

Isolation of the Oomycete Organism *Pythium insidiosum* from Water Reservoirs in Thailand

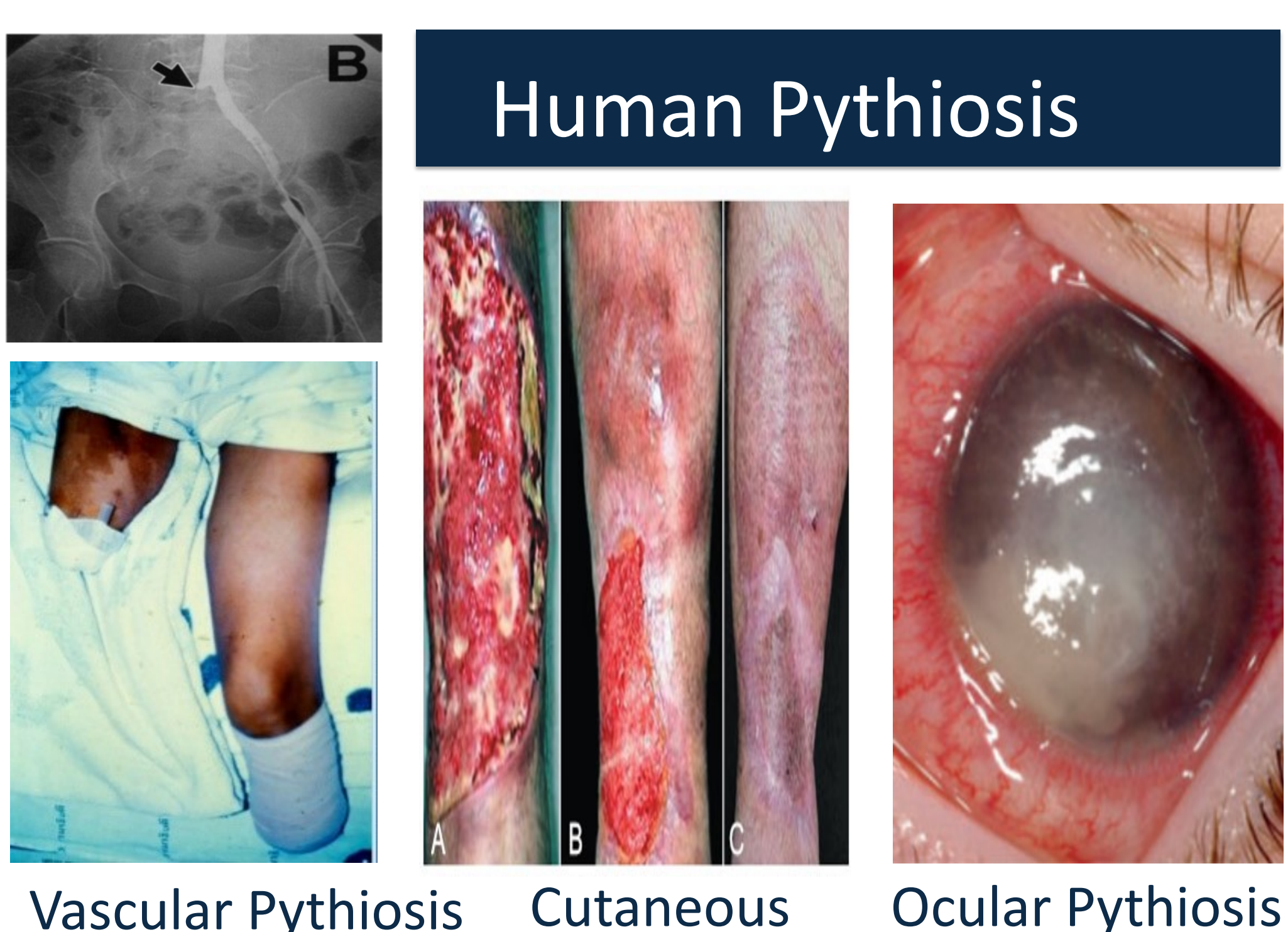
