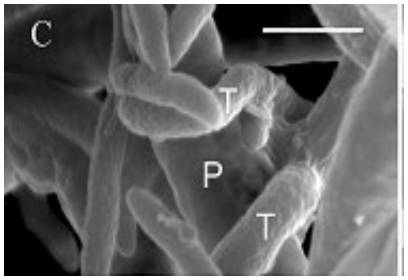
Cite this as: Heng JIANG, Liang ZHANG, Jing-ze ZHANG, Mohammad Reza OJAGHIAN, Kevin D. HYDE, 2016. Antagonistic interaction between *Trichoderma asperellum* and *Phytophthora capsici* in vitro. *Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*. **17**(4):271-282.
http://dx.doi.org/10.1631/jzus.B1500243

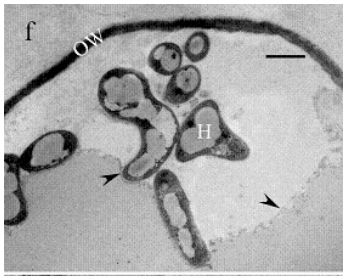
Antagonistic interaction between *Trichoderma asperellum* and *Phytophthora capsici* in vitro

Key words: Antagonism, Electron microscopy, Oogonium, Oospore, Pepper

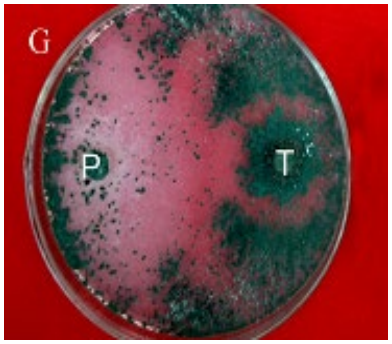
Research Summary

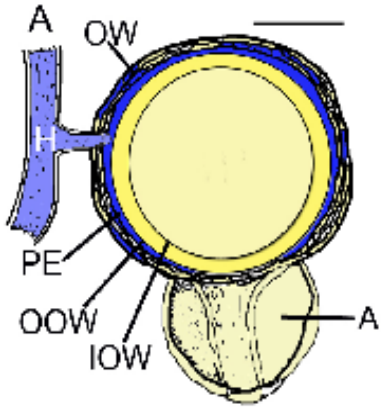
This study mainly focused on interactions between fungal hyphae of *Trichoderma asperellum* and pathogenic oospores of *Phytophthora capsici* at ultrastructural level





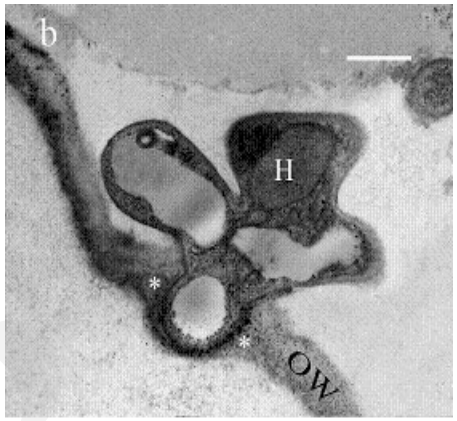
- **Pathogen isolation**
- **Screening of antagonistic isolates of *Trichoderma spp.***
- **Fungal identification**
- **Antagonism of *Trichoderma* strains against hyphae and oospore of *Phytophthora capsici***





Innovation points

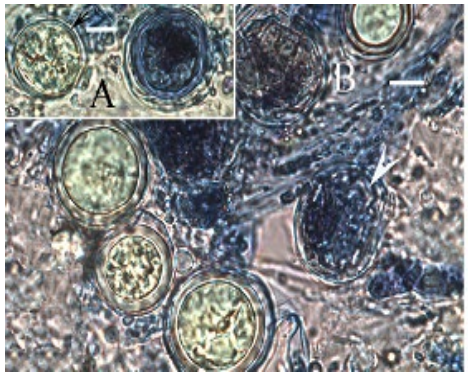
● **Antagonistic** efficacy of *Trichoderma asperellum* against *Phytophthora capsici*



● **Ability** of *Trichoderma asperellum* to collapse the mycelium of *Phytophthora capsici*



●**Infection** of the oogonia and oospores of *Phytophthora capsici*of by *Trichoderma asperellum*



JZUS-B

Innovation points

A number of figures were generated to summarize the results of this study

Fig.1 | Schematic drawing of infection of oogonium and oospore of *Phytophthora capsici* by hyphae of *Trchoderma* sp.

Fig. 2 | One parsimonious tree based on combined ITS, tef1 and rbp2 sequences

Fig. 3 | Antagonism of *Trichoderma asperellum* CGMCC 6422 against *phytophthora capsici*

Fig. 4 | Hyperparasitism of *Phytophthora capsici* oospores by *Trichoderma asperellum* CGMCC 6422

Fig. 5 | Percentages of undamaged and damaged oospores after 7, 12, 17, 22 and 42 days

Fig. 6 | Transmission electron micrographs (TEMs) of the interaction between oospores of *Phytophthora capsici* and *Trichoderma asperellum*

Fig. 7 | Malformed, shrinking, aborted and degraded oospores

JZUS-B