological characteristics**

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**Figure S1.** UPGMA dendrogram of 400 accessions of var. *frutescens* based on the 22 SSR markers. The dash line represents ten major groups. The solid line represents the sub-clusters of Group II. The dash-dot line represents the separation of first sub-cluster of Group II

To confirm the genetic relationships by distance-based analysis among the 400 accessions of cultivated *P*. *frutescens* var. *frutescens*, a dendrogram was constructed using UPGMA. This showed that all *Perilla* accessions were clustered into ten major groups with a genetic similarity of 45.7% (Figure S1). Group IV (182549, foreign), VI (215256, central region), VIII (104486, central region), IX (215257, central region), and X (214479, unknown) each included only one accession. Meanwhile, Group I contained 33 accessions (3 accessions from the central region and 30 accessions from the southern region). Group II consisted of 325 accessions (132 accessions from the central region, 167 accessions from the southern region, and 26 accessions from foreign or unknown). Group V and VII included four accessions (3 accessions from the central region and 1 accession from the southern region) and six accessions (1 accession from the central region, 2 accessions from the southern region, and 3 accessions from foreign or unknown), respectively (Figure S1). In addition, Group II, which contained 81.8% of the 400 accessions, was further subdivided into ten sub-clusters with a genetic similarity of 51.8% (Figure S1). The first sub-cluster contained 261 accessions, which divided again into eight sub-groups with a genetic similarity of 56.9% (95 accessions from the central region, 147 accessions from the southern regions, and 19 accessions from foreign or unknown). The second sub-cluster consisted of 13 accessions (10 accession from the central region and 3 accessions from the southern region). The third sub-cluster (2 central and 3 southern region) and fifth sub-cluster (4 central and 1 southern region) each contained five accessions. The fourth sub-cluster consisted of 12 accessions (7 accessions from the central region, 2 accessions from the southern region, and 3 accessions from foreign or unknown). The sixth sub-cluster contained 16 accessions (9 accessions from the central and 7 accessions from the southern region). The seventh sub-cluster (2 accessions from the southern region) and eighth sub-cluster (2 accessions, one collected from the central and one from the southern region) each consisted of two accessions. The ninth sub-cluster included eight accessions (3 accessions from the central region, 1 accession from the southern region, and 4 accessions from foreign or unknown). Finally, the tenth sub-cluster of Group II contained only one accession, collected from the central region (Figure S1).



**Figure S2**. Collection areas of the 400 accessions of var. *frutescens* in the central and southern regions of South Korea. The central region (Gangwon, Gyeonggi, Chungcheong) is indicated in light gray. The southern region (Gyeongsang, Jeolla, Jeju) is indicated in dark gray.

The central region includes Gangwon-do, Gyeonggi-do, and Chungcheong-do; while the southern region includes Gyeongsang-do, Jeolla-do, and Jeju-do. A total of 359 accessions were collected from the central and southern regions of South Korea, whereas the remaining 41 accessions were either collected from foreign countries (20 accessions) or the collection region is unknown (21 accessions) (Table S1). In the central region, 148 accessions were collected from Gangwon-do (46 accessions), Gyeonggi-do (53 accessions), and Chungcheong-do (49 accessions); while in the southern region, 211 accessions were collected from Gyeongsang-do (125 accessions), Jeolla-do (85 accessions), and Jeju-do (1 accession).

