

DIVERSITY OF *PHYTOPHTHORA* SPECIES IN NATURAL FORESTS AND STREAMS AND IN RUBBER PLANTATIONS IN VIETNAM

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Many devastating tree declines are driven by non-native *Phytophthora* species which remain unnoticed in their native environment and after introduction to other continents became invasive, threatening a non-coevolved highly susceptible flora. There is an accumulating body of evidence that many important *Phytophthora* pathogens with global distribution are native to Southeast Asia suggesting this region might be one center of origin of the genus *Phytophthora*. Therefore, a 5 weeks *Phytophthora* survey was conducted in spring 2016 in 23 forest stands (tropical rainforests and montane forests) between 12 and 2903 m altitude in 4 National Parks, in 10 natural rivers and streams and in 14 rubber tree plantations across Vietnam. Using classical and molecular identification, the 793 oomycete isolates obtained could be assigned to 18 known species and informally designated taxa of *Phytophthora*, 21 new *Phytophthora* taxa, a diverse array of known and new taxa of *Phytophythium*, *Pythium* and *Elongisporangium* including 15 genotypes from the *Phytophythium vexans* complex, and a new sister genus of *Phytophthora* which is informally designated as *Nothophytophthora* gen. nov. The results from the Vietnamese survey contribute to clarify the origin of the two most destructive invasive *Phytophthora* pathogens of trees and natural ecosystems. Detailed morphological and physiological studies, sequencing of additional gene regions and multigene phylogenetic analyses are underway to characterise and officially describe the new *Phytophthora* species from Vietnam and the new genus *Nothophytophthora*. Soil infestation trials will be performed to test the potential threat posed by new *Phytophthora* species from Vietnam to European forests.