

tested induced potato tuber necrotic ringspot (PTNRS) which is the characteristic phenotype of PVY^{NTN}. Owing to the shared properties of PVY^{SYR} isolates with PVY^{NTN} and PVY^{NW}, they represent a new recombinant strain of the PVY^N strain group with the proposed name PVY^{NTN-NW}. The high prevalence of PVY^{NTN-NW} in potatoes and weeds as well as the ability to induce PTNRS indicated its importance and the need for its control. The continuous emergence of new PVY strains by genomic recombination would alter the control program of PVY and calls for the regular characterization of PVY population.

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EFFECT OF SOME TREATMENTS ON CONTROL OF BEAN YELLOW MOSAIC DISEASE OF FABA BEAN. Nadeem A. Ramadan and Nehil Y. Al-Murad, College of Science, Mosul University, Mosul, Iraq, Email: nadeemramadan@yahoo.com

Spraying mineral oil (Sunoco) and insecticide (Alpha Methrin) separately and in combination and by using corn plants as barriers, reduced the incidence of mosaic symptoms on faba bean plants to 3%. The best treatment was the use of barrier plants planted at north-west direction, which reduced the disease to 3% compared with 4%, 6% and 9% by using mineral oil, insecticide and control treatments, respectively. Using a barrier crop increased the number of pods, seeds, bacterial nodules, stem and roots length compared with other treatments. It also increased wet and dry weight of broad bean plants. Accordingly, the use of barrier crop was considered as the best treatment. Statistical analysis showed significant differences among the three treatments in mineral content of diseased broad bean plants. The natural infection with BYMV reduced the number of shoots to 3, and the length of stem by 35%, the length of root system by 29.2%, reduction in fresh weight of stem and roots by 27.7% and 34%, and dry weight by 43.3% and 37.8%, respectively, and the number of pods by 55%, number of seeds by 77.5% and number of nodules by 75%.

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STUDY OF CUCUMBER MOSAIC VIRUS ON SEVERAL HOSTS IN MIDDLE REGION OF EL-GABAL AL-AKHDAR. Soaad S. Ali, Omar, M. Elsanousi and Fathi S. Al-Mesmari, Faculty of Agriculture, University of Omar Al-Mukhtar, El-Beida, Libya, Email: omarelsanousi1@yahoo.com

This study aimed to survey for *Cucumber mosaic virus* (CMV) in some field crops and wild plants in the middle region of Al-Gabal Al-Akhdar including Al-Hanya, Al-Wasita, El-Beida, Shahat and Susa. CMV was detected singly or in mixed infection on pepper plants in Al-Hanya, Al-Wasita and El-Beida, and on wild tobacco *Nicotiana glauca* in Shahat and Susa, and on squil plants in Shahat, but was not detected in tomato, eggplant, cucumber, wild cucumber, squash, watermelon and local roses. Purified virus was obtained from inoculated wild tobacco leaves, with purified virus yield of 12 mg/100 gr of leaves. The results showed that CMV was immunogenic and the antiserum produced had a titer 1:128. The wild tobacco

CMV isolate induced mosaic on tobacco *Nicotiana glauca*, *N. glutinosa*, *N. tabacum* cvs. Burley 21, White Burley, Turkish and *Xanthi-nc*, and on pepper, squash, pumpkin; necrotic local lesions on *Chenopodium amaranticolor* and broad bean; symptomless infection on cantaloupe and Datura and no infection on cucumber, watermelon, tomato and tobacco *N. rustica* and *N. sylvestrus*.

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FURTHER MOLECULAR CHARACTERIZATION OF CUCURBIT APHID-BORNE YELLOW VIRUS AFFECTING CUCURBITS AND LETTUCE IN TUNISIA. Monia Mnari-Hattab¹, Nathalie Gauthier² and Ali Zouba³.

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Surveys of yellowing viruses under non heated and geothermal heated plastic tunnels as well as in open field crops of melon (*Cucumis melo* L.), cucumber (*C. sativus* L.), zucchini (*Cucurbita pepo* L.), squash (*C. maxima* L.), watermelon (*Citrullus lanatus* (Thunb.) Matsum & Nakai) and ware cucurbit (*Ecballium elaterium* L. T. Richard) were carried out year-round during 2001, 2003, and 2004 in the major cucurbit-growing areas in Tunisia. Severe yellowing symptoms on older leaves of cucurbits were observed in open fields and under plastic-tunnel production systems. These yellowing symptoms and the high aphid populations (*Aphis gossypii* Glover) on diverse cucurbit crops in Tunisia supported the hypothesis of a viral cause of the disease. Virus identification using DAS-ELISA, followed by RT-PCR and IC-RT-PCR showed that *Cucurbit aphid-borne yellows virus* (CABYV) was widely spread in melon, cucumber, zucchini, squash and watermelon crops. Ware cucurbit (*E. elaterium*) and lettuce (*Lactuca sativa* L.) crops were identified as potential CABYV reservoirs. Molecular characterization as well as phylogenetic study of Tunisian isolates of CABYV were conducted. The RT-PCR-amplified partial coat protein (CP) and P4 genes, from nine Tunisian CABYV isolates, were cloned and sequenced. When compared, the obtained sequences seemed to be much conserved; they shared 98.1 to 100% nucleotide identities but less in amino-acid sequence similarity 95.6 to 100% for P4 and 97.2 to 100% for the CP or P3. CP and P4 gene nucleotide and amino-acid sequence comparisons as well as phylogenetic reconstructions showed that the Tunisian isolates clustered into two major sub-groups. Otherwise, the comparison among Tunisian isolates sequences with those retrieved from Gene Bank clearly showed a high nucleotide and coat protein amino-acid identities, and close relationships with the Italian and French isolates and constitute one sustained group with a bootstrap of 77%.

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