**Table S1**. Morphological variations of collection area of 372 accessions of var. *frutescens* for six qualitative traits.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| MorphologicalCharacter | Central Region (N=138) | Southern Region (N=196) | Foreign region or Unknown (N=38) | Total accessions (N=372) |
| QL1 | 1 (26\*), 3 (73), 5 (39) | 1 (24), 3 (115), 5 (57) | 1 (9), 3 (19), 5 (8), 7 (2) | 1 (59), 3 (207), 5 (104), 7 (2) |
| QL2 | 1 (52), 3 (73), 5 (13) | 1 (80), 3 (109), 5 (7) | 1 (12), 3 (21), 5 (4), 7 (1) | 1 (144), 3 (203), 5 (24), 7 (1) |
| QL3 | 1 (27), 3 (72), 5 (39) | 1 (24), 3 (115), 5 (57) | 1 (7), 3 (20), 5 (9), 7 (2) | 1 (58), 3 (207), 5 (105), 7 (2) |
| QL4 | 1 (45), 3 (64), 5 (29) | 1 (97), 3 (70), 5 (29) | 1 (19), 3 (12), 5 (7) | 1 (161), 3 (146), 5 (65) |
| QL5 | 1 (22), 3 (96), 5 (20) | 1 (62), 3 (105), 5 (29) | 1 (6), 3 (21), 5 (9), 7 (2) | 1 (90), 3 (222), 5 (58), 7 (2) |
| QL6 | 3 (69), 5 (69) | 3 (97), 5 (99) | 3 (13), 5 (25) | 3 (179), 5 (193) |

\* The number of individuals in the 372 accessions of var. *frutescens* for each trait type.

The results of examining six morphological traits of the 372 accessions of cultivated *P*. *frutescens* var. *frutescens* are summarized in Table S1. In the survey of color of leaf surface (QL1), 59 accessions showed light green color, 207 showed green, and 104 showed deep green. The remaining 2 accessions showed light purple color. For color of reverse side leaf (QL2), 144 accessions showed light green color, 203 accessions showed green, and 24 showed deep green. One accession only showed light purple. For stem color (QL3), 58 accessions showed light green, 207 accessions showed green, and 105 accessions showed deep green. Only 2 accessions had light purple. For leaf shape (QL4), 161 accessions showed lanceolate shape, 146 accessions showed heart shape, and 65 accessions showed oblong shape. For degree of pubescence (QL5), 90 accessions showed slightly pubescent, 222 accessions showed normal pubescent, and 58 accessions showed heavily pubescent. The remaining 2 accessions showed more heavily pubescent. In the case of flowering time (QL6), 179 accessions showed intermediate flowering (flowering days from August 15 to September 5) and 193 accessions showed late flowering (flowering days from September 6 after September 25) (Table S1).

**Table S2.** Collection sites of 400 *Perilla* accessions in RDA-genebank of Korea.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IT No. | Village, town or city | Region | IT No. | Village, town or city | Region |
| 110826 | Jecheon-si |  Chungcheongbuk-do | 104486 | Jeongseon-gun | Gangwon-do |
| 113112 | Jincheon-gun |  Chungcheongbuk-do | 104507 | Pyeongchang-gun | Gangwon-do |
