

Abad, Z. 2010. How to avoid misidentifying your isolates: The value of the Morphological/Phylogenetic Key of *Phytophthora* exatypes and neotypes. *Phytopathology* 100:S150.

Phytophthora with 105 species is a major genus of plant pathogens. Although there have been considerable advances in its molecular taxonomy, there is still confusion in recognizing new *Phytophthora* species and in identifying described species. This confusion is due in part to the great number of misidentified or incorrectly annotated sequences submitted to the GenBank. Such errors in identification make it difficult to recognize many of the clusters of the “sensu stricto”. The “Holotype” (= Type) is the single isolate that defines the species and the “Ex-holotype” is the isolate originated from the “Holotype”. Interestingly, taxonomic manuscripts published after the description of *P. infestans* in 1876 (until present) rarely contain information on the codes of the types. This information, which has rarely been presented, is vital for refining the systematics of the Genus. We are reviewing the original manuscripts to compile information of the Primary Types, assigning Lectotypes and selecting potential Neotypes. Our goal is to establish a database of sequences of the types and to use selected cultures to develop a Morphological/Phylogenetic *Phytophthora* Key, and to publish a manuscript to update the Taxonomy of the Genus. The USDA-APHIS-MDL is collaborating with the World *Phytophthora* Collection and the *Phytophthora* Database on this important initiative. We expect that the database and the key will be useful tools to avoid misidentifying isolates of this important genus.