

مقاومة مرض تبقع الأوراق وقصبات الفوموبسيس في العنب

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CONTROL OF PHOMOPSIS CANE AND LEAF SPOT OF GRAPEVINE

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ABSTRACT: *Phomopsis cane and leaf spot of grapes is an economically important disease of grapes in many regions of the world. Efficacy of application of antioxidants, calcium salts and fungicides on control of phomopsis cane and leaf spot that caused by Phomopsis viticola, was examined under greenhouse conditions during 2010 growing season in Belco Egypte Company. Antioxidants were prepared and applied by using concentration 200 ppm, calcium salts were applied by using concentration 400 ppm and fungicide were applied by using concentration of recommended dose of the product company. All components were applied before and after artificial infection. All the tested antioxidants reduced the disease significantly, but ascorbic acid was gave the best result. The tested calcium salts decreased the disease significantly, but calcium phosphate was the best one. All the tested fungicides reduced significantly disease severity, generally the fungicide Filint gave the best result, followed by Topas and Punch*

Key words: *Vitis vinifera , Phomopsis viticola, antioxidants, calcium salts and fungicides.*

مقاومة مرض العفن الجاف الفيوزاري في درنات البطاطس أثناء التخزين

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CONTROL OF FUSARIUM DRY ROT DISEASE ON POTATO TUBERS DURING STORAGE CONDITIONS

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ABSTRACT: Several antagonistic micro-organisms, fungicides and other chemical substances were used for controlling the dry rot disease caused by *Fusarium solani* on potato tubers during storage conditions. *Trichoderma harzianum* (1) and *T. harzianum*2 were the most effective bioagents in controlling the dry rot pathogen under storage in cold conditions. Among the five fungicides tested for controlling the dry rot disease on potato tubers, Rizolex-T and Monceren were the most effective fungicides with (100ppm) under storage in cold conditions. Three organic acids and four Mineral salts were tested as chemical control; Salicylic acid (300ppm) and Calcium phosphate (400ppm) were the most effective in controlling the dry rot disease. Integration among the most effective treatments that used in controlling the *Fusarium* dry rot under cold storage conditions were reveal that. Salicylic acid (300ppm) + [CaPO₄] (400ppm) + Rizolex-T (100ppm) was the most effective treatment in controlling the *Fusarium* dry rot disease incidence, followed by Salicylic acid (300ppm) +Rizolex-T (100ppm).

Key words: Potato, dry rot disease, *Fusarium solani*, storage diseases, bioagents, fungicides, organic acids, mineral salts and integrated control.

***STUDIES ON MONOSPORASCUS CANNONBALLUS THE CAUSAL ORGANISM
OF MONOSPORASCUS ROOT ROT/VINE DECLINE DISEASE***

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ABSTRACT:

Monosporascus root rot/vine decline disease of cucurbit plants caused by *Monosporascus cannonballus* (Pollack and Uecker) is very important disease which severely affects roots causing large losses in crop. The pathogenicity tests of *M. cannonballus* to twenty nine cucurbit and six noncucurbit species and cultivars were evaluated in greenhouse. Percentage of infection was observed in all cucurbit species at frequencies ranged from 6.67-96.67% and *M. cannonballus* was reisolated from 20-100% of the plants. Rating *Monosporascus* root rot/vine decline of cucurbit plants, from the most tolerant to the most susceptible were: loofah, pumpkin, snake cucumber, squash, cucumber, cantaloupe and watermelon respectively, Noncucurbit plants included eggplant, tomato, wheat, barley, pea and maize resulted percentage of infection 30.00, 7.71, 38.89, 34.44, 53.33 and 13.13% respectively, while *M. cannonballus* was reisolated from these noncucurbit plants as 71.11, 0.0, 18.79, 17.79, 63.34 and 33.33%, respectively

Key words: *Monosporascus cannonballus*, *Monosporascus* root rot/vine decline, cucurbit, noncucurbit and host rang

