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Iris Yellow Spot Virus in Onion Bulb and Seed Crops in Washington. L. J. du Toit, Washington State University-Mount Vernon Research and Extension Unit, Mount Vernon 98273; H. R. Pappu and K. L. Druffel, Department of Plant Pathology, Washington State University, Pullman 99164; and G. Q. Pelter, Grant/Adams Counties, Washington State University Cooperative Extension, Ephrata 98823. Plant Dis. 88:222, 2004; published on-line as D-2003-1201-03N, 2004. Accepted for publication 30 October 2003.

The geographic distribution of Iris yellow spot virus (IYSV, Genus *Tospovirus*, Family *Bunyaviridae*) in onion (*Allium cepa* L.) crops in the western United States has increased with the most recent report in Colorado (1,4). Furthermore, the incidence of IYSV has increased significantly in onion crops in the Treasure Valley of southern Idaho and eastern Oregon, where the disease was first detected in the United States (1,2). Surveys of onion seed crops in Washington during the past 2 years showed the presence of plants with symptoms characteristic of IYSV infection, including distinct diamond-shaped chlorotic or necrotic lesions, as well as indistinct circular to irregular, chlorotic or necrotic lesions of various sizes on the scapes of flowering plants. To date, symptomatic plants have been observed in five seed crops in Washington, at incidences ranging from <1% to approximately 20% in individual seed crops. Enzyme-linked immunosorbent assays carried out directly on symptomatic onion samples collected in July 2002, and on *Nicotiana benthamiana* plants mechanically inoculated with sap from these symptomatic plants, did not detect the presence of IYSV. In late July 2003, symptomatic plants were collected from an onion seed crop in Grant County and tested for IYSV infection by reverse transcription-polymerase chain reaction (RT-PCR). Total nucleic acid was extracted from symptomatic areas of the scapes with the procedure described by Presting et al. (3). Primers specific to the nucleocapsid (*NP*) gene of IYSV were designed based on sequences in GenBank: 5(prime)-TCA GAA ATC GAG AAA CTT-3(prime) and 5(prime)-TAA TTA TAT CTA TCT TTC TTG G-3(prime) (sense and antisense polarity, respectively). The RT-PCR assay produced an amplicon of the expected size (approximately 700 bp) that was cloned and sequenced. Comparison with the GenBank IYSV gene sequences showed 98% sequence identity of the *NP* gene. In August 2003, symptoms of IYSV infection were observed in two onion bulb crops, each located within 2 miles of the symptomatic onion seed crop in Grant County. The presence of IYSV in these crops was confirmed by RT-PCR with cloning and sequencing of the amplicon, as described for the seed crop samples. To our knowledge, this is the first confirmation of IYSV in onion bulb and seed crops in Washington, where 16,000 to 18,000 acres of onion bulb crops and 700 to

900 acres of onion seed crops are grown annually (USDA National Agricultural Statistics Service). The increase in prevalence of IYSV in the Pacific Northwest highlights the need for additional research to clarify the epidemiology of this potentially significant pathogen and to develop a regional management program for iris yellow spot.

References: (1) J. M. Hall et al. Plant Dis. 77:952, 1993. (2) J. W. Moyer et al. (Abstr.) Phytopathology 93(suppl.):S115, 2003. (3) G. G. Presting et al. Phytopathology 85:436, 1995. (4) H. F. Schwartz et al. Plant Dis. 86:560, 2002.