| 113136 | Jincheon-gun |  Chungcheongbuk-do | 104516 | Pyeongchang-gun | Gangwon-do |
| 117115 | Daejeon-si |  Chungcheongbuk-do | 104597 | Pyeongchang-gun | Gangwon-do |
| 117116 | Daejeon-si |  Chungcheongbuk-do | 104623 | Hongcheon-gun | Gangwon-do |
| 117118 | Dangjin-si |  Chungcheongbuk-do | 105306 | Chuncheon-si | Gangwon-do |
| 117120 | Dangjin-si |  Chungcheongbuk-do | 105790 | Gangneung-si | Gangwon-do |
| 117121 | Dangjin-si |  Chungcheongbuk-do | 117176 | Chuncheon-si | Gangwon-do |
| 117123 | Cheongju-si |  Chungcheongbuk-do | 117178 | Chuncheon-si | Gangwon-do |
| 117125 | Cheongju-si |  Chungcheongbuk-do | 137611 | Yangyang-gun | Gangwon-do |
| 117127 | Cheongju-si |  Chungcheongbuk-do | 137612 | Yangyang-gun | Gangwon-do |
| 117128 | Cheongju-si |  Chungcheongbuk-do | 137613 | Yangyang-gun | Gangwon-do |
| 117133 | Nonsan-si |  Chungcheongbuk-do | 157402 | Chuncheon-si | Gangwon-do |
| 117134 | Nonsan-si |  Chungcheongbuk-do | 157406 | Hwacheon-gun | Gangwon-do |
| 117136 | Nonsan-si |  Chungcheongbuk-do | 157409 | Chuncheon-si | Gangwon-do |
| 117137 | Nonsan-si |  Chungcheongbuk-do | 157412 | Yeongwol-gun | Gangwon-do |
| 117161 | Chungju-si |  Chungcheongbuk-do | 157413 | Yeongwol-gun | Gangwon-do |
| 117187 | Daejeon-si |  Chungcheongbuk-do | 157419 | Pyeongchang-gun | Gangwon-do |
| 157446 | Danyang-gun |  Chungcheongbuk-do | 157421 | Gangneung-si | Gangwon-do |
| 157512 | Eumseong-gun | Chungcheongbuk-do | 157424 | Jeongseon-gun | Gangwon-do |
| 157515 | Okcheon-gun | Chungcheongbuk-do | 157425 | Goseong-gun | Gangwon-do |
| 157549 | Jincheon-gun | Chungcheongbuk-do | 157427 | Goseong-gun | Gangwon-do |
| 180973 | Yeongdong-gun | Chungcheongbuk-do | 157430 | Yangyang-gun | Gangwon-do |
| 185670 | Okcheon-gun | Chungcheongbuk-do | 157431 | Yangyang-gun | Gangwon-do |
| 208811 | Jincheon-gun | Chungcheongbuk-do | 157435 | Yangyang-gun | Gangwon-do |
| 214473 | Okcheon-gun | Chungcheongbuk-do | 157437 | Yangyang-gun | Gangwon-do |
| 214484 | Jecheon-si | Chungcheongbuk-do | 157441 | Wonju-si | Gangwon-do |
| 185674 | Jecheon-si | Chungcheongbuk-do | 158273 | Yeongwol-gun | Gangwon-do |
| 105964 | Yesan-gun |  Chungcheongnam-do | 158274 | Yeongwol-gun | Gangwon-do |
| 105965 | Yesan-gun |  Chungcheongnam-do | 158275 | Yeongwol-gun | Gangwon-do |
| 157571 | Buyeo-gun | Chungcheongnam-do | 185605 | Yangyang-gun | Gangwon-do |
| 157578 | Asan-si | Chungcheongnam-do | 185608 | Wonju-si | Gangwon-do |
| 157579 | Asan-si | Chungcheongnam-do | 185609 | Wonju-si | Gangwon-do |
| 185664 | Asan-si | Chungcheongnam-do | 189662 | Pyeongchang-gun | Gangwon-do |
| 185665 | Yesan-gun | Chungcheongnam-do | 195051 | Chuncheon-si | Gangwon-do |
| 207961 | Cheongyang-gun | Chungcheongnam-do | 195496 | Yanggu-gun | Gangwon-do |
