

Abstract

One hundred forty four isolates of *Trichoderma* spp. were derived from 65 bamboo soil samples of 17 provinces in Thailand by soil dilution spread plate on Martin's medium. All isolates of *Trichoderma* spp. effectively inhibited mycelia of *Pythium aphanidermatum*, a causal agent of damping-off disease of Chinese kale on potato dextrose agar (PDA) at the room temperature. *Trichoderma* spp. isolates TS-083, TS-089, TS-095, TS-011 and TS-126 gave 57.04, 54.07, 51.85, 50.74 and 49.63 % of mycelial growth inhibition, respectively.

Thirty selected isolates of *Trichoderma* spp. were developed by using ultraviolet (UV) irradiation. All UV irradiated strains (-M) of *Trichoderma* spp. were able to resist the fungicide (benzimidazol), characteristics of colonies were different from wild type strains, and effectively inhibited mycelia of *P. aphanidermatum*, especially isolates TS-083-M, TS-095-M, TS-033-M, TS-089-M and TS-058-M gave 44.44, 43.70, 41.48, 41.11 and 40.00 % of mycelial growth inhibition, respectively.

From wild type (30 isolates) and UV irradiated strains (30 isolates) of *Trichoderma* spp. tested under the glasshouse conditions, all isolates significantly decreased disease severity as compared with the control, especially isolates TS-095-M, TS-026, TS-083, TS-063 and TS-063-M gave the disease incidence with 10.00, 10.56, 11.11, 11.67 and 12.22 %, respectively at 14 days after inoculation with *P. aphanidermatum* while the control was 62.22 %.

For the growth promotion of Chinese kale test, both wild type (15 isolates) and UV irradiated strains (15 isolates) of *Trichoderma* spp. significantly increased plant growth as compared with the control, especially isolates TS-089, TS-011, TS-016-M, TS-126-M and TS-011-M increased overall growth of Chinese kale (averages of 11 parameters) by 60.98, 51.31, 48.36, 43.28 and 42.76%, respectively when compared with the control at 42 days after sowing.