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Disease Notes

First Report of *Onion yellow dwarf virus* and *Leek yellow stripe virus* in Garlic in Turkey

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Abstract

Garlic (*Allium sativum* L.) is one of the most important *Allium* spp. plants that are widely cultivated throughout the world. A significant reduction in yield and quality due to virus infection is now a serious economic problem (1). In many cases, garlic plants are infected with a variety of viruses, but elimination of these viruses is difficult because this crop is propagated through bulbs. Potyviruses, carlaviruses, and allexiviruses have been detected in diseased garlic. *Onion yellow dwarf virus* (OYDV) and *Leek Yellow Stripe Virus* (LYSV), genus *Potyvirus*, family *Potyviridae*, are two important viral pathogens of garlic. Virus diseases of garlic are widespread in the world, causing serious damage to yields and quality of the crop. The East Mediterranean Region produces 14% of the garlic production of Turkey (110,000 t). A survey was done in garlic fields in Adana, Mersin, Kahramanmaras, Hatay, and Gaziantep provinces of Turkey where virus-like symptoms were noted in samples collected during the 2007–2008 growing season. Leaf and bulb samples were taken from 202 plants with leaf yellow stripe, mosaic, enations, and deformation or dwarfism symptoms. ELISA was performed with antibodies from Agdia (Elkhart, IN). Results indicated that 57 samples (28.2%) were infected with OYDV and 43 samples (21.2%) were infected with LYSV. In addition, 23 samples were determined to be

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analyzed by reverse transcription-PCR with primers 1OYDV-G (5′ TTA CAT TCT AAT ACC AAG CA 3′) and 2OYDV-G (5′ GCA GGA GAT GGG GAG GAC GC 3′) for the detection of OYDV and primers 1LYSV (5′ TCA CTG CAT ATG CGC ACC AT 3′) and 2LYSV (5′ GCA CCA TAC AGT GAA TTG AG 3′) for the detection of LYSV. These primers were previously reported to be specific for the coat protein genes of OYDV and LYSV, respectively (2). Products of the expected size (774 bp for OYDV and 1,020 bp for LYSV) were amplified only from the ELISA-positive samples of the respective viruses, confirming infections by OYDV and LYSV. To our knowledge, this is the first report of OYDV and LYSV in garlic in Turkey.

References: (1) L. Bos et al. Neth. J. Plant Pathol. 84:185, 1978. (2) T. V. M. Fajardo et al. Fitopatol. Bras. 26:619, 2001.

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