| 207962 | Hongseong-gun | Chungcheongnam-do | 195498 | Hwacheon-gun | Gangwon-do |
| 207964 | Hongseong-gun | Chungcheongnam-do | 212140 | Yangyang-gun | Gangwon-do |
| 207965 | Boryeong-si | Chungcheongnam-do | 212141 | Goseong-gun | Gangwon-do |
| 207966 | Seocheon-gun | Chungcheongnam-do | 214500 | Yangyang-gun | Gangwon-do |
| 207967 | Seocheon-gun | Chungcheongnam-do | 214501 | Yangyang-gun | Gangwon-do |
| 207968 | Nonsan-si | Chungcheongnam-do | 214502 | Yangyang-gun | Gangwon-do |
| 207969 | Geumsan-gun | Chungcheongnam-do | 214508 | Cheorwon-gun | Gangwon-do |
| 208794 | Asan-si | Chungcheongnam-do | 215256 | Cheorwon-gun | Gangwon-do |
| 214466 | Yeongi-gun | Chungcheongnam-do | 215257 | Cheorwon-gun | Gangwon-do |
| 214467 | Gongju-si | Chungcheongnam-do | 105833 | Hwaseong-si | Gyeonggi-do |
| 214492 | Daejeon-si | Chungcheongnam-do | 112819 | Hwaseong-si | Gyeonggi-do |
| 214493 | Gongju-si | Chungcheongnam-do | 112893 | Paju-si | Gyeonggi-do |
| 157575 | Seocheon-gu | Chungcheongnam-do | 113100 | Suwon-si | Gyeonggi-do |
| 103282 | Samcheok-shi | Gangwon-do | 116994 | Hwaseong-si | Gyeonggi-do |

**Table S2.** Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IT No. | Village, town or city | Region | IT No. | Village, town or city | Region |
| 116995 | Hwaseong-si | Gyeonggi-do | 104761 | Gimcheon-si |  Gyeongsangbuk-do |
| 116996 | Hwaseong-si | Gyeonggi-do | 104785 | Gimcheon-si |  Gyeongsangbuk-do |
| 116998 | Hwaseong-si | Gyeonggi-do | 105557 | Gimcheon-si |  Gyeongsangbuk-do |
| 116999 | Hwaseong-si | Gyeonggi-do | 105801 | Andong-si |  Gyeongsangbuk-do |
| 117000 | Hwaseong-si | Gyeonggi-do | 108680 | Yecheon-gun |  Gyeongsangbuk-do |
| 117004 | Suwon-si | Gyeonggi-do | 108761 | Yecheon-gun |  Gyeongsangbuk-do |
| 117005 | Suwon-si | Gyeonggi-do | 110974 | Uiseong-gun |  Gyeongsangbuk-do |
| 117006 | Suwon-si | Gyeonggi-do | 113199 | Gimcheon-si |  Gyeongsangbuk-do |
| 117008 | Suwon-si | Gyeonggi-do | 113569 | Uiseong-gun |  Gyeongsangbuk-do |
| 117009 | Suwon-si | Gyeonggi-do | 115181 | Seongju-gun |  Gyeongsangbuk-do |
| 117010 | Suwon-si | Gyeonggi-do | 117011 | Daegu-si |  Gyeongsangbuk-do |
| 117096 | Paju-si | Gyeonggi-do | 117013 | Daegu-si |  Gyeongsangbuk-do |
| 117203 | Yongin-si | Gyeonggi-do | 117014 | Daegu-si |  Gyeongsangbuk-do |
| 117207 | Suwon-si | Gyeonggi-do | 117015 | Daegu-si |  Gyeongsangbuk-do |
| 157454 | Hwaseong-si | Gyeonggi-do | 117016 | Daegu-si |  Gyeongsangbuk-do |
| 157458 | Hwaseong-si | Gyeonggi-do | 117017 | Daegu-si |  Gyeongsangbuk-do |
| 157461 | Hwaseong-si | Gyeonggi-do | 117018 | Daegu-si |  Gyeongsangbuk-do |
| 157462 | Hwaseong-si | Gyeonggi-do | 117019 | Daegu-si |  Gyeongsangbuk-do |
| 157463 | Hwaseong-si | Gyeonggi-do | 117023 | Daegu-si |  Gyeongsangbuk-do |
