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CROWN AND COLLAR ROTS IN APPLE CUASED BY *PHYTOPHTHORA PALMIVORA*

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ABSTRACT

Phytophthora palmivorais the mean fungi associated with crown rot of apple Anna cvs.which recorded as ahighest isolated fungi on April in Ismaelyia (Kasasseen and El-Ferdan), W. Nobareya (El-Glaa and El-Shagah), Giza (Badrsheen), Behera (Badr) and (El-Wasta) Bani-Sweef governrates, followed by, *Rhizoctonia solani*, *Trichderma spp.*, *Bacillius subtilis*, *Acremonium* sp.,,*Cylindrocarpon* sp *Pestalotiopsis* sp.,, *T. harzianum, Alternaria sp.* and *Verticillium* sp. In Season 2014.

Pathogenicty test of fungi associated with crown rot of apple in Egypt proved that the *Phytophthora palmivora* caused the typical symptoms of crown rot of apple and the other fungi associated did not cuased any symptoms. Crown rot of Apple Anna cv. grafted on apple rootstocks was recorded highest length (mm) on apple roostocks (M109) follwed (M106),(M 111) and at least (M7) in Abo –Backr El-Sedek (W.Nobareya) and Toukh(Qaliobeya); at 2014 and 2015.

The Flood irrigation (25 days interval) and. drip irrigation (1 h / day) and calcium.and potassium chloride and Ca.and K. acetate under loum soil reduced the D.S.% of crown rot of apple rootstocks (EM26, M9, M7, M111, EM27, M109, M104 and M106) when compared with control, and Bio-control agents (*Trichoderma harzianum*), *B.subtilis* (Bs37) and *T. viride* reduced the D.S.% on apple rootstock (M9;EM26s; M7; M111; M27; M109; M104 and M106) when compared with control, on Abo-Homes; Wady El-Molak and Wady El-natron at 2014-2015.

Fungicides; Montirow and Hictor follwed by Alliatte, Migoor, Ligar, Breweet and Faster-Top at 250, 500 and 1000 ppm inhibited the radial growth of *P palmivora* in laboratory, and reduced the radial growth of *P palmivora* in Lab. at 100, 50 and 25 ppm. and spraying Ligar; Migoor and Montirow at 1000 ppm reduce the D.S.% of crown rot of apple rootstocks (EM26, M9, M7, M111, EM27, M109, M104 and M106) and treat with 1/ kg on 10 liter water and treat the trunck of tree with Alliatte ; Hictoor ; Breweet and at least Fastertop when compared with the control in wady El-Natroon in (2014 & 2015).

Ligar; Migoor and Montirow at 1000 ppm and treat with 1/ kg on 10 liter water with Alliatte ; Hictoor ; Breweet and Fastertop when compared with the control.

Key words: Apple rootstocks; associated fungi; Biological control; Chemical control; crown and collar rot; *Phytophthora;* organic fertilizers; potassium and calcium salts, soil type.