

*Phytophthora* species are oomycetes – a distinct lineage of fungus-like eukaryotes related to brown algae and diatoms. *P. infestans*, *P. sojae*, and *P. ramorum* represent three major phylogenetic clades of the genus *Phytophthora*. The *P. infestans* genome is the largest and most complex genome in the “kingdom” Chromalveolate sequenced thus far. With a genome that is 240 megabases (mb), it is several-fold larger than *P. ramorum* (65 mb) and *P. sojae* (95 mb). Despite the tremendous difference in size, the number of genes for each species is not that different (*P. infestans* = 17,797, *P. ramorum* = 14,451, and *P. sojae* = 16,988).