| 157464 | Hwaseong-si | Gyeonggi-do | 117024 | Daegu-si |  Gyeongsangbuk-do |
| 157465 | Hwaseong-si | Gyeonggi-do | 117026 | Daegu-si |  Gyeongsangbuk-do |
| 157466 | Hwaseong-si | Gyeonggi-do | 117027 | Chilgok-gun |  Gyeongsangbuk-do |
| 157467 | Hwaseong-si | Gyeonggi-do | 117031 | Chilgok-gun |  Gyeongsangbuk-do |
| 157468 | Hwaseong-si | Gyeonggi-do | 117032 | Chilgok-gun |  Gyeongsangbuk-do |
| 157469 | Hwaseong-si | Gyeonggi-do | 117033 | Chilgok-gun |  Gyeongsangbuk-do |
| 157474 | Paju-si | Gyeonggi-do | 117035 | Chilgok-gun |  Gyeongsangbuk-do |
| 157480 | Yangpyeong-gun | Gyeonggi-do | 117037 | Chilgok-gun |  Gyeongsangbuk-do |
| 157555 | Suwon-si | Gyeonggi-do | 117038 | Chilgok-gun |  Gyeongsangbuk-do |
| 157557 | Suwon-si | Gyeonggi-do | 117039 | Chilgok-gun |  Gyeongsangbuk-do |
| 157559 | Suwon-si | Gyeonggi-do | 117040 | Chilgok-gun |  Gyeongsangbuk-do |
| 185618 | Yongin-si | Gyeonggi-do | 117041 | Chilgok-gun |  Gyeongsangbuk-do |
| 195351 | Yeoncheon-gun | Gyeonggi-do | 117047 | Pohang-si |  Gyeongsangbuk-do |
| 207975 | Ganghwa-gun | Gyeonggi-do | 117049 | Pohang-si |  Gyeongsangbuk-do |
| 208916 | Ongjin-gun | Gyeonggi-do | 117072 | Andong-si |  Gyeongsangbuk-do |
| 208917 | Ongjin-gun | Gyeonggi-do | 117078 | Chilgok-gun |  Gyeongsangbuk-do |
| 209211 | Ganghwa-gun | Gyeonggi-do | 117079 | Andong-si |  Gyeongsangbuk-do |
| 209212 | Ganghwa-gun | Gyeonggi-do | 117090 | Yeongyang-gun |  Gyeongsangbuk-do |
| 209213 | Ganghwa-gun | Gyeonggi-do | 117091 | Yeongyang-gun |  Gyeongsangbuk-do |
| 209214 | Ganghwa-gun | Gyeonggi-do | 117093 | Yeongyang-gun |  Gyeongsangbuk-do |
| 209215 | Ganghwa-gun | Gyeonggi-do | 117101 | Yecheon-gun |  Gyeongsangbuk-do |
| 209216 | Ganghwa-gun | Gyeonggi-do | 117143 | Daegu-si |  Gyeongsangbuk-do |
| 209219 | Ganghwa-gun | Gyeonggi-do | 117144 | Daegu-si |  Gyeongsangbuk-do |
| 209222 | Ganghwa-gun | Gyeonggi-do | 117152 | Uljin-gun |  Gyeongsangbuk-do |
| 209335 | Ganghwa-gun | Gyeonggi-do | 117153 | Andong-si |  Gyeongsangbuk-do |
| 209336 | Ganghwa-gun | Gyeonggi-do | 117160 | Uiseong-gun |  Gyeongsangbuk-do |
| 213785 | Pyeongtaek-si | Gyeonggi-do | 117195 | Daegu-si |  Gyeongsangbuk-do |
| 214471 | suwon42 | Gyeonggi-do | 117201 | Uljin-gun |  Gyeongsangbuk-do |
| 207974 | Ganghwa-gun | Gyeonggi-do | 117202 | Yeongyang-gun |  Gyeongsangbuk-do |
| 104635 | Seongju-gun |  Gyeongsangbuk-do | 121520 | Sangju-si |  Gyeongsangbuk-do |
| 104669 | Seongju-gun |  Gyeongsangbuk-do | 105807 | Andong-si |  Gyeongsangbuk-do |

**Table S2.** Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IT No. | Village, town or city | Region | IT No. | Village, town or city | Region |
| 113184 | Andong-si |  Gyeongsangbuk-do | 117156 | Changwon-si |  Gyeongsangnam-do |
| 113193 | Gimcheon-si |  Gyeongsangbuk-do | 157516 | Geochang-gun | Gyeongsangnam-do |
