**APPENDIX S2.** Genomes used to design the GoFlag 451 probe set.

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| **Species** | **Group** | **Assembly** |
| *Physcomitrella patens* | Mosses | *Phypa V3* |
| *Selaginella moellendorffii* | Lycophytes | *v.1.0* |
| *Pinus taeda* | Gymnosperms | *Ptaeda2.0* |
| *Amborella trichopoda* | “Basal” angiosperms | *AMTR1.0* |
| *Elaeis guineensis* | Monocots | *EG5* |
| *Musa acuminata* | Monocots | *ASM31385v2* |
| *Oryza sativa* | Monocots | *ASM130525v1* |
| *Sorghum bicolor* | Monocots | *NCBlv3* |
| *Spirodela polyrhiza* | Monocots | *ASM198140v1* |
| *Aquilegia coerulea* | “Basal” eudicots | *Aquilegia\_coerulea\_v1* |
| *Nelumbo nucifera* | “Basal” eudicots | *Chinese Lotus 1.1* |
| *Beta vulgaris* | Caryophyllales | *RefBeet-1.2.2* |
| *Mimulus guttatus* | Asterids | *Mimgu1\_0* |
| *Solanum lycopersicum* | Asterids | *SL2.50* |
| *Arabidopsis thaliana* | Rosids | *TAIR10* |
| *Carica papaya* | Rosids | *GCA\_001310045.1* |
| *Eucalyptus grandis* | Rosids | *Egrandis1\_0* |
| *Manihot esculenta* | Rosids | *v6* |
| *Phaseolus vulgaris* | Rosids | *PhaVulg1\_0* |
| *Populus trichocarpa* | Rosids | *Pop\_tri2* |
| *Prunus persica* | Rosids | *Prunus\_persica\_NCBlv2* |
| *Theobroma cacao* | Rosids | *Criollo\_cocoa\_genome\_V2* |
| *Vitis vinifera* | Rosids | *12X* |