

Table of Contents

Preface	3
In Memoriam Dr. Luigi Carraro	5
In Memoriam Prof. Dragoljub D. Sutic	6
Association of <i>Tobacco ringspot virus</i>, <i>Tomato ringspot virus</i> and <i>Xiphinema americanum</i> with a decline of highbush blueberry in New York	15
Fuchs, M.	
A new member of the family <i>Reoviridae</i> may contribute to severe crumbly fruit in red raspberry, <i>Rubus idaeus</i> ‘Meeker’	18
Quito, D.; Jelkmann, W.; Alt, S.; Leible, S.; Martin, R.R.	
The biology of <i>Cixius wagneri</i>, the planthopper vector of ‘Candidatus <i>Phlomobacter fragariae</i>’ in strawberry production tunnels and its consequence for the epidemiology of strawberry marginal chlorosis	24
Salar, P.; Danet, J.-L.; Pommier, J.-J.; Foissac, X.	
The seasonal detection of strawberry viruses in Victoria, Australia	27
Constable, F.E.; Bottcher, C.; Kelly, G.; Nancarrow, N.; Milinkovic, M.; Persley, D.M.; Rodoni, B.C.	
Detection of phloem restricted bacteria responsible for strawberry marginal chlorosis (SMC) by real-time PCR in a single assay	35
Danet, J.-L.; Fimbeau, S.; Pommier, J.-J.; Couture, C.; Foissac, X.	
Sequencing studies for the identification and characterization of new and old <i>Rubus</i> viruses	39
MacFarlane, S.A.; McGavin, W.J.	
Emerging strawberry virus and virus-like diseases in the world	41
Tzanetakis, I.E.	
Introduction of certification program in production of plum planting material	44
Jevremović, D.; Paunović, S.	
Confirmation of the elimination of <i>Apple stem grooving virus</i> from apple trees by <i>in vitro</i> chemotherapy	47
James, D.	
Detection of olive tree viruses in Egypt by one-step RT-PCR	51
Youssef, S.A.; Moawed, S.M.; El-Sayed, M.; Shalaby, A.A.	
Validation of a microarrays protocol for detection and genotyping isolates	56
Pasquini, G.; Faggioli, F.; Luigi, M.; Gentili, A.; Hadidi, A.; Canini, I.; Gabriele, L.; Czosnek, H.; Tiberini, A.; Çağlayan, K.; Mazyad, H.; Anfoka, G.; Barba, M.	
Real-time RT-PCR quantitative analysis of plant viruses in stone fruit tissues	61
Jarošová J., Gadiou S., Kumar J.K.	
Improvement of the reverse transcription loop mediated isothermal amplification (RT-LAMP) method for the detection of <i>Peach latent mosaic viroid</i> (PLMVD)	65
Boubourakas, I.N.; Fucuta, S.; Luigi, M.; Faggioli, F.; Barba, M.; Kyriakopoulou, P.E.	

Application of scanning electron microscopy for diagnosing phytoplasmas in single and mixed (virus-phytoplasma) infection in Papaya	70
Lebsky, V.; Poghosyan, A.; Silva-Rosales, L.	
New viruses found in fig exhibiting mosaic symptoms	79
Tzanetakis, I.E.; Laney, A.G.; Keller, K.E.; Martin, R.R.	
Worldwide diffusion of Fig latent virus 1 in fig accessions and its detection by serological and molecular tools	83
Gattoni, G.; Minafra, A.; Castellano, M.A.; De Stradis, A.; Boschia, D.; Elbeaino, T.; Digiaro, M.; Martelli, G.P.	
Molecular characterisation of viruses from Kiwifruit	87
Pearson, M.N.; Cohen, D.; Chavan, R.; Bloutin, A.G.; Cowell, S.J.	
Towards dissecting the structural determinant of Peach latent mosaic viroid inducing mosaic symptoms	92
Delgado, S.; Navarro, B.; Minoia, S.; Gentit, P.; Di Serio, F.; Flores, R.	
Variability assessment and construction of infectious clone of Indian Apple Scar Skin Viroid	96
Walia, Y.; Kumar, Y.; Rana, T.; Ram, R.; Hallan, V.; Zaidi, A.A.	
The molecular characterization of HSVd isolates associated with dapple fruit and fruit rugosity in plum seedlings suggests a possible role of breeding in viroid dissemination	101
Luigi, M.; Fagioli, F.; Barba, M.; Giunchedi, L.	
Two novel variants of hop stunt viroid associated with yellow corky vein disease of sweet orange and split bark disorder of sweet lime	105
Bagherian, S.A.A.; Izadpanah, K.	
Expression of the coat protein genes of PNRSV and PDV in the synergistic disease peach stunt	114
Kim, B.T.; Gibson, P.G.; Scott, S.W.	
Investigation of virus occurrence in different tissues throughout the year and sequence variability of Apple stem pitting virus	118
Arntjen, A.; Jelkmann, W.	
Close similarities between Cherry chlorotic rusty spot disease from Italy and Cherry leaf scorch from Spain.	122
Barone, M.; Covelli, L.; Di Serio, F.; Carrieri, R.; Garcia Becedas, M.T.; Ragozzino A.; Alioto, D.	
Widespread occurrence of Tomato ring spot virus in deciduous fruit trees in Iran	127
Moini, A.A.; Roumi, V.; Masoumi, M.; Izadpanah, K.	
Occurrence of small fruit viruses in Belarus	129
Valasevich, N.; Kolbanova, E.	
Pathogen-derived methods for improving resistance of transgenic plums (<i>Prunus domestica</i> L.) for Plum pox virus infection	133
Dolgov, S.; Mikhaylov, R.; Serova, T.; Shulga, O.; Firsov, A.	
Hairpin Plum pox virus coat protein (hpPPV-CP) structure in ‘HoneySweet’ C5 plum provides PPV resistance when genetically engineered into plum (<i>Prunus domestica</i>) seedlings	141
Scorza, R.; Georgi, L.; Callahan, A.; Petri, C.; Hily, J.-M.; Dardick, C.; Damsteegt, V.; Ravelonandro, M.	

