Back

First Report of *Iris yellow spot virus* on Onion (*Allium cepa*) in Texas. M. E. Miller and R. R. Saldana, Texas A&M University, Weslaco 78596; M. C. Black, Texas A&M University, Uvalde 78801; and H. R. Pappu, Washington State University, Pullman 99164-6430. Plant Dis. 90:1359, 2006; published on-line as DOI: 10.1094/PD-90-1359B. Accepted for publication 12 July 2006.

Iris yellow spot virus (IYSV; family *Bunyaviridae*, genus *Tospovirus*) has emerged as a potentially devastating and widespread virus of onion. IYSV was first reported in the United States from Idaho in 1993 and has since spread to many of the onion-producing areas (1). In South America, the most recent reports of the virus on onion were from Peru and Chile (2,4). In 2005, onion plants in Uvalde County, Texas exhibited necrotic lesions on leaves typical of IYSV and disease incidence approached 100% in some fields with yield loss and quality problems. Five of six plants tested were positive for IYSV with double antibody sandwich-enzyme linked immunosorbent assay (DAS-ELISA; Agdia Inc., Elkhart, IN). In 2006, similar lesions were observed on onion plants in Uvalde County and approximately 400 km south in Hidalgo and Cameron counties. Infection points generally started as a single plant near the edge of fields and spread to plants in a 3- to 4-m area after 1 to 2 weeks. Early-season disease incidence was low in onions grown for bulbs and transplants, <10% in 2006. Disease incidence increased in some fields until the crop was harvested. Leaves of symptomatic plants were tested for IYSV and *Tomato spotted wilt virus* (TSWV) using DAS-ELISA, and 18 of 23 samples from the Hidalgo County area and 12 of 21 samples from the Uvalde County area were positive for IYSV. All samples tested for TSWV from these counties were negative. Virus infection in some ELISA-positive plants was verified by reverse transcription-polymerase chain reaction (RT-PCR) using primers derived from the small RNA of IYSV. The primers flanked the IYSV nucleocapsid (N) gene (5(prime)-TAA AAC AAA CAT TCA AAC AA-3(prime) and 5(prime)-CTC TTA AAC ACA TTT AAC AAG CAC-3(prime) (3). RT-PCR gave a PCR product of expected size (approximately 1.2 kb). The DNA amplicon was cloned and sequenced (GenBank Accession No. DQ658242). Nucleotide sequence analysis confirmed the identity of the amplicon as that of IYSV N gene and sequence comparisons with known IYSV N gene sequences showed 95 to 98% sequence identity. The primary vector of IYSV, onion thrips (*Thrips tabaci*), is a widespread and destructive pest of onion in south Texas. The year-to-year incidence of IYSV and the severity of the disease will probably depend on the onion thrips population levels. Bulb yield reduction could be severe during years with high thrips populations. More research is needed to determine the impact of IYSV on bulb yield in Texas, the relationship between IYSV

incidence and *T. tabaci* population levels, and oversummering hosts. To our knowledge, this is the first known report of IYSV in Texas.

References: (1) D. H. Gent et al. Plant Dis. 88:446, 2004, (2) S. W. Mullis et al. Plant Dis. 90:377, 2006, (3) H. Pappu et al. Arch. Virol. 151:1015, 2006. (4) M. Rosales et al. Plant Dis. 89:1245, 2005.