

## Why does the Japanese oak wilt not occur outside Japan?

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In Japan, Japanese oak wilt (JOW) caused by a fungus *Raffaelea quercivora* carried by an ambrosia beetle *Platypus quercivorus* has been prevalent for more than two decades. *P. quercivorus* was recorded from India, Indonesia, New Guinea, Thailand and Taiwan. However, the JOW has been recorded only from Japan. The purpose of our project is to answer the query “Why does the JOW occur only in Japan?” Hamaguchi and Goto (2010) reported two types (Groups A & B) of *P. quercivorus* and suggested taxonomic reexamination of this species. We collected *P. quercivorus* from Japan, Thailand, Vietnam and Indonesia for the Group A, and from Japan, Taiwan and Vietnam for the Group B. This is the first record of *P. quercivorus* from Vietnam. Regarding to the Japanese populations of the Group A, phylogenetic study indicates that the mainland populations that cause the JOW was closest to Thai population while the Ryukyu population was closest to Indonesian, and Vietnam population was intermediate. *R. quercivora* was isolated from all populations of *P. quercivorus* indicating that absence of the JOW outside Japan could not be explained by absence of *R. quercivora*. *R. quercivora* isolates from each country did not form an independent clade. Virulence of *R. quercivora* to *Q. serrata* differed greatly among isolates. An isolate from Taiwan showed stronger virulence than strong-virulent strain in Japan indicating that virulence of *R. quercivora* cannot explain absence of the JOW outside Japan. In future, variations in tree susceptibility to *R. quercivora* need to be determined.

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