DISEASE NOTE

FIRST REPORT OF CROWN ROT CAUSED BY RHIZOCTONIA SOLANI AG-4 HG-I ON ASPARAGUS OFFICINALIS IN TURKEY

G. Özer1 and H. Bayraktar2

1Abant Izzet Baysal University, Bolu 14280, Turkey
2Ankara University, Faculty of Agriculture, Department of Plant Protection, Ankara 06110, Turkey

In 2011, crown rot symptoms were observed on the base, root and spears of asparagus plants in Balıkesir province (north-eastern Turkey). Surface-disinfected tissues were placed on potato dextrose agar medium and incubated at 22±1°C. Rhizoctonia cultures were obtained and identified based on vegetative hyphae, nuclear staining, and anastomosis typing with known tester isolates of Rhizoctonia solani (Sneh et al., 1991). Positive anastomosis was observed with tester strain of AG-4. To confirm identity of the causal fungus, the complete ITS rDNA of a representative fungal isolate was amplified using primers ITS1 and ITS4 (White et al., 1990), and sequenced. The resulting sequence (GenBank accession No. JX437939) was compared with other sequences from database showing 97% identity with ITS sequences of strain AG-4 HG-I. To meet Koch’s postulates, inoculum was prepared by growing the fungus on sterilized wheat kernels and its pathogenicity was tested on 45-day-old asparagus seedlings inoculated by placing two colonized wheat kernels in contact with the base of each plant. After six weeks, plants were removed and assessed for disease symptoms. The fungus caused damping off of seedlings, brown-red lesions on roots and spears, and was consistently re-isolated from infected tissues. This pathogen was reported previously on asparagus seedlings in Japan (Sakaguchi et al., 1990). To our knowledge, this is the first report of crown rot on asparagus caused by Rhizoctonia solani AG-4 HG-I in Turkey.


A. Mangli1, S. Zicca2, A. Tiberini2, G. Albanese1

1Dipartimento di Gestione dei Sistemi Agrari e Forestali, Università degli Studi Mediterranea di Reggio Calabria, Località Feo di Vito, 89122 Reggio Calabria, Italy
2CRA - Centro di Ricerca per la Patologia Vegetale, Via C. G. Bertero 22, 00136 Roma, Italy

The red onion (Allium cepa) cv. Cipolla rossa di Tropea, is a crop of utmost relevance in Calabria (southern Italy) as it constitutes the fourth most important agricultural product of Italy endowed with a certified protected geographical indication. In May 2012, symptoms resembling those of Iris yellow spot virus (IYSV), consisting of diamond-shaped lesions on the scapes accompanied by chlorotic or necrotic spots on the leaves, were observed in several commercial plots. Symptomatic plants were collected from bulb and seed crops and tested for the presence of IYSV, a virus recorded from northern Italy since 2008 (Tomassoli et al., 2009). Total RNA was extracted from scapes and leaves and tested by single-step RT-PCR using primers specific to the viral nucleocapsid (N) gene (Tomassoli et al., 2009). Five of 14 tested samples were IYSV-positive, two from fresh market bulb and three from seed crops. Amplicons (ca. 600 bp) were purified, sequenced and three of the sequences were deposited in GenBank (accession Nos. JX310661, JX310662, JX310663). IYSV isolates from Calabria showed 98.5 to 100% identity at the amino acid level with the N gene sequences of the isolates previously identified in Italy (F185142), Serbia and Brazil (EU750697 and AF067070). Real time RT-PCR assays disclosed a higher number of infected samples, confirming the highly sensitive and rapid detection of IYSV in onion afforded by this technique (Tiberini et al., 2011). To our knowledge, this is the first report of IYSV in Calabria. It confirms spreading of the virus within Italy and calls for surveillance for reducing the impact of IYSV infections on onion crops and other allium species.

S. Zicca

Corresponding author: H. Bayraktar
Fax: +90.312.3187029
E-mail: bayraktar@agri.ankara.edu.tr

Received July 16, 2012
Accepted September 27, 2012

Corresponding author: S. Zicca
Fax: +39.6.82070246
E-mail: stefaniazicca@libero.it

Received July 24, 2012
Accepted August 7, 2012