| 117147 | Chilgok-gun |  Gyeongsangbuk-do | 157517 | Geochang-gun | Gyeongsangnam-do |
| 157486 | Chilgok-gun |  Gyeongsangbuk-do | 157525 | Yangsan-si | Gyeongsangnam-do |
| 157488 | Gyeongju-si |  Gyeongsangbuk-do | 157528 | Hadong-gun | Gyeongsangnam-do |
| 113074 | Seongju-gun | Gyeongsangbuk-do | 181994 | Geochang-gun | Gyeongsangnam-do |
| 117012 | Daegu-si | Gyeongsangbuk-do | 181996 | Geochang-gun | Gyeongsangnam-do |
| 157489 | Gyeongju-si | Gyeongsangbuk-do | 185619 | Miryang-si | Gyeongsangnam-do |
| 157493 | Gyeongju-si | Gyeongsangbuk-do | 185631 | Hamyang-gun | Gyeongsangnam-do |
| 157495 | Uljin-gun | Gyeongsangbuk-do | 185632 | Hamyang-gun | Gyeongsangnam-do |
| 157498 | Yeongyang-gun | Gyeongsangbuk-do | 196835 | Hadong-gun | Gyeongsangnam-do |
| 175845 | Cheongsong-gun | Gyeongsangbuk-do | 207955 | Naju-si | Gyeongsangnam-do |
| 175849 | Yeongyang-gun | Gyeongsangbuk-do | 207956 | Jinju-si | Gyeongsangnam-do |
| 175906 | Bonghwa-gun | Gyeongsangbuk-do | 209916 | Sacheon-si | Gyeongsangnam-do |
| 175933 | Bonghwa-gun | Gyeongsangbuk-do | 209917 | Sacheon-si | Gyeongsangnam-do |
| 180960 | Sangju-si | Gyeongsangbuk-do | 209918 | Jinju-si | Gyeongsangnam-do |
| 180961 | Sangju-si | Gyeongsangbuk-do | 209920 | Sancheong-gun | Gyeongsangnam-do |
| 180966 | Gimcheon-si | Gyeongsangbuk-do | 212137 | Goseong-gun | Gyeongsangnam-do |
| 180968 | Gimcheon-si | Gyeongsangbuk-do | 213791 | Tongyeong-si | Gyeongsangnam-do |
| 181991 | Gimcheon-si | Gyeongsangbuk-do | 214469 | Gimhae-si | Gyeongsangnam-do |
| 185634 | Mungyeong-si | Gyeongsangbuk-do | 214498 | Goseong-gun | Gyeongsangnam-do |
| 185635 | Mungyeong-si | Gyeongsangbuk-do | 214505 | Milyang10  | Gyeongsangnam-do |
| 185639 | Andong-si | Gyeongsangbuk-do | 210194 | Sacheon-si | Gyeongsangnam-do |
| 185640 | Uljin-gun | Gyeongsangbuk-do | 104232 | Sunchang-gun |  Jeollabuk-do |
| 191152 | Seongju-gun | Gyeongsangbuk-do | 104261 | Namwon-si |  Jeollabuk-do |
| 203728 | Bonghwa-gun | Gyeongsangbuk-do | 104382 | Namwon-si |  Jeollabuk-do |
| 207377 | Gyeongju-si | Gyeongsangbuk-do | 104849 | Gunsa-si |  Jeollabuk-do |
| 207378 | Yeongcheon-si | Gyeongsangbuk-do | 105242 | Imsil-gun |  Jeollabuk-do |
| 207381 | Cheongdo-gun | Gyeongsangbuk-do | 105275 | Imsil-gun |  Jeollabuk-do |
| 207386 | Cheongdo-gun | Gyeongsangbuk-do | 105386 | Namwon-si |  Jeollabuk-do |
| 210092 | Andong-si | Gyeongsangbuk-do | 105700 | Jangsu-gun |  Jeollabuk-do |
| 214483 | Andong-si | Gyeongsangbuk-do | 105843 | Imsil-gun- |  Jeollabuk-do |
| 157502 | Uiseong-gun | Gyeongsangbuk-do | 105873 | Namwon-si |  Jeollabuk-do |
| 180967 | Gimcheon-si | Gyeongsangbuk-do | 109136 | Jinan-gun |  Jeollabuk-do |
| 103164 | Ulsan-si |  Gyeongsangnam-do | 111021 | Gochang-gun |  Jeollabuk-do |
