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Abstract

Egypt is among the top four major garlic producing countries in the world. Garlic (*Allium sativum* L.) is infected by numerous viruses, which form a viral complex disease. Garlic-infecting viruses are transmitted by vectors like thrips, aphid, and eriophyid mites which heavily infest garlic in Egypt. In this study, major garlic viruses have been tested in virus-like symptoms samples, collected from three different governorates in Egypt. RT-PCR was performed using generic and specific primers followed by sequencing to evaluate the sanitary status of garlic in Egypt. Out of 120 garlic samples tested (75%) were infected with at least one virus. The newly released local garlic cultivar Sids-40 was marked less infected than cultivar Balady. The presence of Leeks Yellow Strip Virus (LYSV, Potyvirus), Onion Yellow Dwarf Virus (OYDV, Potyvirus), and Iris Yellow Spot Virus, Tospovirus) have been confirmed. The four allexiviruses, GarV-A, GarV-B, GarV-D, and GarV-X were detected for first time in Egypt. Most detected viruses were found in mixed infections and in various combinations. There was no correlation between the association of the virus species and the symptoms, proving that virus-like symptoms are not a reliable indicator of the viral status of garlic planting material. Phylogenetic and sequence analysis data obtained indicated that the Egyptian isolates are genetically diverse and not geographically segregated; although a limited number of samples were examined.

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