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## ABSTRACT

*Rhizoctonia solani* is considered as an important soil-borne fungal pathogen which survives in soil for long time due to formation of sclerotia on newly formed potato tubers and causing black scurf symptoms. The fungus infects potato sprouts and stems causing death of sprouts and stem canker. This disease is considered as one of the devastating diseases infecting plants and tubers in the field. The disease is distributed in all surveyed governorates, The highest percentage of infection recorded in summer plantation season than in (Autumn) and winter season mainly in El-Kaloubia and El-Minia governorates. Fifteen isolates of *R. solani* were isolated from naturally infected stems and tubers. Ten of them belonged to AG-3 anastomosis group, which severely attacks potato plants. These ten isolates grew well on different agar media tested. Potato dextrose and potato agar media were the most favorable for fungus growth. Lady-Rosetta, Anova and Herms were the most susceptible cultivars whereas Arezona and Areka were least susceptible. The disease incidence and severity decreased when tuber seeds were kept for sprouting for 21 days than 7 or 10 days, and when tubers were sowed in silty soil than sandy-caliche which gave the highest percentage of infection. The percentages of infection decreased when tuber seeds were sown at 4 cm from the soil surface, whereas it was maximum when seeds were planted at 20 cm. ***Trichoderma harzianum* suppressed canker and black scurf disease incidence and gave the best control of the disease, followed by *T. viride* then *B. subtilis*. *Pseudomonas fluorescence* which were the least affected ones. Eucalyptus leaves extract gave the highest percentages of healthy potato and the lowest both stem canker and black scurf disease severity than worm-wood, white mulberry, Castor oil-plant and spearmint extracts. The fungicide Rizolex gave the highest affectivity in reducing the disease severity followed by Monceren-compy and Copro-Antracol.**

يعتبر الفطر *Rhizoctonia solani* من فطريات التربة الخطيرة حيث يعيش فى التربة لفترات طويلة بسبب تكوينه للأجسام الحجرية التى تصيب درنات البطاطس المتكونه حديثا مسببا لها أعراض مرض القشرة السوداء كما يهاجم السوق تحت سطح التربة والنموات الجديدة مسببا تقرحها. يعتبر هذا المرض أحد الأمراض الخطيرة التى تصيب نباتات ومحصول البطاطس فى الحقل. وجد ان هذا المرض ينتشر هذا المرض فى زراعات البطاطس بجميع المحافظات وقد سجلت أعلى إصابة فى العروة الصيفية بالمقارنة بالعروتين النيلية والشتوية فى محافظتى القليوبية والمنيا عن باقى المحافظات الأخرى. تم عزل خمسة عشر عزلة لفطر *Rhizoctonia solani* من سوق ودرنات مصابة طبيعيا. عشرة عزلات منها ثبت أنها تنتمى إلى المجموعة AG-3 التى تهاجم بشدة نباتات البطاطس. بينت الدراسة أن هذه العزلات تنمو على جميع أنواع البيئات المغذية المختبرة وكان أفضل نمو على بيئتي البطاطس والدكستروز وآجار البطاطس. بينت الدراسة أيضا أن الأصناف ليدى-روزيتا، أنوفا وهيرمز "كانوا أكثر الأصناف قابلية للإصابة بالمرض بينما كان الصنفان "أريزونا وأريكا" الأكثر مقاومة للإصابة. وقد نقصت كل من نسبة وشدة المرض عند انبات تقاوى البطاطس قبل زراعتها بواحد وعشرون يوما عن معاملات الأيام السبعة والعشرة. وعندما زرعت البطاطس فى تربة سلتية عن التربة الرملية-طينية أو التربة الطينية. كما قلت نسبة الإصابة بالزراعة على عمق 4 سنتيمترات من سطح التربة بينما كانت أعلى ما يمكن عند الزراعة على عمق 20 سنتيمتر من سطح التربة. أعطيت معاملة الدرنات بالفطر *Trichoderma harzianum* قبل زراعتها إلى خفض الإصابة بتقرح الساق والقشرة السوداء، كما انخفضت شدة الإصابة عند المعاملة بمستخلص أوراق الكافور وكذلك عند المعاملة بالبيد الفطرى ريزولكس عن المعاملة بأى من المبيدين مونسرين أو كبرو-انتراكول.