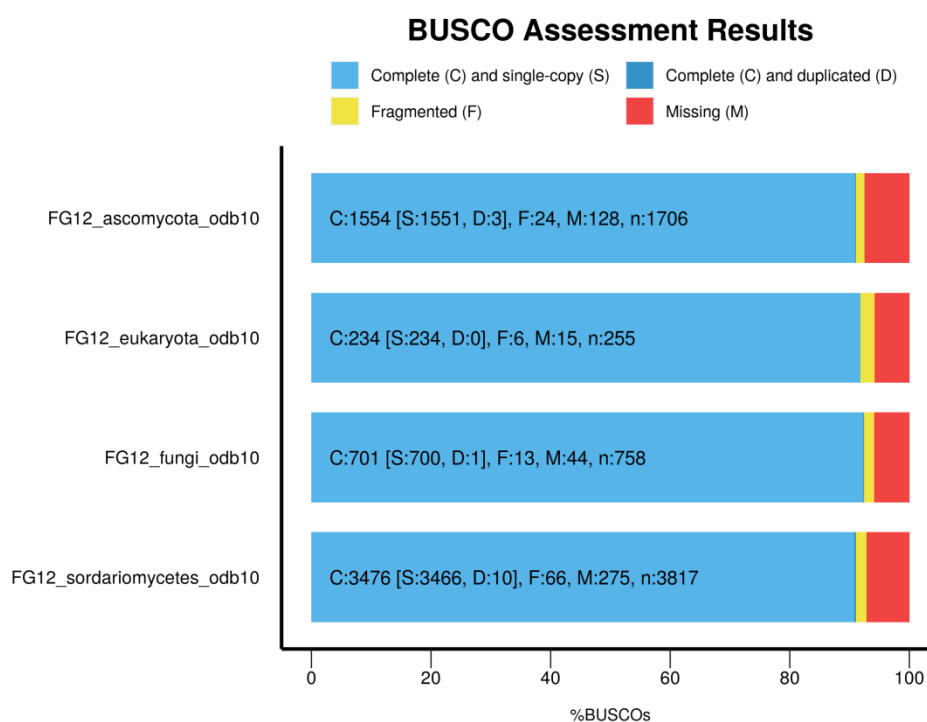


**Figure S1.** Results of the k-mer analysis of the FG-12 genome using Jellyfish software.



**Figure S2.** Results of the BSUCO analysis of the FG-12 genome.

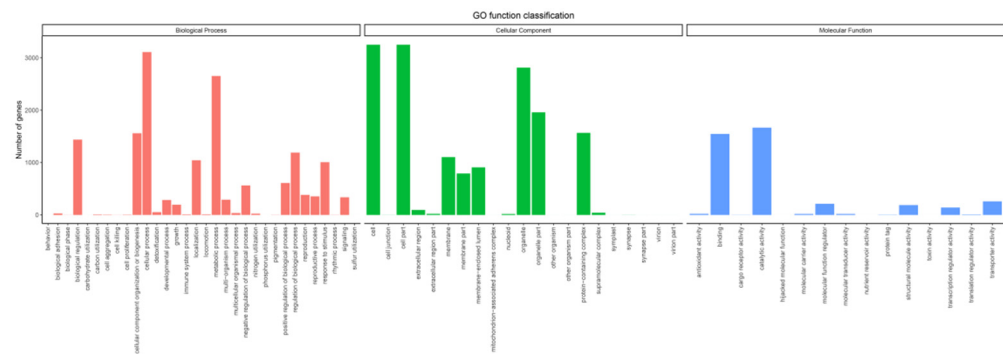


Figure S3. Go annotation of the FG-12 genome.