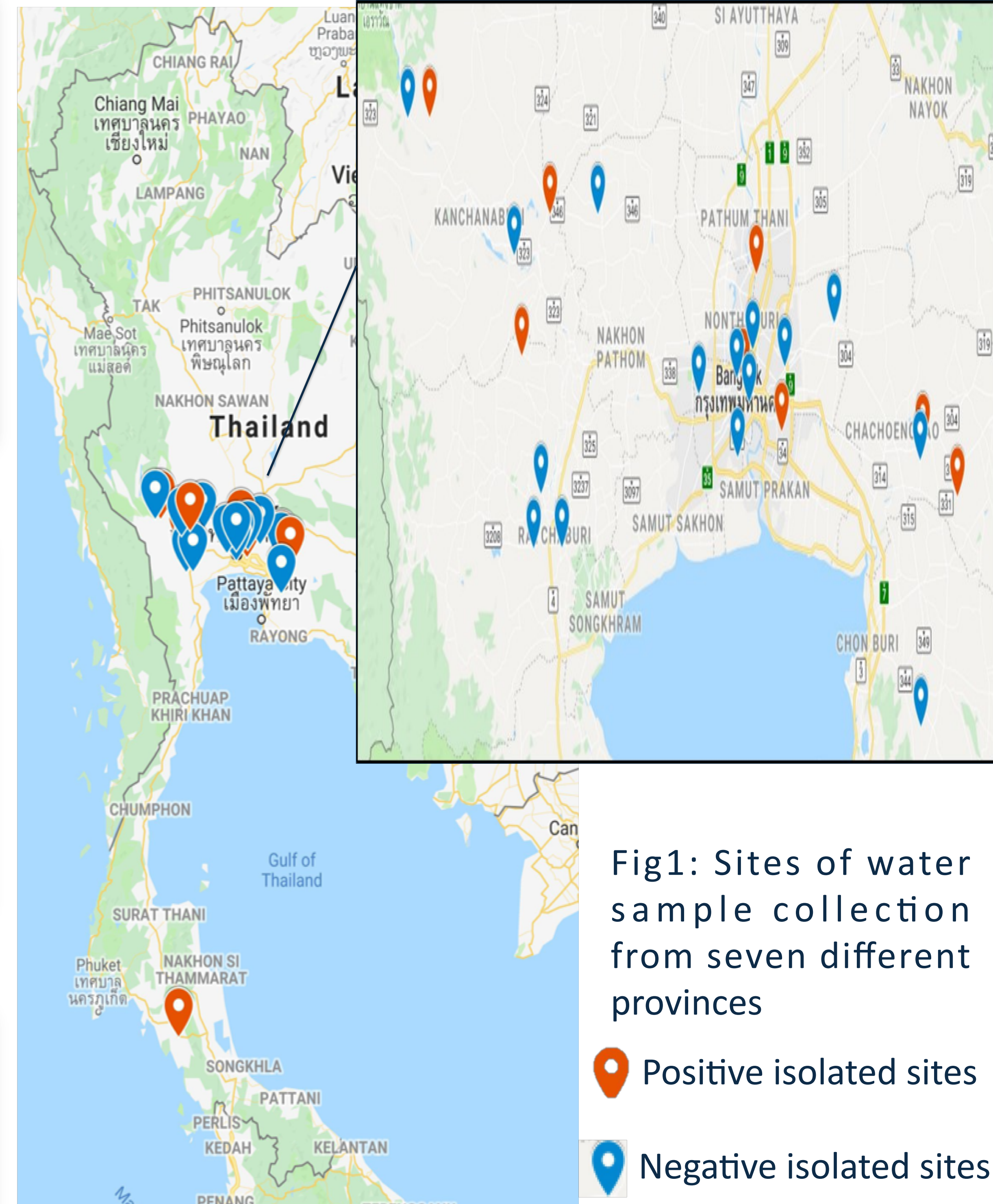
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Abstract

