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*Crop & Pasture Science*

**Supplementary Material**

# Transcriptome analysis showed the metabolic pathway of differentially expressed genes (DEGs) in resistant and susceptible soybean (*Glycine max*) to sclerotinia stem rot (SSR) and candidate gene mining

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**Table S1.** Phenotypic data of soybean resisitance to SSR used for candidate gene based association analysis at two developmental stages.

| No. | Stem rot length at seedling stage (cm) | Stem rot length at podding stage (cm) |
|---|---|---|
| Line01 | 1.53 | 7.70 |
| Line02 | 3.00 | 5.83 |
| Line03 | 5.00 | 3.80 |
| Line04 | 6.03 | 5.03 |
| Line05 | 5.67 | 5.17 |
| Line06 | 1.63 | 5.47 |
| Line07 | 4.73 | 5.37 |
| Line08 | 5.23 | 1.97 |
| Line09 | 5.77 | 6.83 |
| Line10 | 1.50 | 7.53 |
| Line11 | 5.87 | 5.37 |
| Line12 | 2.43 | 5.87 |
| Line13 | 2.70 | 5.53 |
| Line14 | 8.47 | 9.40 |
| Line15 | 4.10 | 7.13 |
| Line16 | 1.23 | 5.73 |
| Line17 | 2.50 | 6.37 |
| Line18 | 6.47 | 5.10 |
| Line19 | 6.50 | 5.20 |
| Line20 | 4.93 | 5.57 |
| Line21 | 6.37 | 6.50 |
| Line22 | 3.20 | 3.03 |
| Line23 | 3.03 | 5.27 |
| Line24 | 1.60 | 5.73 |
| Line25 | 6.13 | 4.57 |
| Line26 | 4.10 | 4.80 |
| Line27 | 6.40 | 5.37 |
| Line28 | 6.13 | 0.00 |
| Line29 | 5.53 | 6.03 |
| Line30 | 3.33 | 4.40 |
| Line31 | 1.90 | 5.10 |
| Line32 | 5.03 | 9.17 |
| Line33 | 2.53 | 7.60 |
| Line34 | 3.50 | 5.90 |
| Line35 | 3.37 | 7.57 |
| Line36 | 2.93 | 3.97 |
| Line37 | 7.00 | 7.17 |
| Line38 | 9.07 | 5.77 |
| Line39 | 4.47 | 5.20 |
| Line40 | 10.10 | 6.60 |

| | | |
|---|---|---|
| Line41 | 6.10 | 6.17 |
| Line42 | 4.07 | 6.97 |
| Line43 | 4.97 | 8.60 |
| Line44 | 4.17 | 4.93 |
| Line45 | 1.70 | 6.50 |
| Line46 | 7.13 | 5.00 |
| Line47 | 1.07 | 6.83 |
| Line48 | 1.30 | 7.40 |
| Line49 | 6.17 | 5.80 |
| Line50 | 6.70 | 5.83 |
| Line51 | 4.40 | 5.37 |
| Line52 | 2.83 | 7.47 |
| Line53 | 5.53 | 2.83 |
| Line54 | 0.63 | 4.03 |
| Line55 | 2.47 | 6.23 |
| Line56 | 5.80 | 4.90 |
| Line57 | 1.43 | 6.77 |
| Line58 | 4.03 | 5.50 |
| Line59 | 3.93 | 4.30 |
| Line60 | 1.27 | 7.67 |
| Line61 | 7.80 | 5.77 |
| Line62 | 3.53 | 0.00 |
| Line63 | 3.27 | 2.60 |
| Line64 | 4.63 | 6.50 |
| Line65 | 6.87 | 8.17 |
| Line66 | 1.33 | 4.60 |
| Line67 | 1.87 | 4.80 |
| Line68 | 1.43 | 4.77 |
| Line69 | 4.17 | 6.80 |
| Line70 | 3.80 | 3.90 |
| Line71 | 7.27 | 5.83 |
| Line72 | 4.30 | 4.03 |
| Line73 | 5.57 | 5.43 |
| Line74 | 7.33 | 6.37 |
| Line75 | 1.63 | 4.43 |
| Line76 | 4.67 | 5.17 |
| Line77 | 7.00 | 3.63 |
| Line78 | 1.17 | 5.03 |
| Line79 | 3.93 | 4.83 |
| Line80 | 3.37 | 6.23 |
| Line81 | 5.70 | 3.10 |
| Line82 | 2.53 | 5.97 |
| Line83 | 1.77 | 5.07 |
| Line84 | 1.10 | 6.67 |