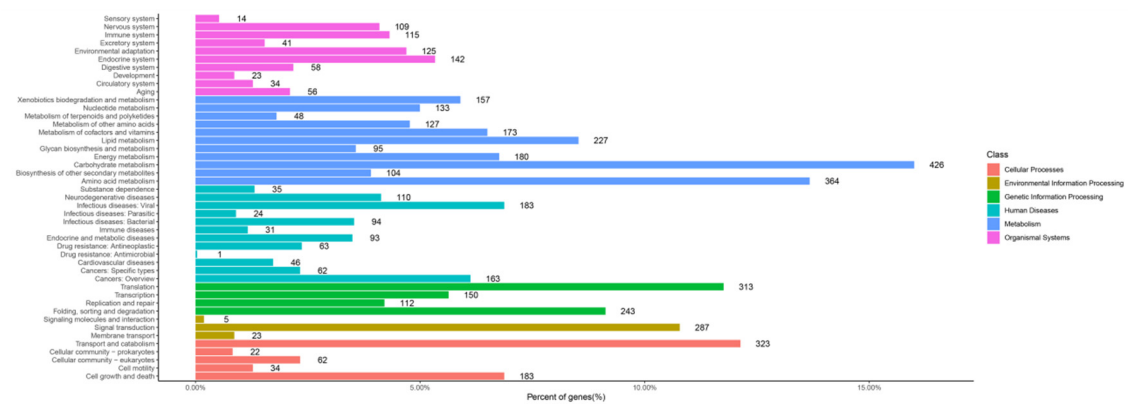
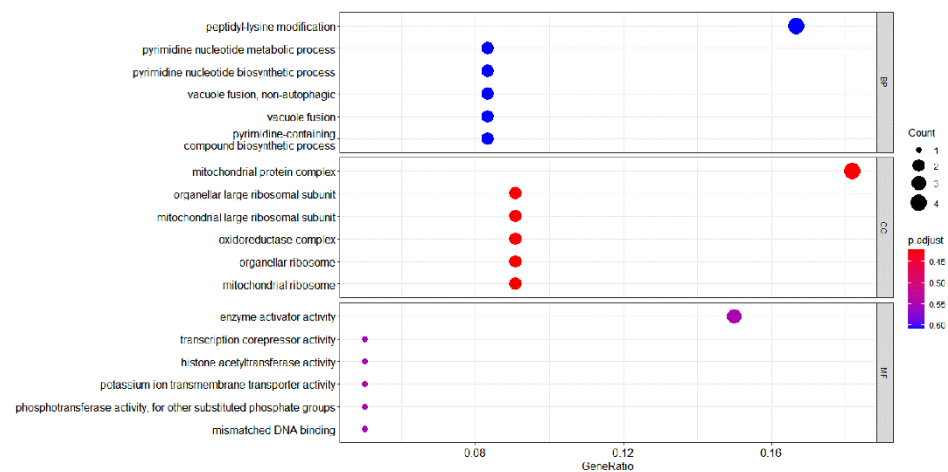


Figure S4. KEGG annotation of the FG-12 genome.

Figure S5. GO annotation of genes specific to the *F. graminearum* type strain PH-1.

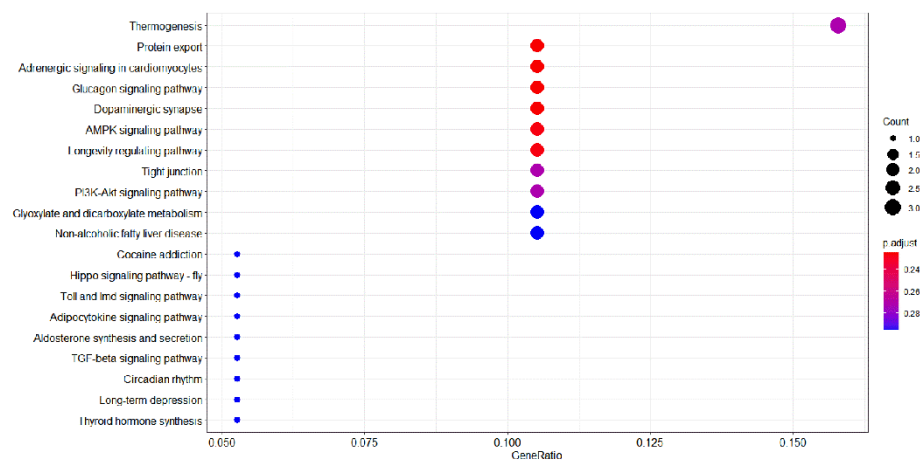


Figure S6. KEGG annotation of genes specific to the *F. graminearum* type strain PH-1.