Results

Pythium insidiosum is an oomycete pathogen that causes the life-threatening infection called pythiosis and can infect in humans and animals. *P. insidiosum* was isolated from irrigation water and rice fields in the northern part of Thailand. The current study aims at gaining more insights into epidemiology and ecological niche of *P. insidiosum* in other regions of Thailand. Total 500 water samples were collected, baited with sterile human hairs, and inoculated on Sabouraud Dextrose Agar. Among them, 71 samples identified as suspected colonies of *P. insidiosum* (14.2%). Based on the established multiplex PCR and rDNA sequence homology analysis, 27 colonies (5.4%) were proven to be *P. insidiosum*. SNP-based multiplex PCR analysis allocated into genotypes Clade-II (n = 9; 33%) and Clade-III (n = 18; 67%). In conclusion, *P. insidiosum* is ubiquitous in Thailand and Public awareness should be concerned.

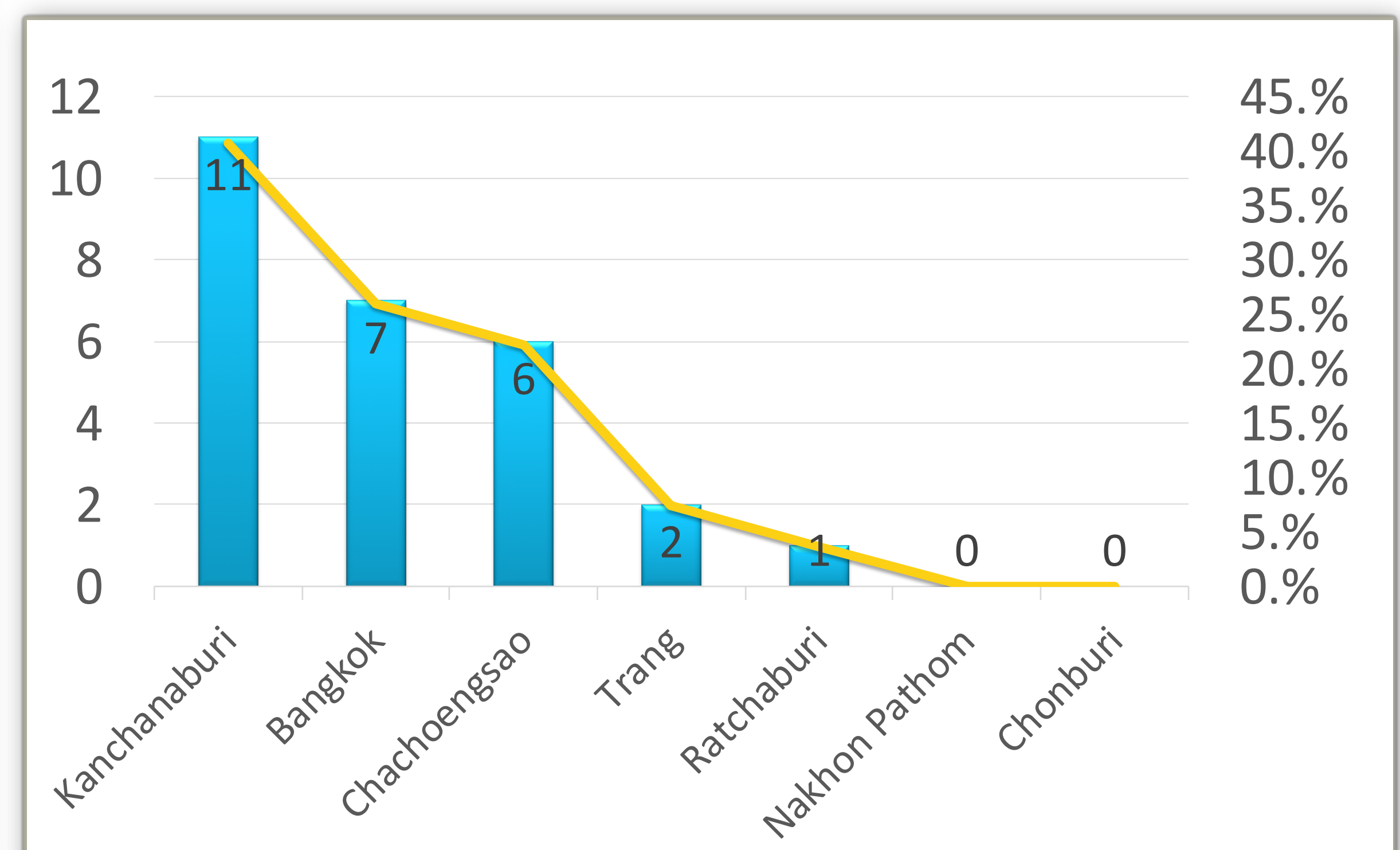
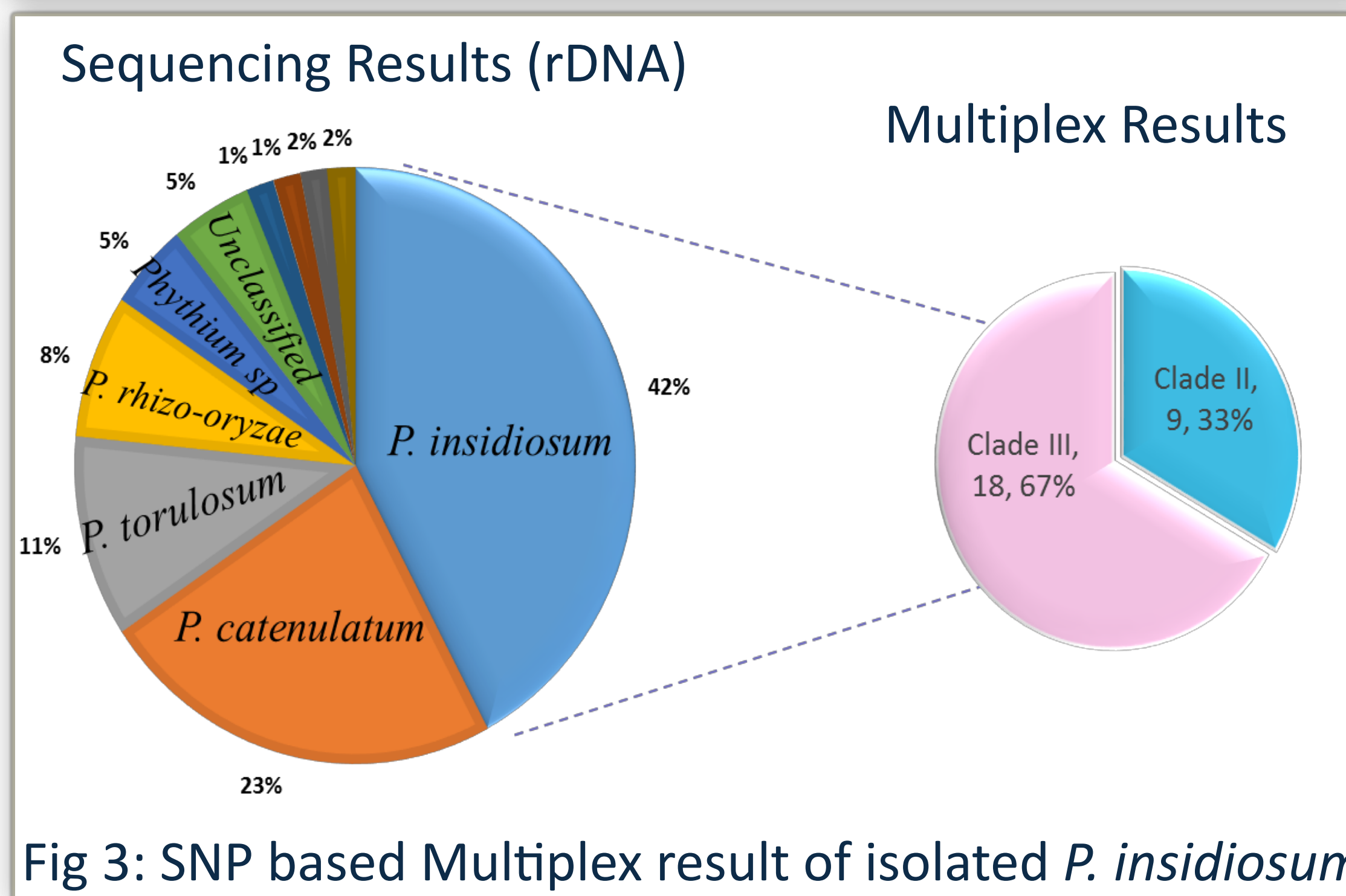