| | | |
|---|---|---|
| Line85 | 1.10 | 2.63 |
| Line86 | 5.00 | 5.53 |
| Line87 | 1.27 | 5.70 |
| Line88 | 6.70 | 7.80 |
| Line89 | 7.43 | 4.07 |
| Line90 | 7.13 | 7.40 |
| Line91 | 5.67 | 4.60 |
| Line92 | 5.03 | 5.97 |
| Line93 | 4.27 | 6.83 |
| Line94 | 4.17 | 7.57 |
| Line95 | 1.97 | 5.23 |
| Line96 | 8.23 | 4.70 |
| Line97 | 6.97 | 5.50 |
| Line98 | 5.17 | 6.13 |
| Line99 | 4.30 | 3.97 |
| Line100 | 7.80 | 4.07 |
| Line101 | 4.03 | 5.10 |
| Line102 | 3.40 | 4.30 |
| Line103 | 1.07 | 3.50 |
| Line104 | 7.63 | 4.73 |
| Line105 | 1.50 | 6.60 |
| Line106 | 6.53 | 3.37 |
| Line107 | 1.67 | 7.67 |
| Line108 | 6.03 | 5.17 |
| Line109 | 3.53 | 5.73 |
| Line110 | 4.00 | 5.40 |
| Line111 | 3.57 | 6.47 |
| Line112 | 5.77 | 4.60 |
| Line113 | 7.57 | 5.87 |
| Line114 | 4.97 | 3.33 |
| Line115 | 3.83 | 5.70 |
| Line116 | 3.63 | 5.03 |
| Line117 | 2.83 | 4.07 |
| Line118 | 2.17 | 5.57 |
| Line119 | 2.50 | 0.00 |
| Line120 | 5.07 | 4.97 |
| Line121 | 2.50 | 2.27 |
| Line122 | 7.07 | 4.27 |
| Line123 | 1.57 | 3.50 |
| Line124 | 3.23 | 3.70 |
| Line125 | 1.90 | 3.97 |
| Line126 | 4.87 | 3.90 |
| Line127 | 5.17 | 3.30 |
| Line128 | 4.33 | 6.60 |

| | | |
|---|---|---|
| Line129 | 5.33 | 4.20 |
| Line130 | 9.67 | 4.23 |
| Line131 | 8.23 | 5.43 |
| Line132 | 4.33 | 4.70 |
| Line133 | 3.17 | 4.70 |
| Line134 | 5.20 | 6.03 |
| Line135 | 2.13 | 3.83 |
| Line136 | 5.73 | 12.10 |
| Line137 | 4.37 | 7.10 |
| Line138 | 3.90 | 9.63 |
| Line139 | 5.87 | 6.07 |
| Line140 | 1.40 | 5.67 |
| Line141 | 6.33 | 5.67 |
| Line142 | 3.53 | 4.23 |
| Line143 | 2.13 | 5.40 |
| Line144 | 9.67 | 4.70 |
| Line145 | 2.63 | 4.63 |
| Line146 | 2.97 | 5.77 |
| Line147 | 4.20 | 5.43 |
| Line148 | 3.60 | 5.13 |
| Line149 | 5.83 | 5.33 |
| Line150 | 4.43 | 5.87 |
| Line151 | 5.00 | 9.83 |
| Line152 | 6.33 | 6.53 |
| Line153 | 4.27 | 3.80 |
| Line154 | 3.20 | 2.40 |
| Line155 | 4.33 | 0.00 |
| Line156 | 6.23 | 4.67 |
| Line157 | 5.27 | 4.63 |
| Line158 | 7.70 | 0.00 |
| Line159 | 2.47 | 5.33 |
| Line160 | 3.87 | 5.03 |
| Line161 | 4.00 | 5.13 |
| Line162 | 6.70 | 9.07 |
| Line163 | 7.43 | 7.77 |
| Line164 | 1.43 | 6.03 |
| Line165 | 4.13 | 5.50 |
| Line166 | 3.30 | 4.50 |
| Line167 | 6.43 | 0.00 |
| Line168 | 8.60 | 6.60 |
| Line169 | 6.00 | 4.23 |
| Line170 | 7.23 | 6.67 |
| Line171 | 8.40 | 5.50 |
| Line172 | 3.70 | 4.50 |