The hypersensitivity resistance of european plum to the Plum pox virus and its potential impact on the epidemiology of the virus	147
Neumüller, M.; Hartmann, W.; Petruschke, M.; Treutter, D.	
Natural deletion is not unique in the coat protein (CP) of recombinant <i>Plum pox virus</i> (PPV) isolates in Hungary	151
Szathmáry, E.; Palkovics, L.	
Tracking <i>Plum pox virus</i> in Chile throughout the year by three different methods and molecular characterization of Chilean isolates	156
Fiore, N.; Araya, C.; Zamorano, A.; González, F.; Mora, R.; Sánchez-Navarro, J.; Pallás, V.; Rosales, I.M.	
Identification of host genes potentially implicated in the <i>Malus pumila</i> and ‘Candidatus <i>Phytoplasma mali</i>’ interactions	162
Aldaghi, M.; Massart, S.; Bertaccini, A.; Lepoivre, P.	
In vitro screening of interspecific hybrids (<i>Malus</i> spp.) for resistance to apple proliferation	167
Bisognin, C.; Ciccotti, A.M.; Salvadori, A.; Jarausch, W.; Grando, M.S.	
Experimental transmission trials by <i>Cacopsylla pyri</i>, collected from pear decline infected orchards in Turkey	171
Çağlayan, K., Gazel, M., Ulubaş Serçe, Ç., Can, F.	
Analysis of the acquisition and multiplication efficiency of different strains of Ca. <i>Phytoplasma mali</i> by the vector <i>Cacopsylla picta</i>	175
Jarausch, B.; Fuchs, A.; König, D.; Krczal, G.; Jarausch, W.	
Molecular characterization of ‘Candidatus <i>Phytoplasma mali</i>’ strains in outbreaks of apple proliferation in north eastern Italy, Hungary, and Serbia	178
Paltrinieri, S.; Duduk, B.; Dal Molin, F.; Mori, N.; Comerlati, G.; Bertaccini, A.	
Breeding of rootstocks resistant to apple proliferation disease	183
Seemüller, E.; Bisognin, C.; Grando, M.S.; Schneider, B.; Velasco, R.; Jarausch, W.	
Influence of Apple stem grooving virus on <i>Malus sieboldii</i>-derived apple proliferation resistant rootstocks	186
Liebenberg, A.; Wetzel, T.; Kappis, A.; Herdemertens M.; Krczal, G.; Jarausch, W.	
Infection rates of natural psyllid populations with ‘Candidatus <i>Phytoplasma mali</i>’ in South Tyrol (Northern Italy)	189
Baric, S.; Öttl, S.; Dalla Via, J.	
Comparison of European stone fruit yellows phytoplasma strains differing in virulence by multi-gene sequence analyses	193
Marcone, C.; Schneider, B.; Seemüller, E.	
Hypo- and hyper-virulence in apricot trees infected by European stone fruit yellows	197
Ermacora, P.; Loi, N.; Ferrini, F.; Loschi, A.; Martini, M.; Osler, R.; Carraro, L.	
<i>Tomato ringspot nepovirus</i> (ToRSV) in wild blackberry (<i>Rubus fruticosus</i> L.) in Hatay province of Turkey	201
Sertkaya, G.	
Detection of <i>Blueberry red ringspot virus</i> in highbush blueberry cv. ‘Coville’ in Slovenia	204
Mavrič Pleško, I., Viršček Marn, M., Koron, D.	
Comparison of <i>Raspberry bushy dwarf virus</i> isolates from Hungary and Slovenia	206
Viršček Marn, M., Mavrič Pleško, I., Goršek, J., Nyerges, K., Lázár, J., Tökés, Á.	

