DISEASE NOTE

FIRST REPORT OF *FUSARIUM PROLIFERATUM* CAUSING CROWN AND ROOT ROT OF *ASPARAGUS OFFICINALIS* IN TURKEY

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In 2011, crown and root rot symptoms appeared on 3- to 8-month-old asparagus plantations in different production areas located in the Gönen district of the Balıkesir province (Turkey). The symptoms included a decrease in the yield of spears and brown lesions, vascular discoloration and rot of roots, rhizomes, and stems. The disease emerged on new plantings which were established with propagation materials from infected fields. Disinfected root pieces were placed on potato dextrose agar medium and incubated at 23±1°C. Fusarium-like colonies were obtained and identified based on cultural and morphological characteristics (Leslie and Summerell, 2006). Microconidia, borne in long and short chains and false heads, were abundant, single-celled, oval, and ranged from 3.1 to 3.7×5.6 to 8.1 µm. Macroconidia were 3-5 septate, slightly curved, and ranged from 3.7 to 5.0×33.7 to 40.0 µm. The identification of the causal fungus as *F. proliferatum* first based on morphological data, was confirmed by species-specific PCR assays using the primer set CLPRO1/2 which amplified the expected 526-bp DNA fragment (Mulè *et al.*, 2004). To fulfill Koch's postulates, pathogenicity tests were performed using a pot culture inoculation method. Sand-corn meal mixture was inoculated with plugs from *F. proliferatum*, incubated at 23±1°C for 10 days, then mixed with 1 kg autoclaved soil. Healthy 45-day-old asparagus seedlings were transplanted into inoculated pots and grown for 45 days at 23±1°C with 14 h photoperiod. Infected plants showed typical brown lesions in the root system, from which *F. proliferatum* was reisolated. This is the first report of *F. proliferatum* causing crown and root rot on asparagus in Turkey.

Leslie J.F., Summerell B.A., 2006. The Fusarium Laboratory Manual. Blackwell, Ames, IA, USA.

Mulè G., Susca A., Stea G., Moretti A., 2004. Specific detection of the toxigenic species *F. proliferatum* and *F. oxysporum* from asparagus plants using primers based on calmodulin gene sequences. *FEMS Microbiology Letters* **230**: 235-240.

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FIRST DETECTION OF GRAPEVINE LEAFROLL-ASSOCIATED VIRUS 9 IN ITALY

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The virome of a pool of nine plants from the same vineyard of cv. Panse precoce from Apulia (southeast Italy), which showed strong symptoms of enation disease, was investigated by deep sequencing of a library of double-stranded RNAs extracted from the phloem of symptomatic vines. A total of 2,040 contigs were obtained by *de novo* assembly of sequenced reads. These were analysed by BLAST homology towards the database of virus sequences of the National Center for Biotechnology Information (www.ncbi.nlm.nih.gov). Results of this homology search showed that the sanitary status of the vines was much degraded, since multiple infections by different ampeloviruses, vitiviruses and nepoviruses were found in the plant pool. Among the detected virus sequences some were homologous to those of the ampelovirus Grapevine leafroll-associated virus 9 (GLRaV-9) (Alkowhni *et al.,* 2004). GLRaV-9 contigs (3,462 nucleotides) spanned the entire 12,588 nt viral sequence available from GenBank (accession No. AY297819). The presence of this virus was also confirmed by RT-PCR performed under the conditions and using the primers described by Osman *et al.* (2007), which amplified the expected 393 bp fragment in five of the nine tested plants. To the best of our knowledge this is the first record of GLRaV-9 from Italy.

Alkowni R., Rowhani A., Daubert S., Golino D., 2004. Partial characterization of a new ampelovirus associated with Grapevine leafroll disease. *Journal of Plant Pathology* **86**: 123-133.

Osman F., Leutenegger C., Golino D., Rowhani A., 2007. Real-time RT-PCR (TaqMan) assays for the detection of Grapevine leafroll-associated viruses 1-5 and 9. *Journal of Virological Methods* **141**: 22-29.

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