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TYLCV characterization and identification on cucumber using ELISA

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Cucumber plants belong to the Cucurbitaceae family which also includes plants like, squash, melon, watermelon, and zucchini. Cucumbers are considered to be one of the most important agricultural crops in Kuwait. They are usually cultivated in February, March, August and September. However, considerable economic losses have been recorded in Kuwait's cucumber crops mainly due to viral diseases. Plant infections caused by viruses are very common in Kuwait, particular in cucumber and other important crops, like tomato. Symptoms of these viral diseases include mosaicking, mottling, yellowing, and curling of leaves, as well as fruit deformation. Viral identification is difficult due to the submicroscopic size of the virus and their presence in low concentrations. The developments of serological techniques such as enzyme-linked immunosorbent Assay (ELISA) have overcome these limitations, making viral identification easier. This aim of this study was to detect viral infections in cucumber leaf samples using ELISA. During field visits, 150 samples of cucumber leaves were collected, and the symptoms resulting from viral diseases were recorded. The samples were tested for the presence of six viruses WMV, ZYMV, CMV, MNSV, PRSV, and SqMV, using double sandwich ELISA kits (DAS- ELISA). The results obtained from ELISA testing indicated that in the collected cucumber samples, all six viruses tested were detected mainly in double or triple infections. This preliminary survey found: (WMV), (ZYMV), (CMV), (MNSV), (PRSV), and (SqMV). Filed survey revealed that cucumber crops were severely infected with viruses. Very high incidences of mixed infections were observed; causing yield losses exceed 80%.

Biography

Hanadi K Al-Hashash has graduated from Faculty of science, Kuwait University. She obtained her Bsc in Microbiology (Major) and Biochemistry (Minor), and then joined KISR since May 2001 till present. Since then, she worked as task leader in several project within Biotechnology Program. She led one General Research acitivity (FB067G). She has an excellent experience in microbial isolation and identification using conventional as well as wel as molecular techniques, DNA, RNA, and protein extraction, using restriction enzymes, and using ELISA.

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