

Molecular Characteristics of Ten *Ralstonia solanacearum* Strains of Brown Rot Disease in Potato from three Governorates in Egypt

Using tests based on serological, chemical and pathological aspects *Ralstonia solanacearum* strains (of brown rot disease) were identified in 10 strains were isolated from infected potato tubers grown in Egypt with biovar II pathogenicity and hypersensitivity on leaves of tobacco and sugar utilization. , ISSR markers were used to differentiate the strains .Total number of amplified fragments was 68 bands and polymorphic bands were 38 representing 56% polymorphism. Twenty one bands were monomorphic and 9 were uniquely amplified DNA fragments of DNA which ranged between 7 to 16. The number of polymorphic fragments ranged between 1 to 13 for each primer. Values of genetic similarity among genotypes ranged from 63 to 92%. A dendrogram separated the strains into two major clusters. Pathogenicity tests showed QB.4, BK.5, BK.7 and Gk.8 isolates being highly virulent on tobacco in hypersensitivity test (HR) study. Virulence degree were between low and high on seedlings of tomato and potato and tomato seedlings. *R. solanacearum* (QB.4, QB.5, BK.7 and BK.8) showed highest disease incidence of 25.0, 24.6, 25.3 and 28.5%, respectively. Recorded wilt disease severity were 6.5, 6.2, 6.1 and 7.5 %, respectively at 42 days. Only the four isolates QB.4, QB.5, BK.7 and BK.8 were highly pathogenic to all of the studied seven potato cultivars of Accent, Alpha, Kara, Spunta, Draga, Sntana and Monalisa.