Studies on the enteraction between potato brown rot bacterium and root exudaes in certain crops

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This thesis aimed to study the interaction between potato brown rot bacterium and root exudates of certain crops ,The pathogen R.solanacearum was collected from different sources and governorates in Egypt and revealed no bacteriological differences between the collected isolates by all traditional and modern techniques of identification .Spunta cultivar was the most sensitive cultivar to R.solanacarum infection than Lady rosetta and Nicola cultivars where Spunta root exudates act as chemo attractant signals for pathogen than other cultivars. Soil treatments with abiotic inducers such as salicylic acid, amino butyric acid and calcium oxide with urea able to reduce the pathogenicity of R.solanacearum in to both potato and tomato plants and also reducing the count of bacteria in their roots .Analysis of chemical composition of root exudates of Spunta potato cultivar by GC mass detector clarified that all this abitotic inducers able to cut the chemical signals between potato roots and the test bacterium by changing the composition of potato root exudates ,so the pathogen can not find its way to colonize root system.Both Chinese chive and Sweet basil root exudates also able to reduce population of R.solanacearum in soil due to their high content of antimicrobial compounds that causing an inhibition zone on artificial medium cultured with the pathogen.