**Table S5.** Genes associated with disease-related traits when compared the rust control (R) vs no control (C) treatments in the inbred. All the significant correlations ranged between |0.72| and |0.83|. A positive correlation indicates an increase in gene expression as the trait value increases. Stepwise regression data is not shown.

| **Gene annotation (Gene ID (Denoeud et al. 2014))** | **GO description** | **Spearman correlation** | | |
| --- | --- | --- | --- | --- |
| **Trait**[[1]](#footnote-2) | **Spearman ρ** | **Prob>|ρ|** |
| 1-aminocyclopropane-1-carboxylate synthase (Cc02\_g38530) | catalytic activity | RI | 0.75 | 0.0051 |
| phosphate transporter 3;1 (Cc04\_g09390) | membrane | RI | 0.72 | 0.0082 |
| RS | 0.74 | 0.0058 |
| RE | 0.77 | 0.0034 |
| 1-aminocyclopropane-1-carboxylate oxidase 3 (Cc05\_g02900) | oxidoreductase activity | RI | 0.73 | 0.0065 |
| RS | 0.74 | 0.0058 |
| RE | 0.73 | 0.0074 |
| Tyrosine aminotransferase (Cc05\_g07600) | -aminocyclopropane--carboxylate synthase activity | RE | 0.72 | 0.0082 |
| Putative Hyoscyamine 6-dioxygenase (Cc05\_g10390) | oxidoreductase activity | RS | 0.72 | 0.0082 |
| RE | 0.81 | 0.0014 |
| Probable anion transporter 3, chloroplastic (Cc06\_g01670) | transmembrane transport | RI | 0.78 | 0.0026 |
| RS | 0.80 | 0.0016 |
| RE | 0.81 | 0.0014 |
|  |  |  |  |  |
| Supporting information 5 continued… | | | | |
| Putative Stellacyanin (Cc06\_g08240) | copper ion binding | RI | 0.78 | 0.0026 |
| RS | 0.76 | 0.0045 |
| RE | 0.77 | 0.0034 |
| Putative Acidic mammalian chitinase (Cc06\_g15430) | catalytic activity | RE | 0.78 | 0.0026 |
| Putative methyltransferase DDB\_G0268948 (Cc06\_g18640) | methyltransferase activity | RI | 0.83 | 0.0008 |
| RS | 0.79 | 0.0022 |
| RE | 0.73 | 0.0074 |
| Putative Probable carboxylesterase 6 (Cc07\_g16100) | hydrolase activity | RS | 0.74 | 0.0058 |
| RE | 0.83 | 0.0010 |
| Probable calcium-binding protein CML41 (Cc10\_g03450) | calcium ion binding | RE | 0.73 | 0.0065 |
| serine-type endopeptidase inhibitors (Cc10\_g10180) | serine-type endopeptidase inhibitor activity | RE | 0.76 | 0.0045 |

1. RI = rust incidence, RS = rust severity, RE = rust sporulation [↑](#footnote-ref-2)