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Quick wilt disease of black pepper (*Piper nigrum* L.) in Sri Lanka: isolation of the causal organism by zoospore trapping onto black pepper leaves, its identification and screening *Piper* species against *Phytophthora capsici*

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During the recent past there was a controversy on the cause of the black pepper quick wilt pathogen in Sri Lanka and is due to either *Fusarium* spp or *Phytophthora* spp. This study confirmed the cause of the Quick wilt disease of black pepper (*Piper nigrum* L.) in Sri Lanka as *Phytophthora capsici*. The work conducted showed that isolation of *Phytophthora capsici* as a difficult task; most techniques attempted, i.e. direct isolation from infected plant material, baiting, soil dilutions *etc*. was failed. However, isolation of the causal organism by zoospore trapping onto black pepper leaves which were partially submerged in a quick wilt affected soil and water mixture found to be successful. The lesions obtained had fast growth. They were clear black in colour. The progressive margins of above lesions found to be the best for isolation of *Phytophthora*, the quick wilt pathogen.

The characteristic mycelia growth pattern, length/breadth ratio 1.83 ± 0.29 and long sporangia stalks 66.18 ± 44.75 µm confirmed the isolated fungi as *Phytophthora capsici*. Besides, inoculation of detached semi matured leaves of different *Piper* species with the pure cultures of *Phytophthora capsici* showed no infection on *P. chuvya* and *P. longum* confirming that the above two *Piper* species are resistant against quick wilt pathogen. This result suggests the possibility of using *P. chuvya* root stocks to graft with high yielding black pepper cultivars. In future, this technique may consider in the quick wilt/collar rot control programme. Although *P. longum* showed some resistance, it may not be suitable as a root stock as the stem diameter is different when compared with cultivated black pepper.

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