Preliminary survey of *Phytophthora* spp. in Japanese forest stands

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Phytophthora species such as *Phytophthora ramorum*, *Phytophthora lateralis*, and *Phytophthora cinammomi* are causal agents of serious diseases in forest trees. Among them, *P. ramorum* is a well-known species that causes sudden oak and larch death. The origin of the diseases is still unknown, but the fact that the diseases occur mainly in Europe, North America, and Australia suggests that their origin may be in Asia or South Asia. Actually, *P. lateralis* was detected in Taiwan, although no mortality was reported. To evaluate the risk of such pathogens, we require information on their distribution and origin. However, there is a severe lack of such information in Japan. Therefore, we conducted a preliminary survey of the diversity of *Phytophtora* in 10 forest stands in the Kanto area, Central Japan. Litter and soil samples along a stream were collected from each stand and maintained in sterile water. Fresh young leaves of *Quercus*, *Camelia*, and *Rhododendron* were kept afloat on sterile water for 2 days. Leaves with necrosis were picked, separated into small pieces, and maintained on a selective medium (V8 juice-based medium modified using agrochemicals). As a result, we detected 6 species of *Phytophtora*: *Phytophthora cryptogea*, *Phytophthora europaea*, *Phytophthora citricola*, *Phytophthora gonapodyides*, *Phytophthora cambivora*, and an unidentified *Phytophthora* sp. There have been no reports on the distribution of *P. europaea* and *P. gonapodyides* in Japan; they did not seem to cause serious damage to the forest stands. This knowledge can contribute to the evaluation of invasive *Phytophthora* spp. In future, we are planning to survey other areas in Japan.

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