| | | |
|---|---|---|
| Line173 | 1.30 | 4.03 |
| Line174 | 5.10 | 4.37 |
| Line175 | 5.67 | 4.97 |
| Line176 | 6.63 | 5.33 |
| Line177 | 5.80 | 10.93 |
| Line178 | 7.17 | 7.13 |
| Line179 | 5.37 | 4.80 |
| Line180 | 3.20 | 5.87 |
| Line181 | 5.53 | 5.20 |
| Line182 | 3.80 | 5.43 |
| Line183 | 6.40 | 6.40 |
| Line184 | 3.10 | 5.93 |
| Line185 | 3.03 | 4.27 |
| Line186 | 5.37 | 4.27 |
| Line187 | 5.87 | 8.60 |
| Line188 | 3.40 | 4.73 |
| Line189 | 7.00 | 6.27 |
| Line190 | 5.23 | 7.10 |
| Line191 | 1.13 | 4.40 |
| Line192 | 4.30 | 4.10 |
| Line193 | 3.47 | 6.40 |
| Line194 | 1.33 | 4.73 |
| Line195 | 4.53 | 3.77 |
| Line196 | 1.80 | 4.20 |
| Line197 | 2.00 | 4.87 |
| Line198 | 2.63 | 3.80 |
| Line199 | 5.10 | 5.53 |
| Line200 | 6.90 | 0.00 |
| Line201 | 2.13 | 7.00 |
| Line202 | 1.90 | 5.13 |
| Line203 | 5.80 | 6.67 |
| Line204 | 3.40 | 7.60 |
| Line205 | 0.73 | 5.33 |
| Line206 | 2.63 | 4.83 |
| Line207 | 4.73 | 6.80 |
| Line208 | 3.30 | 4.43 |
| Line209 | 8.93 | 4.43 |
| Line210 | 4.10 | 8.60 |
| Line211 | 1.33 | 8.27 |
| Line212 | 1.60 | 4.93 |
| Line213 | 1.37 | 3.67 |
| Line214 | 2.23 | 8.60 |
| Line215 | 1.57 | 3.63 |
| Line216 | 2.97 | 4.90 |

| | | |
|---|---|---|
| Line217 | 1.77 | 5.80 |
| Line218 | 4.30 | 6.47 |
| Line219 | 1.47 | 5.60 |
| Line220 | 2.53 | 3.33 |
| Line221 | 3.63 | 4.60 |
| Line222 | 2.23 | 4.87 |
| Line223 | 1.60 | 6.40 |
| Line224 | 6.67 | 4.50 |
| Line225 | 1.60 | 6.50 |
| Line226 | 1.90 | 4.10 |
| Line227 | 1.37 | 8.03 |
| Line228 | 1.27 | 3.07 |
| Line229 | 6.37 | 6.03 |
| Line230 | 7.47 | 8.83 |
| Line231 | 1.87 | 4.80 |
| Line232 | 5.23 | 4.40 |
| Line233 | 2.80 | 4.90 |
| Line234 | 7.80 | 4.47 |
| Line235 | 6.03 | 5.20 |
| Line236 | 6.00 | 5.13 |
| Line237 | 3.57 | 4.93 |
| Line238 | 4.67 | 5.00 |
| Line239 | 6.30 | 7.40 |
| Line240 | 6.93 | 6.83 |
| Line241 | 4.47 | 7.83 |
| Line242 | 4.80 | 5.63 |
| Line243 | 7.30 | 4.63 |
| Line244 | 7.87 | 5.40 |
| Line245 | 7.53 | 5.13 |
| Line246 | 1.73 | 5.47 |
| Line247 | 2.13 | 7.47 |
| Line248 | 1.23 | 5.87 |
| Line249 | 3.23 | 4.33 |
| Line250 | 1.33 | 5.33 |
| Line251 | 4.97 | 6.07 |
| Line252 | 6.07 | 5.17 |
| Line253 | 5.87 | 5.57 |
| Line254 | 1.30 | 2.87 |
| Line255 | 3.10 | 7.53 |
| Line256 | 5.80 | 5.80 |
| Line257 | 4.37 | 9.67 |
| Line258 | 3.83 | 5.27 |
| Line259 | 6.47 | 5.27 |
| Line260 | 5.60 | 4.93 |