| 104071 | Sacheon-si |  Gyeongsangnam-do | 111050 | Gochang-gun |  Jeollabuk-do |
| 104088 | Gimcheon-si |  Gyeongsangnam-do | 111080 | Gochang-gun |  Jeollabuk-do |
| 104121 | Gimcheon-si |  Gyeongsangnam-do | 113014 | Jeongeup-si |  Jeollabuk-do |
| 104241 | Hadong-gun |  Gyeongsangnam-do | 113384 | Gochang-gun |  Jeollabuk-do |
| 104421 | Hamyang-gun |  Gyeongsangnam-do | 117052 | Gwangju-si |  Jeollabuk-do |
| 104427 | Hadong-gun |  Gyeongsangnam-do | 117053 | Gwangju-si |  Jeollabuk-do |
| 104445 | Hamyang-gun |  Gyeongsangnam-do | 117054 | Gwangju-si |  Jeollabuk-do |
| 104754 | Hadong-gun |  Gyeongsangnam-do | 117055 | Gwangju-si |  Jeollabuk-do |
| 104832 | Hadong-gun |  Gyeongsangnam-do | 117056 | Gwangju-si |  Jeollabuk-do |
| 104886 | Hamyang-gun |  Gyeongsangnam-do | 117059 | Namwon-si |  Jeollabuk-do |
| 104890 | Goseong-gun |  Gyeongsangnam-do | 117061 | Namwon-si |  Jeollabuk-do |
| 105928 | Hadong-gun |  Gyeongsangnam-do | 117062 | Sunchang-gun |  Jeollabuk-do |
| 105936 | Hadong-gun |  Gyeongsangnam-do | 117179 | Gwangju-si |  Jeollabuk-do |
| 105939 | Masan-si |  Gyeongsangnam-do | 117180 | Gwangju-si |  Jeollabuk-do |
| 108995 | Hadong-gun |  Gyeongsangnam-do | 117208 | Jinan-gun |  Jeollabuk-do |

**Table S2.** Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| IT No. | Village, town or city | Region | IT No. | Village, town or city | Region |
| 117209 | Jinan-gun |  Jeollabuk-do | 213089 | Sinan-gun | Jeollanam-do |
| 108937 | Muju-gun |  Jeollabuk-do | 213091 | Wando-gun | Jeollanam-do |
| 105396 | Imsil-gun | Jeollabuk-do | 213792 | Wando-gun | Jeollanam-do |
| 157583 | Namwon-si | Jeollabuk-do | 214465 | Hampyeong-gun | Jeollanam-do |
| 157584 | Namwon-si | Jeollabuk-do | 214490 | Goheung-gun | Jeollanam-do |
| 157585 | Namwon-si | Jeollabuk-do | 214491 | Goheung-gun | Jeollanam-do |
| 157586 | Namwon-si | Jeollabuk-do | 207972 | Boseong-gun | Jeollanam-do |
| 157587 | Gochang-gun | Jeollabuk-do | 214468 | Sinan-gun | Jeollanam-do |
| 157588 | Gochang-gun | Jeollabuk-do | 117188 | Jeju-si | Jeju-do |
| 157589 | Gochang-gun | Jeollabuk-do | 117140 | Japan | Foreign |
| 157593 | Gimje-si | Jeollabuk-do | 117141 | Japan | Foreign |
| 157594 | Gimje-si | Jeollabuk-do | 117142 | Japan | Foreign |
| 157595 | Gimje-si | Jeollabuk-do | 182549 | Bhutan | Foreign |
| 157602 | Gimje-si | Jeollabuk-do | 196391 | China | Foreign |
| 180485 | Gochang-gun | Jeollabuk-do | 200354 | Nepal | Foreign |
| 180605 | Jinan-gun | Jeollabuk-do | 200356 | Nepal | Foreign |
| 180976 | Muju-gun | Jeollabuk-do | 201756 | Japan | Foreign |
| 180978 | Muju-gun | Jeollabuk-do | 201758 | Japan | Foreign |
| 181907 | Gochang-gun | Jeollabuk-do | 201759 | Japan | Foreign |