CONTROL OF FUNGAL PEPPER ROOT ROT DISEASE

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ABSTRACT:

All diseased plant materials that collected from five governorates in Egypt were subjected to isolate the causal pathogens. Many soil fungal pathogens were isolated i.e. *Fusarium solani*, *F. oxysporum*, *F. semitectum*, *F. aveniceum*, *Macrophomina phaseolina*, *Rhizoctonia solani*, *Pythium* spp., *Alternaria* spp. and others. The most frequent pathogenic fungus that isolated from all diseased materials that collected from the five governorates was *Macrophomina phaseolina*, followed by *R. solani*, whereas the least isolated fungus was *Alternaria* spp, followed by *Pythium* spp. *Fusarium solani* (five isolates), *Fusarium aveniceum* (three isolates), *Fusarium oxysporum* (five isolates), *Fusarium semitectum* (four isolates), *Rhizoctonia solani* (five isolates), *Macrophomina phaseolina* (five isolates) were chosen for pathogenicity tests against the commercially grown pepper genotype "Orangery" • was tested under greenhouse conditions. Five tested isolates of each isolated fungi were pathogenic to pepper plants. These fungal isolates differed significantly in their virulence. To control of these pathogens, soil solarization, calcium salts, antioxidants, biological control agents as well as fungicides were applied to achieve to the best method for disease control. All mentioned control methods were effective with various degrees.

Key words: Pepper, Fungal root rot, *Fusarium*, *Rhizoctonia*, *Macrophomina*, Disease control, Solarization, Calcium

***AUGMENTATION OF ANTAGONISTIC EFFECT OF SOME BIOAGENTS
AGAINST FUNGI CAUSING PEPPER FRUIT ROT BY GAMMA RADIATION***

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ABSTRACT:

The effect of some biological control agents on the growth of seven isolates of the most frequent isolated pathogens from fruit rot of pepper, i.e. 3 isolates of *Fusarium*, 2 isolates of *Alternaria* and 2 isolates of *Aspergillus* were studied under laboratory conditions. Eight isolates of *Trichoderma* spp and one isolate of *Bacillus subtilis* were used for determination of the antagonistic activities against fungal pathogens in dual culture laboratory conditions. Three parameters were measured for antagonistic activities, i.e. linear growth and reduction of fungal growth under stress of bioagent, as well as over growth and/or inhibition zone. *B. subtilis*, *Trichoderma hamatum*, *T. harzianum* and *T. viride* were found to be the most potent biocontrol agents against most of the pathogens. The antagonistic effect was increased after irradiation of *B. subtilis* to radiation dose of 1 kGy and irradiation of *Trichoderma* sp. to a dose of 0.2 kGy.

Key words: Biocontrol Agents, Pepper, Fruit Rot, Radiation.

TOMATO FUSARIUM WILT DISEASE

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ABSTRACT:

Tomato plants are widely grown in Egypt. They can be grown in different seasons throughout the year round in open fields and in protected cultivations. Tomato is considered one of the major vegetable crops for local consumption and industry. *Fusarium oxysporum* f.sp. *lycopersici* (Sacc) Snyder and Hansen. This fungus can infect tomato plants at all growth stages. The fungus grows in the vascular bundles and inhibits water flow causing wilting, ultimately leading to plant death. Isolation and identification of the causal pathogen were done using samples collected from different tomato growing areas from nine governorates in Egypt. 21 *F. oxysporum* f.sp. *lycopersici* isolates were used in pathogenicity tests and revealed as pathogenic to tomato plants and caused the same identical symptoms with various degrees of disease . different nitrogen (N), phosphate (P) and potassium (K) fertilizers in combinations (NPK) on tomato wilt disease severity percentage. Effect of soil solarization, as a physical mean, on the control of tomato wilt disease was studied in black pots. This trial was done during hot summer days. Biological control was carried out under greenhouse conditions. The pots were artificially infested with *T.harzianum* isolate No.2, two weeks before sowing at the rate of 3% of the soil weight (w/w). The grown cultures of Actinomycetes (gray group) were diluted with sterile water to give a cell concentration of 10 cell/mel and it was added to the soil at the rate of 75 ml/pot. Antioxidants i.e., Ascorbic acid, Hydroquinone, Salicylic acid and Sodium benzoate at different rates of concentrations (12.5, 25, 50, 100, 200 ppm) were used as Seed soaking the and Soil drenching by irrigated the pots five times with antioxidants solutions two weeksintervals. The effect of some fungicides i.e., Tashgareen, Moncut and Topsin M-70 were applied at the recommended dose as seed dressing with the rate of 3g/kg seeds, also as soil drenching at the rate of 250g/ 100 liter, respectively. Integrated control was done using the successfully individual control treatments in the above trials of control.