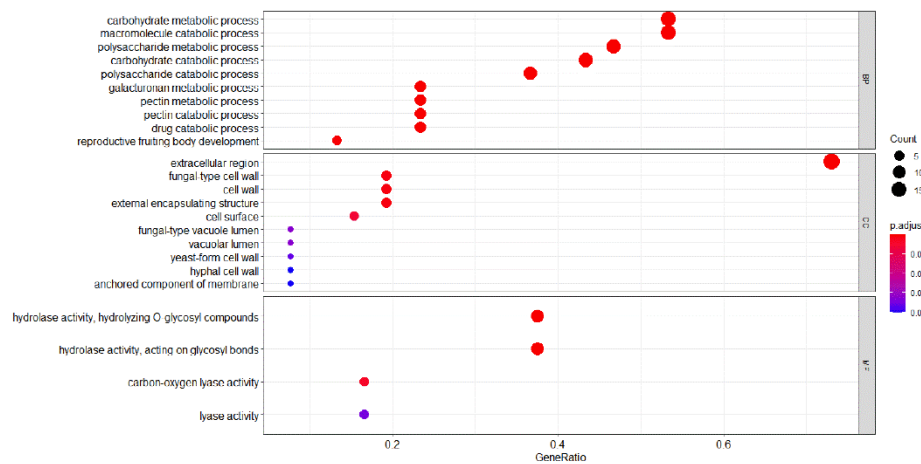


Figure S7. GO annotation of putative effectors in the FG-12 genome.

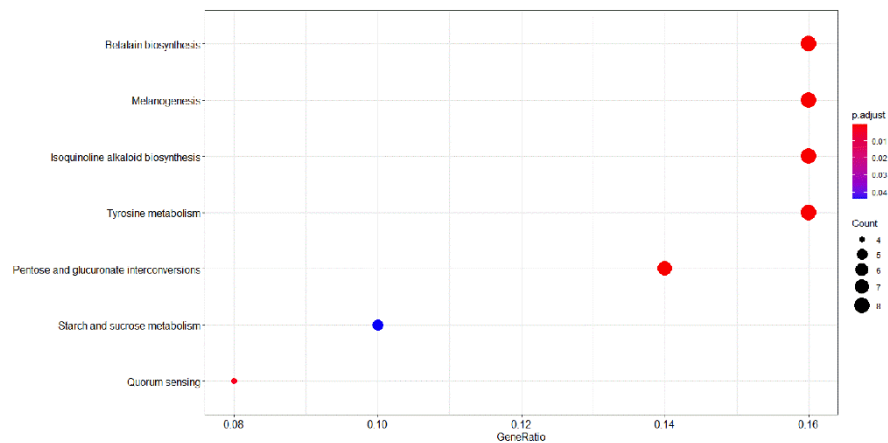
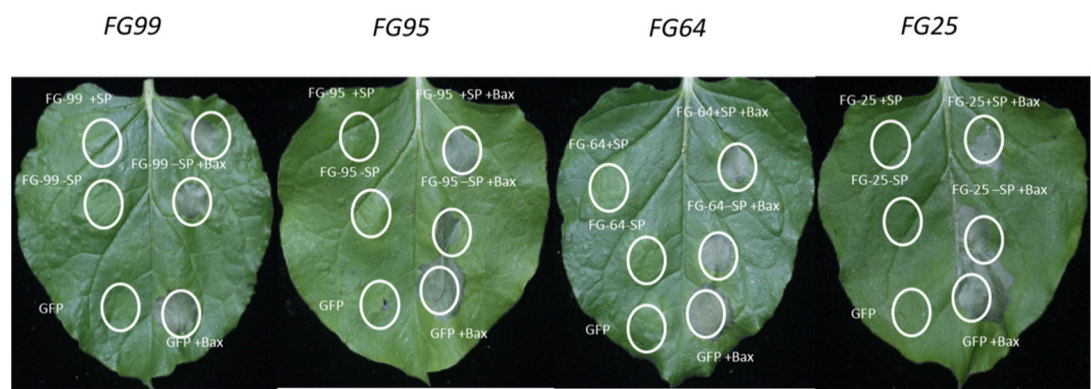
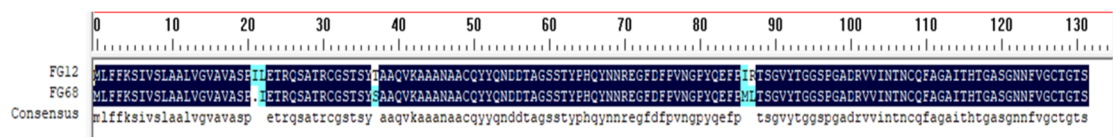