| | | |
|---|---|---|
| Line261 | 3.40 | 4.07 |
| Line262 | 2.30 | 8.77 |
| Line263 | 4.77 | 10.10 |
| Line264 | 8.07 | 6.03 |
| Line265 | 4.43 | 8.23 |
| Line266 | 1.20 | 7.97 |
| Line267 | 3.10 | 3.83 |
| Line268 | 4.33 | 3.87 |
| Line269 | 7.30 | 5.20 |
| Line270 | 6.93 | 3.10 |
| Line271 | 1.13 | 3.63 |
| Line272 | 6.53 | 4.73 |
| Line273 | 6.53 | 6.67 |
| Line274 | 4.47 | 2.77 |
| Line275 | 3.60 | 6.37 |
| Line276 | 7.47 | 3.07 |
| Line277 | 7.10 | 5.43 |
| Line278 | 2.70 | 4.00 |
| Line279 | 1.73 | 6.17 |
| Line280 | 3.90 | 5.43 |
| Line281 | 5.83 | 3.07 |
| Line282 | 9.03 | 5.33 |
| Line283 | 5.00 | 3.07 |
| Line284 | 1.17 | 4.40 |
| Line285 | 6.23 | 8.10 |
| Line286 | 0.93 | 4.90 |
| Line287 | 7.93 | 5.07 |
| Line288 | 6.40 | 4.97 |
| Line289 | 4.83 | 4.80 |
| Line290 | 3.50 | 7.50 |
| Line291 | 6.73 | 3.50 |
| Line292 | 7.07 | 4.53 |
| Line293 | 6.23 | 5.30 |
| Line294 | 4.73 | 5.90 |
| Line295 | 6.30 | 6.60 |
| Line296 | 4.33 | 4.67 |
| Line297 | 2.93 | 6.00 |
| Line298 | 8.73 | 4.47 |
| Line299 | 6.07 | 7.67 |
| Line300 | 6.00 | 5.67 |
| Line301 | 8.20 | 3.87 |
| Line302 | 7.87 | 4.03 |
| Line303 | 4.57 | 4.00 |
| Line304 | 3.73 | 3.30 |

| | | |
|---|---|---|
| Line305 | 4.03 | 4.27 |
| Line306 | 6.63 | 6.03 |
| Line307 | 1.77 | 6.10 |
| Line308 | 8.00 | 4.43 |
| Line309 | 9.60 | 4.80 |
| Line310 | 7.30 | 4.07 |
| Line311 | 4.93 | 3.43 |
| Line312 | 4.73 | 4.87 |
| Line313 | 4.27 | 4.77 |
| Line314 | 4.53 | 6.73 |
| Line315 | 6.03 | 4.27 |
| Line316 | 8.27 | 6.77 |
| Line317 | 8.37 | 5.40 |
| Line318 | 4.87 | 4.60 |
| Line319 | 2.07 | 4.80 |
| Line320 | 3.73 | 7.10 |
| Line321 | 3.40 | 3.33 |
| Line322 | 3.13 | 5.70 |
| Line323 | 4.80 | 4.23 |

**Table S2.** Transcriptome sequencing data and mapping of reference genome of "Maple Arrow " and "Hefeng25".

| Soybean line | Sample | Total Clean Reads | Total Mapping Ratio (%) | Uniquely Mapping Ratio (%) |
|---|---|---|---|---|
| Maple Arrow | 0h-1 | 37122312 | 87.98 | 84.45 |
| | 0h-2 | 37021526 | 86.32 | 82.36 |
| | 0h-3 | 37065269 | 88.69 | 83.12 |
| | 4h-1 | 51844902 | 87.57 | 84.88 |
| | 4h-2 | 51625487 | 87.32 | 83.65 |
| | 4h-3 | 51938745 | 87.97 | 84.96 |
| | 8h-1 | 54964942 | 85.97 | 83.79 |
| | 8h-2 | 54896325 | 86.12 | 82.97 |
| | 8h-3 | 55036295 | 85.59 | 83.2 |
| | 12h-1 | 34646054 | 88.48 | 83.06 |
| | 12h-2 | 34598623 | 88.98 | 82.34 |
| | 12h-3 | 34789523 | 88.76 | 81.98 |
| | 24h-1 | 54477550 | 85.18 | 82.06 |
| | 24h-2 | 54369852 | 85.56 | 81.96 |
| | 24h-3 | 54489612 | 85.29 | 82.77 |
| Hefeng25 | 0h-1 | 39368826 | 89.61 | 85.02 |
| | 0h-2 | 39402698 | 89.46 | 85.02 |
| | 0h-3 | 39268579 | 89.53 | 85.02 |
| | 4h-1 | 43995366 | 88.39 | 84.74 |
| | 4h-2 | 43869527 | 88.98 | 83.96 |
| | 4h-3 | 43985327 | 88.72 | 84.12 |
| | 8h-1 | 43605594 | 88.16 | 80.78 |
| | 8h-2 | 43529836 | 88.96 | 81.28 |
| | 8h-3 | 44076958 | 88.42 | 82.25 |
| | 12h-1 | 46535342 | 87.76 | 81.78 |
| | 12h-2 | 46498265 | 87.32 | 82.08 |
| | 12h-3 | 46503187 | 87.87 | 82.36 |
| | 24h-1 | 44373796 | 82.12 | 80.27 |
| | 24h-2 | 44326958 | 84.03 | 81.02 |
| | 24h-3 | 44298630 | 83.42 | 80.98 |