Key words: Tomato, Fusarium wilt, Disease control

FREQUENCY OF VERULENCE AND VIRULENCE FORMULA OF WHEAT STRIPE RUST RACES IDENTIFIED IN EGYPT

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ABSTRACT:

Wheat stripe rust is one of the major diseases on wheat in Egypt which appears annually in virulence of different frequencies. In this investigation, stripe rust samples were collected from different location of lower Egypt during two season (2005/06-2006/07). Three single pustules method of isolation was followed for each sample. Rust data were recorded as infection types and virulence frequencies were determined against 22 Yr genes, in monogenic lines and some Egyptian genotypes. Virulence frequencies were very high against YrCV, Yr (3), Yr SU, Yr (6), Yr (7), Yr 2, Yr 7, Yr 8, Yr 9, Yr 27, Yr 18, Yr 6 and Yr A, while the lowest frequencies were found against Yr1, Yr 5, Yr 10, Yr 15, Yr SD, Yr 3, Yr SP, Yr 17 and Yr 4. The cvs. Sakha 61, Sakha 94, Gemmeiza 9 and Giza 168 were the least frequencies. The physiologic races were identified according to their reaction on the 22 Yr,s and virulence formula (virulence / avirulence) was recorded for each race. Thirteen physiologic races of *Puccinia striiformis* were found. Race 102E22 was most frequent (13.33 %) followed by races 238E0 and 238E182(10%). The least ones in the regard were races 198E144 and 2E128 (3.33%).

Key words: Virulence, Frequency, identified, stripe rust, Races, Monogenic

SUPPRESSION OF FUSARIUM WILT AND ROOT ROT DISEASES OF CUCUMBER USING SOME ACTIVE BIOAGENTS AND COMPOSTS

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ABSTRACT:

Wilt and root rot diseases are common and widespread on cucumber plants in both protected and open field cultivation all over the country. They reduce the number of plants in the fields, and greenhouses and consequently reduce the commercial yield of fruits. In the course of this study, cucumber infected samples were collected from different locations throughout the country. The causal organisms and the associated fungi were isolated, purified and identified. Three different *Trichoderma* spp. were tested against both *Fusarium oxysporum* f. sp. *cucumerinum* and *F. solani* (in vitro) to study their inhibitory effect which proved their significant effect against both pathogens. The same bioagents were also used against both diseases in pot experiment under greenhouse condition which reflected their active role in disease management. Also, different composts i.e. cow, horse, chicken manures and plant debris were tested against both diseases under greenhouse condition in loamy and sandy soils. The results obtained gave significant effect in reducing the incidence of both diseases. Wilt suppression was greater in loamy soil under the effect of *Trichoderma harzianum* (73.39%) and / or plant debris (48.50%) also, root rot suppression was high with *T. hamatum* (50.13%) and cow manure (34.20%). While in sandy soil wilt suppression was greater due to *T. harzianum* (62.07%) and cow manure (41.60%). Root rot was also reduced by *T. harzianum* (80.27%) and plant debris (55.10%) which were greater than the other treatments. Therefore, both methods can be used safely in wilt and root rot diseases management on cucumber plants.

Key words: Cucumber, wilt, root rot, inhibition, suppression.