

DISEASE NOTE

SEED TRANSMISSION OF *ARTICHOKE ITALIAN LATENT VIRUS* AND *ARTICHOKE LATENT VIRUS* IN GLOBE ARTICHOKE

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Globe artichoke, a vegetatively propagated plurianual species, is susceptible to quite an array of viruses which accumulate in the crop over time (Rana *et al.*, 2002). Recently developed seed-propagated artichoke cultivars would help decreasing viral contamination, provided that no transmission of viruses occurs through seeds. This was investigated in Apulia (southern Italy) in artichoke cv. 'Brindisino'. Seeds collected from plants naturally infected by the nepovirus *Artichoke Italian latent virus* (AILV) and the potyvirus *Artichoke latent virus* (ArLV), were kept at 4°C for one month prior to sowing in sterile soil. Seed coats, cotyledons and the first true leaf (5-6 cm in length) were separately extracted in 6 vol. (w/v) of 50 mM NaOH containing 2.5 mM EDTA, spotted onto N⁺ nylon membranes in 5 µl aliquots, and hybridised with DIG-labelled riboprobes specific to either viruses. AILV and ALV were detected in the seed coat and fully expanded cotyledons and AILV also in true leaves. Infection of seedlings was in the range of 5-10% for both viruses. Work is in progress for a better assessment of seed-transmission rate in a wider range of varieties.

Rana G.L., Gallitelli D., Vovlas C., Martelli G.P., 2002. Viruses of artichoke: an overview. *Acta Horticulture* (in press).

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SEED TRANSMISSION IN OLIVE OF TWO OLIVE-INFECTING VIRUSES

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The very high rate of virus contamination (25 to 80%) of commercial olive orchards in the Mediterranean (Martelli, 1999), made us wondering whether other ways of virus spread operate in nature besides dissemination through infected scion material. Attention was therefore paid to olive seedlings, which are still widely used as rootstocks. In autumn 1999, about 1000 drupes were collected from each of two olive trees of 'Oliva rossa', a local cultivar from Apulia (southern Italy), known to be infected respectively, by the necrovirus *Olive latent virus 1* (OLV-1) and the nepovirus *Cherry leafroll virus* (CLRV). Seeds were recovered and used in part for direct testing of their components (integuments, cotyledons, endosperm and embryos) and in part for sowing and successive testing of seedlings. Total RNA was extracted from seeds and seedlings and used as template for RT-PCR or molecular hybridization with virus-specific primers and DIG-labelled riboprobes (Grieco *et al.*, 2000). OLV-1 was detected in the integuments and internal tissues of 41 of 50 (82%) seeds, and CLRV in 45 of 50 (90%) seeds. The rate of seedling infection was 35% for OLV-1 and 41% for CLRV. This is the first report of virus transmission through olive seeds.

Grieco F., Alkowni R., Saponari M., Savino V., Martelli G.P., 2000. Molecular detections of olive viruses. *Bulletin OEPP/EPPO Bulletin* 30: 469-473.

Martelli G.P., 1999. Infectious diseases and certification of olive: an overview. *Bulletin OEPP/EPPO Bulletin* 29: 127-133.

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FIRST REPORT OF *PEACH LATENT MOSAIC VIROID* IN SWEET CHERRY IN ITALYA. Crescenzi¹, P. Piazzolla¹ and A. Hadidi²¹ Dipartimento di Biologia, Difesa e Biotecnologie Agro-Forestali – Università degli Studi della Basilicata – C.da Macchia Romana, I-85100 Potenza, Italy² Fruit Laboratory – Agricultural Research Service – United States Department of Agriculture, Beltsville, MD 20705 USA

Sweet cherry (*Prunus avium*) has recently been reported as a natural symptomless host of *Peach latent mosaic viroid* (PLMVd) from Canada and Japan (Hadidi *et al.*, 1997; Osaki *et al.*, 1999). During a survey on the sanitary status of sweet cherry trees in southern Italy the possible presence of PLMVd infections was investigated. Bud wood and leaf samples were collected in commercial orchards from few sweet cherry cultivars. Bud wood was grafted onto GF 305 seedlings for recovering PLMVd, if present, and amplifying it in this host. Graft-inoculated indicator plants remained symptomless for several months. Total nucleic acids were extracted from 250 mg of leaf tissue of each cherry or GF 305 plants, were denatured with formaldehyde, and hybridized in dot-blot assays with a digoxigenin-labelled full-length PLMVd cRNA probe (Hadidi *et al.*, 1997). Hybridization tests showed that PLMVd was successfully transmitted by grafting to GF 305 seedlings, and 5 of 15 sweet cherry trees were naturally infected with the viroid.

Hadidi A., Giunchedi L., Shamloul A.M., Poggi-Pollini C., Amer M.A., 1997. Occurrence of peach latent mosaic viroid in stone fruits and its transmission with contaminated blades. *Plant Disease* **81**: 154-158.

Osaki H., Yamaguchi Y., Sato Y., Tomita Y., Kawai Y., Miyamoto Y., Ohtsu Y., 1999. Peach latent mosaic viroid isolated from stone fruits in Japan. *Annals of the Phytopathological Society of Japan* **65**: 3-8.

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DISEASE NOTE

OUTBREAKS OF *PSEUDOMONAS CICHORII* ON PRIMULA HYBRIDS IN ITALYM. Scortichini^{1*}, C. Morone² and M.P. Rossi¹¹ Istituto Sperimentale per la Frutticoltura, Via di Fioranello 52, I-00040 Ciampino Aeroporto, Roma, Italy,

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Pot-grown plants of *Primula acaulis* Jacq. x *P. officinalis* Jacq. hybrids 'Corona mix', 'Dobra mix', 'Gessi mix', 'Ulrike pastello', 'Miranda-pastell mix', 'Tiara mix' and 'Danova F1' with leaf necrotic lesions were observed in spring 2000 and 2001 in commercial greenhouses in Piedmont (North-West of Italy) and Latium (central Italy). The lesions were present especially along the margin of the leaves, and sometimes, had a chlorotic halo (Young *et al.*, 1987). In many cases, the leaves, especially those at collar level, were completely withered. Disease incidence ranged from 5 to 25%. Leaf tissue taken from the margin of the lesions was crushed in mortars containing sterile physiological saline. From the suspensions, 0.1 ml aliquots of the serial ten-fold dilutions were spread on medium B of King *et al.* (KB) and incubated at 25-27°C for 2 days. The resulting fluorescent colonies were used in biochemical and pathogenicity tests as well as for comparison by SDS-PAGE of whole-cell protein extracts. All the isolates were negative in levan production, potato soft-rot, presence of arginine dehydrolase and positive in presence of oxidase and in tobacco hypersensitivity reaction (LOPAT tests; group III). They showed the same protein profile as *Pseudomonas cichorii* (Swingle) Stapp NCPPB 943 (type-strain) and NCPPB 2380. When inoculated at 1-3 x 10⁶ cfu ml⁻¹ by spraying the leaves of *P. acaulis* x *P. officinalis* 'Danova F1', they reproduced the symptoms originally observed within 20-25 days. We conclude that the causative agent of the disease was *P. cichorii* (Swingle) Stapp. To our knowledge, this is the first record of this disease in primula hybrids in Italy.

Young J.M., Watson D.R.W., Fletcher M.J., Kemp W.S., 1987. Isolation of *Pseudomonas cichorii* from plants in New Zealand. *New Zealand Journal of Agricultural Research* **30**: 511-516.

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