

Praethong Lamool 2006: Efficacy of *Trichoderma harzianum* for the Control of Root Rot of Hydroponically Grown Lettuce Caused by *Pythium aphanidermatum*.

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The study on efficacy of *Trichoderma harzianum* (CB-Pin-01) fresh culture for controlling lettuce (green cos) root rot caused by *Pythium aphanidermatum* grown in hydroponic culture (Nutrient Film Technique, NFT) revealed that seed treatment effectively controlled lettuce root rot. Growth of lettuce characteristics from this treatment was comparable to the *P. aphanidermatum* non-inoculated lettuce. Comparison of efficacy of *T. harzianum* (CB-Pin-01) and other biocontrol agents (BCA) for the control of lettuce root rot *T. harzianum* (CB-Pin-01) showed that the most effective BCA followed by *Bacillus cereus* (B03), *T. virens* (TV16), and *T. harzianum* (T50), respectively.

Evaluation on rate of *T. harzianum* (CB-Pin-01) application into nutrient solution revealed that applying spore suspension of *T. harzianum* (CB-Pin-01) prepared by washing 100 g – fresh culture with 200 L of nutrient solution, at both sowing and after transplanting stages and in the nutrient solution at weekly interval until harvest could reduce disease incidence and promote plant growth. However, investigation on the influence of frequency of *T. harzianum* (CB-Pin-01) application indicated that single application of *T. harzianum* (CB-Pin-01) at the rate of 100 g – fresh culture/200 L nutrient solution at transplanting stage provided better control of lettuce root rot and better growth characteristics than three, four, and two applications, respectively.

The adjustment of EC and pH of nutrient solution was found affecting disease control efficacy of *T. harzianum* (CB-Pin-01). Application of *T. harzianum* (CB-Pin-01) prepared by washing 100 g – fresh culture/200 L into *Pythium* inoculated nutrient solution at seed sowing stage combining with the weekly interval of nutrient solution replacement and the adjustment of nutrient solution to maintain EC at 1.6 mS/cm and pH at 6.0 through harvesting stage could reduce *Pythium* infection. If *T. harzianum* (CB-Pin-01) was not applied in a treatment non-replacement nutrient solution, *P. aphanidermatum* infected lettuce root heavily and significantly reduced total plant fresh weight. However, the nutrient solution replacement had no effect on lettuce growth in *P. aphanidermatum* non-inoculated treatment with adjustment of EC and pH of nutrient solution together with *T. harzianum* application.

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