

**Supplementary material 1 – List of species and the respective codes for the bioproject available in Genebank.** With the exception of the Solanaceae family, for which the Solanum genus was also found in our samples, all other families (but not their respective genus or species) were also found in our study. Genome sizes seem to be shared by species in the same genus but they can vary inside the same family. Species from the same family are marked with the same color and species from the same genus inside the same family are marked with the family color in a darker tone.

| Family          | Species                           | Genome size (Mb) | Bioproject code: |
|-----------------|-----------------------------------|------------------|------------------|
| Asteraceae      | <i>Conyza canadensis</i>          | 326              | PRJNA248374      |
| Asteraceae      | <i>Lactuca sativa</i>             | 1133             | PRJNA68025       |
| Euphorbiaceae   | <i>Hevea brasiliensis</i>         | 1337             | PRJNA310386      |
| Euphorbiaceae   | <i>Jatropha curcas</i>            | 308              | PRJNA63485       |
| Euphorbiaceae   | <i>Manihot esculenta</i>          | 582              | PRJNA234389      |
| Euphorbiaceae   | <i>Ricinus communis</i>           | 350              | PRJNA16585       |
| Fabaceae        | <i>Arachis duranensis</i>         | 1068             | PRJNA258023      |
| Fabaceae        | <i>Arachis ipaensis</i>           | 1349             | PRJNA258025      |
| Fabaceae        | <i>Cajanus cajan</i>              | 592              | PRJNA72815       |
| Fabaceae        | <i>Cicer arietinum</i>            | 530              | PRJNA175619      |
| Fabaceae        | <i>Eucalyptus camaldulensis</i>   | 478              | PRJDA71141       |
| Fabaceae        | <i>Glycine max</i>                | 953              | PRJNA19861       |
| Fabaceae        | <i>Glycine soja</i>               | 864              | PRJNA223435      |
| Fabaceae        | <i>Lotus japonicus</i>            | 254              | PRJDA28941       |
| Fabaceae        | <i>Lupinus angustifolius</i>      | 523              | PRJNA179231      |
| Fabaceae        | <i>Medicago truncatula</i>        | 412              | PRJNA10791       |
| Fabaceae        | <i>Phaseolus vulgaris</i>         | 521              | PRJNA41439       |
| Fabaceae        | <i>Trifolium pratense</i>         | 345              | PRJEB9186        |
| Fabaceae        | <i>Vigna angularis</i>            | 379              | PRJNA261643      |
| Fabaceae        | <i>Vigna radiata</i>              | 459              | PRJNA243847      |
| Malvaceae       | <i>Gossypium arboreum</i>         | 1694             | PRJNA203683      |
| Malvaceae       | <i>Gossypium raimondii</i>        | 761              | PRJNA171262      |
| Malvaceae       | <i>Theobroma cacao</i>            | 346              | PRJNA51633       |
| Meliaceae       | <i>Azadirachta indica</i>         | 261              | PRJNA176672      |
| Myrtaceae       | <i>Eucalyptus grandis</i>         | 691              | PRJNA49047       |
| Plantaginaceae  | <i>Penstemon centranthifolius</i> | 4471             | PRJNA242923      |
| Plantaginaceae  | <i>Penstemon cyananthus</i>       | 4622             | PRJNA162251      |
| Plantaginaceae  | <i>Penstemon davidsonii</i>       | 2380             | PRJNA162455      |
| Plantaginaceae  | <i>Penstemon dissectus</i>        | 2628             | PRJNA162457      |
| Plantaginaceae  | <i>Penstemon fruticosus</i>       | 2319             | PRJNA163701      |
| Plantaginaceae  | <i>Penstemon grinnellii</i>       | 3663             | PRJNA242923      |
| Primulacea      | <i>Primula veris</i>              | 309              | PRJNA238546      |
| Primulacea      | <i>Primula vulgaris</i>           | 1504             | PRJEB7311        |
| Rosaceae        | <i>Prunus mume</i>                | 234              | PRJNA246160      |
| Rosaceae        | <i>Prunus persica</i>             | 227              | PRJNA241430      |
| Rutaceae        | <i>Citrus clementina</i>          | 301              | PRJNA232045      |
| Rutaceae        | <i>Citrus sinensis</i>            | 323              | PRJNA225998      |
| Salicaceae      | <i>Populus euphratica</i>         | 496              | PRJNA268063      |
| Salicaceae      | <i>Populus trichocarpa</i>        | 417              | PRJNA17973       |
| Selaginellaceae | <i>Selaginella kraussiana</i>     | 114              | PRJNA284650      |
| Selaginellaceae | <i>Selaginella moellendorffii</i> | 212              | PRJNA50439       |
| Solanaceae      | <i>Capsicum annuum</i>            | 2935             | PRJNA319678      |
| Solanaceae      | <i>Nicotiana otophora</i>         | 2689             | PRJNA208212      |
| Solanaceae      | <i>Nicotiana tabacum</i>          | 3732             | PRJNA319578      |
| Solanaceae      | <i>Solanum arcanum</i>            | 665              | PRJEB5226        |
| Solanaceae      | <i>Solanum habrochaites</i>       | 724              | PRJEB5227        |
| Solanaceae      | <i>Solanum lycopersicum</i>       | 823              | PRJNA66163       |
| Solanaceae      | <i>Solanum melongena</i>          | 833              | PRJDB1505        |
| Solanaceae      | <i>Solanum pennellii</i>          | 926              | PRJNA256387      |
| Solanaceae      | <i>Solanum pimpinellifolium</i>   | 688              | PRJNA72351       |
| Solanaceae      | <i>Solanum tuberosum</i>          | 705              | PRJNA225997      |