

ENDOPHYTES AND USING FOR MANAGEMENT OF PHYTOPHTHORA LEAF FALL DISEASE OF RUBBER TREE PLANTATIONS IN SOUTH EAST VIETNAM

Dam Van Toan, Pham Quang Thu,
Dang Nhu Quynh, Nguyen Minh Chi

Summary

Phytophthora leaf fall (PLF) disease is a major disease causing significant damage to rubber tree plantations in the South East of Vietnam. The causative pathogens of PLF disease belonging to the Pythiaceae were isolated and identified: *Phytopythium* sp1.; *Phytopythium* sp2.; *Pythium* sp.; *Phytophthora nicotianae*; and *P. heveae*. Isolation and screening of endophytic microorganisms from rubber trees for antagonism to pathogens causing Phytophthora leaf fall disease was conducted. Leaf and twig samples of healthy rubber trees of PB260 clone were collected in Binh Phuoc province for isolation of endophytic bacteria and fungi. The paper introduced the findings of isolation of bacterial and fungal endophytes, and screening of these endophytes to identify those with high antagonistic activity against the pathogens. One fungal strain *Penicillium oxalicum*, and two bacterial strains, *Bacillus tequilensis* and *B. safensis* showed strong antagonism against the pathogens. Three endophytes (*Bacillus tequilensis*, *B. safensis*, *P. oxalicum*) are biosecurity and have potential for biological control of Phytophthora leaf fall disease in the South East Vietnam.

Keywords: *Hevea brasiliensis*, endophytes, *Phytophthora*, *Phytopythium*, *Pythium*.