| 185656 | Namwon-si | Jeollabuk-do | 201760 | Japan | Foreign |
| 185660 | Jeonju-si | Jeollabuk-do | 201761 | Japan | Foreign |
| 185661 | Jeongeup-si | Jeollabuk-do | 201762 | Japan | Foreign |
| 195158 | Namwon-si | Jeollabuk-do | 201765 | Japan | Foreign |
| 195159 | Namwon-si | Jeollabuk-do | 201768 | Japan | Foreign |
| 204150 | Gochang-gun | Jeollabuk-do | 201771 | Japan | Foreign |
| 208939 | Gunsan-si | Jeollabuk-do | 201773 | Japan | Foreign |
| 208940 | Gunsan-si | Jeollabuk-do | 201779 | Japan | Foreign |
| 181911 | Gochang-gun | Jeollabuk-do | 201780 | Japan | Foreign |
| 103368 | Boseong-gun |  Jeollanam-do | 213786 | United States | Foreign |
| 103913 | Namwon-si |  Jeollanam-do | 117194 | unknown | Unknown |
| 105990 | Gokseong-gun |  Jeollanam-do | 117199 | unknown | Unknown |
| 109580 | Boseong-gun |  Jeollanam-do | 117210 | unknown | Unknown |
| 109582 | Boseong-gun |  Jeollanam-do | 177137 | Unknown | Unknown |
| 111132 | Hamyang-gun |  Jeollanam-do | 178625 | Unknown | Unknown |
| 117148 | Namwon-si |  Jeollanam-do | 178649 | Unknown | Unknown |
| 117149 | Namwon-si |  Jeollanam-do | 178770 | Unknown | Unknown |
| 105586 | Boseong-gun |  Jeollanam-do | 210184 | Unknown | Unknown |
| 117057 | Gwangju-si | Jeollanam-do | 210186 | Unknown | Unknown |
| 157529 | Gurye-gun | Jeollanam-do | 210187 | Unknown | Unknown |
| 157541 | Jangseong-gun | Jeollanam-do | 210189 | Unknown | Unknown |
| 157542 | Jangseong-gun | Jeollanam-do | 210190 | Unknown | Unknown |
| 157545 | Damyang-gun | Jeollanam-do | 210191 | Unknown | Unknown |
| 157546 | Damyang-gun | Jeollanam-do | 213778 | Unknown | Unknown |
| 157561 | Hampyeong-gun | Jeollanam-do | 213787 | Unknown | Unknown |
| 160582 | Boseong-gun | Jeollanam-do | 214474 | Unknown | Unknown |
| 185653 | Jangseong-gun | Jeollanam-do | 214478 | Unknown | Unknown |
| 185654 | Gokseong-gun | Jeollanam-do | 214479 | Unknown | Unknown |
| 207970 | Suncheon-si | Jeollanam-do | 214489 | Unknown | Unknown |
| 207971 | Suncheon-si | Jeollanam-do | 214486 | Unknown | Unknown |
| 212135 | Jangseong-gun | Jeollanam-do | 214488 | Unknown | Unknown |

**Table S3**. Characters used in the morphological analysis of the 372 accessions of cultivated var. *frutescens*.

|  |  |
| --- | --- |
| Morphological character | Category |
| QL1 | Color of leaf surface | 1-light green, 3-green, 5-deep green, 7-light purple |
| QL2 | Color of reverse side leaf | 1-light green, 3-green, 5-deep green, 7-light purple |
| QL3 | Stem color | 1-light green, 3-green, 5-deep green, 7-light purple |
| QL4 | Leaf shape | 1-lanceolate, 3-heart shape, 5-oblong |
| QL5 | Degree of pubescence | 1-slightly pubescent, 3-normal pubescent, 5-heavily pubescent, 7-more heavily pubescent |
| QL6 | Flowering time | 1-early, 3-intermediate, 5-late |