

***OCCURRENCE OF THE ANASTOMOSIS GROUP-4 OF COTTON -SHIN
CAUSAL ORGANISM PREVAILING IN EGYPT***

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ABSTRACT:

Sore –shin caused by *Rhizoctonia solani* Kuhn is a major disease on cotton plants in Egypt. The causal organism attacks the germinating seeds and seedling plants causing damping-off symptoms and consequently reduces the plant stands under field conditions. Different isolates of the pathogen were obtained from infected samples collected from different locations in Egypt. The research work was started by testing the virulence of 21 isolates of the causal organism which proved their virulence against the common cotton cv. Giza 89. Also, the cultural characters of the tested isolates were studied. Test of compatibility among 14 isolates showed the existence of anastomosis group AG-4, in addition to other four anastomosis groups. The DNA analysis and the obtained dendrogram confirmed the presence of AG-4 and other 4 groups when compared to a standard isolate of AG-4. The obtained results from the DNA analysis and the ISSR test confirmed the presence of AG-4 in addition to other 4 AGs. Accordingly, greenhouse and/or disease nursery tests for resistance to cotton sore-shin should include the dominant AG-4 and the other AG groups to get effective and durable resistance in cotton plants against sore-shin.

Key words: cotton sore – shin, Anastomosis Group, Compatibility, Inter Simple Sequence Repeat.

INTEGRATED CONTROL OF TOMATO ROOT-ROT DISEASE

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ABSTRACT:

Fusarium oxysporum, f.sp. *lycopersici*, *F. solani*, *Rhizoctonia solani* and *Pythium ultimum* were the major soil-borne pathogens isolated from tomato plants showing wilt, damping-off and root-rot diseases. *Trichoderma harzianum*, *Bacillus subtilis*, *B. marinus* and *B. firmus* were isolated from the rhizosphere of healthy tomato plants. These isolates showed, in vitro; good antagonistic effects against the previous four pathogens; where *T. harzianum* overgrew on the pathogenic isolates and inhibition zones were observed between *Bacillus* spp. and different pathogens. Under greenhouse and artificial inoculation conditions; the tested biocontrol agents significantly decreased root-rotted plants and increased survivals. The four tested tomato cultivars i.e., Super Strain B, Castle Rock, Floradade and 448 Al-Qudse were susceptible to all tested pathogens. However, Al-Qudse cultivar was less susceptible than the other cultivars. Barley was the best carrying material for *T. harzianum* while wheat bran favoured for *B. subtilis*. Cultivation of the least susceptible cultivar (Al-Qudse) treated with either *T. harzianum* or *B. subtilis* before planting in artificially infested soil showed successful control integration for tomato root-rot disease.

Key words: Tomato root-rot, Cultivar resistance, Biological control, *Bacillus subtilis*, *Trichoderma harzianum*,