Background

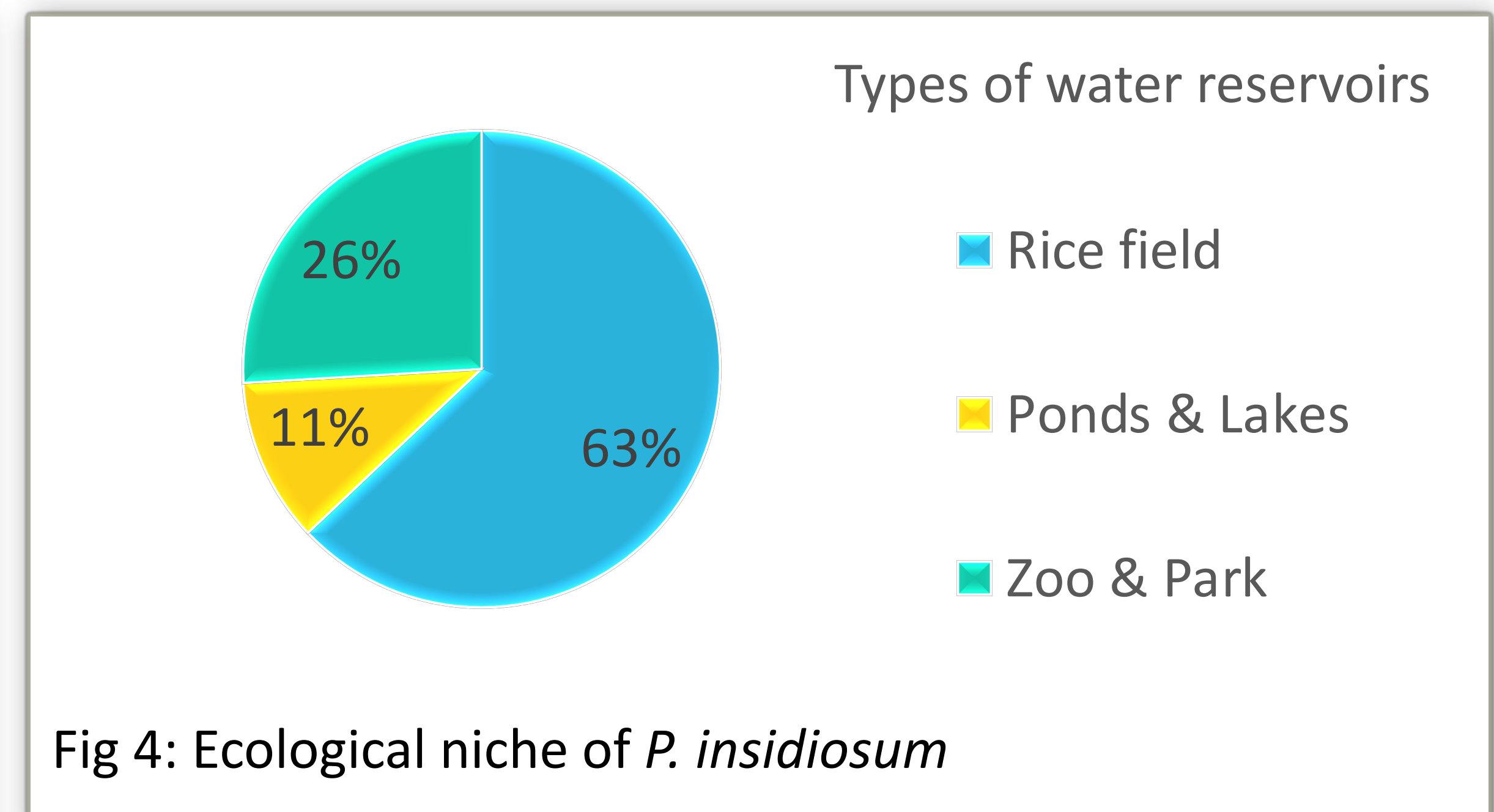
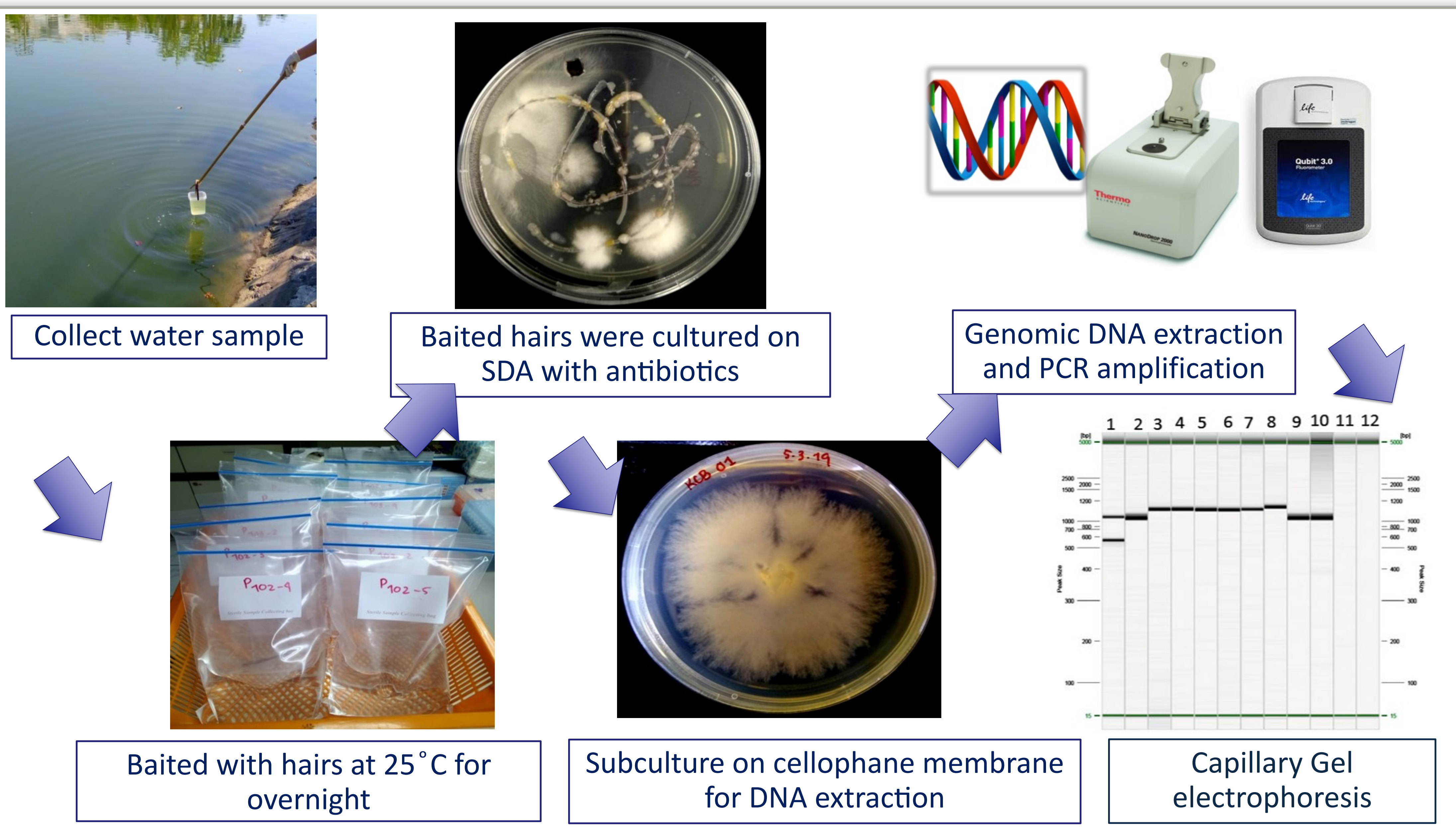
P. insidiosum is ubiquitous in soil and water from the tropical and subtropical regions (1). Pythiosis cases present as cutaneous, ocular, vascular and disseminated forms. Most human pythiosis cases are from Thailand agricultural workers in long time exposure to swampy area (2). Direct contact to infested water is a predisposing factor (3).

Objective

To study the prevalence of *P. insidiosum* in environment, both recreational and natural water reservoirs in Thailand



Workflow



Discussion and conclusion

P. insidiosum was isolated in five provinces out of seven. These isolates were mostly identified in the water sources of rice fields, under shaded area, vicinity of the horse farms and also in the public parks. In conclusion, *P. insidiosum* is ubiquitous in Thailand. Public concern should be raised for prevention of this infection, especially for the individuals those are at high risk.

References

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(2) Krajaejun T, Sathapatayavongs B, Pracharktam R, Nitiyanant P, Leelachaikul P, Wanachiwanawin W, et al. Clinical and epidemiological analyses of human pythiosis in Thailand. Clin Infect Dis. 2006;43(5):569-76.

(3) Supabandhu J, Fisher MC, Mendoza L, Vanittanakom N. Isolation and identification of the human pathogen *Pythium insidiosum* from environmental samples collected in Thai agricultural areas. Med Mycol. 2008;46(1):41-52.