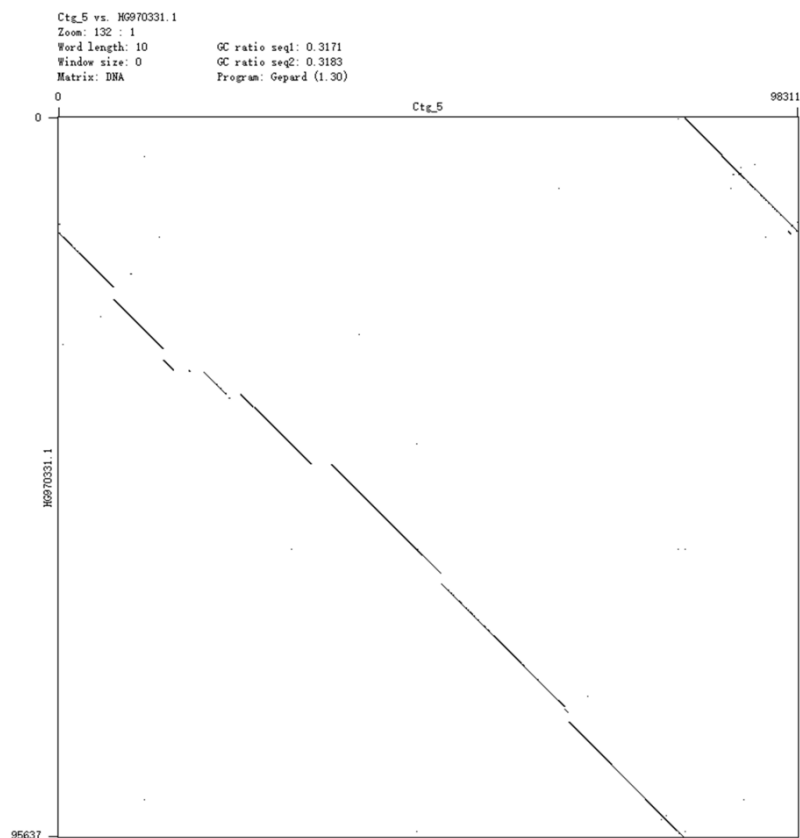
Figure S8. KEGG annotation of putative effectors in the FG-12 genome.



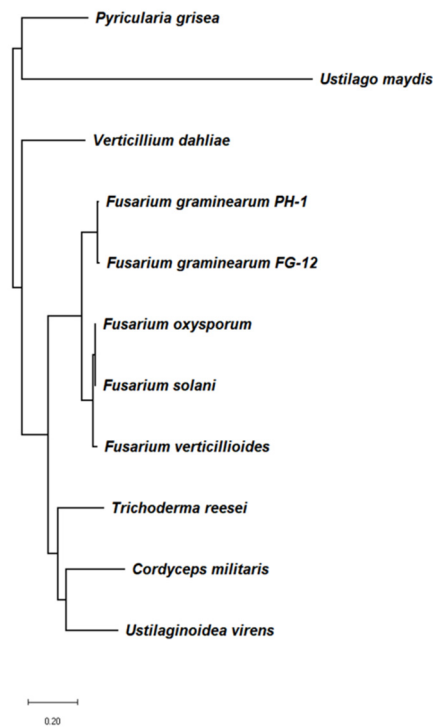
**Figure S9.** Transient expression of putative effectors in *N. benthamiana* leaves via agro-infiltration. Symptoms on leaves of *N. benthamiana* were assessed at 3 days post-inoculation (dpi). Putative effectors including FG99 (FGMG\_005117), FG95 (FGMG\_005015), FG64 (FGMG\_001857), FG25 (FGMG\_006174), while *Agrobacteria* carrying the unaltered pBinGFP2 vector was used as a negative control (GFP), and the addition of Bax as a positive control (+Bax).



**Figure S10.** Sequence alignment of the pathogenicity-related ribosomal nuclease gene from *F. graminearum* FG-12 and PH-1. FG12 indicates the predicted amino acid sequence from the CDS of the type strain PH-1, while FG68 indicates the equivalent CDS from FG-12.



**Figure S11.** Dot plot diagram comparing the structure of the mitochondrial (Mit) genomes of *F. graminearum* FG-12 and PH-1. Complete (Mit) genome alignment using Gepard software was used to compare the FG-12 Mit genome (Ctg\_5) listed on the x-axis to PH-1 Mit genome (HG970331.1) on the y-axis. If the two sequences were perfectly identical, a single line would dissect the graph from the top left to the bottom right.



**Figure S12.** Phylogenetic tree constructed using MEGA-X (<https://www.megasoftware.net/>) based on the genomes of 11 filamentous fungal strains. The tested strains included *Fusarium graminearum* FG12 and PH-1, *Fusarium verticillioides*, *Fusarium solani*, *Fusarium oxysporum*, *Ustilago maydis*, *Pyricularia grisea*, *Verticillium dahliae*, *Ustilaginoidea virens*, *Trichoderma reesei*, and *Cordyceps militaris*.