Occurrence of small fruit viruses in Belarus	210
Valasevich, N., Kolbanova, E.	
Characterisation of mixed virus infections in <i>Ribes</i> species in Switzerland	214
Besse, S., Gugerli, P., Ramel, M.-E., Balmelli, C.	
Transient expression of the coat protein of <i>Apple chlorotic leaf spot virus</i> inhibits the viral RNA accumulation in <i>Nicotiana occidentalis</i>	220
Yaegashi, H., Yoshikawa, N.	
Highly efficient inoculation method of apple viruses to apple seedlings	226
Yamagishi, N., Sasaki, S., Yoshikawa, N.	
Nucleotide analysis of pome fruit virus isolates detected in apple and pear samples	230
Ferretti, L., Hallan, V., Rana, T., Ram, R., Dhir, S., Negi, A., Lakshmi, V., Thockchom, T., Zaidi, A.A., Barba, M.	
Detection of Pear Vein Yellows Disease caused by <i>Apple stem pitting virus</i> (ASPV) in Hatay province of Turkey	237
Sertkaya, G.	
Determination of the effects of <i>Apple stem grooving virus</i> on some commercial apple cultivars	240
Birişik, N., Baloglu, S.	
Pome fruit viruses in Bosnia and Herzegovina	245
Lolić, B., Matić, S., Đurić, G., Hassan, M., Di Serio, F., Myrta, A.	
Detection and identification of <i>Apple stem pitting virus</i> and <i>Apple stem grooving virus</i> affecting apple and pear trees in Egypt	248
Youssef, S.A., Moawad, S.M., Nosseir, F.M., Shalaby, A.A.	
The first survey of pome fruit viruses in Morocco	253
Afechtal, M., Djelouah, K., D'Onghia, A.M.	
Evaluation of the presence and symptomology of viruses in commercial quince orchards in Turkey	257
Birişik, N., Baloglu, S.	
The occurrence of <i>Ilarviruses</i> in Latvian fruit orchards	263
Pūpola, N., Kāle, A., Jundzis, M., Moročko-Bičevska, I.	
Occurrence of <i>Little cherry virus-1</i> on <i>Prunus</i> species in the State of Baden-Württemberg, Germany	268
Schröder, M., Petruschke, M.	
Transmission of <i>Little cherry virus -1</i> (LChV-1) by <i>Cuscuta europaea</i> to herbaceous host plants	272
Jelkmann, W., Hergenhahn, F., Berwarth, C.	
First occurrence of <i>Cherry virus a</i> (cva) in the Czech Republic	275
Grimová, L., Zouhar, M., Ryšánek, P., Drabešová, J., Mazáková, J., Paprštein, F.	
Occurrence of <i>Prunus necrotic ringspot virus</i> and <i>Prune dwarf virus</i> in wild cherries in the locality velehrad (South Moravia, Czech Republic)	278
Navrátil, M., Šafářová, D.	
Identification of Ilarviruses in almond and cherry fruit trees using nested PCR assays	281
Maliogka, V.I., Charou, A., Efthimiou, K., Katsiani, A.T., Chatzivassiliou, E.K., Katis, N.I.	
Effects associated with graft-transmissible agents found in the peach variety 'Ta Tao 5'	284
Gibson, P., Reighard, G., Marini, D., Scott, S.	

Assessment of the main stone fruit viruses and viroids in Algeria	289
Meziani, S., Rouag, N., Milano, R., Kheddam, M., Djelouah, K.	
Surveying viruses on ornamental trees and shrubs in two Hungarian botanical gardens and an arboretum	293
Németh, M., Nyerges, K., Hangyál, R., Kósa, G.	
Health status of pome and stone fruit planting material imported to Serbia	300
Paunović, S., Jevremović, D.	
Investigation on the phytosanitary status of the main stone fruit nurseries and mother plots in Albania	304
Musa, A., Merkuri, J., Milano, R., Djelouah, K.	
An investigation on Rose Mosaic Disease of Rose in Hatay-Turkey	309
Sertkaya, G.	
Agro-ecological incidence and severity of <i>Pepper veinal mottle virus</i>, genus Potyvirus, family Potyviridae, on cultivated pepper (<i>Capsicum annuum L.</i>) in Nigeria.	314
Fajinmi, A.A.	
Preliminary results on resistance to PPV-M in <i>Prunus persica</i> (L.) Batsch	323
Casati, P., Bassi, D., Spadone, P., Bianco, P.A.	
The inheritance of the hypersensitivity resistance of European plum (<i>Prunus domestica L.</i>) against the <i>Plum pox virus</i>	327
Lichtenegger, L., Neumüller, M., Treutter, D., Hartmann, W.	
Evaluation of transgenic <i>Prunus domestica</i> L., clone C5 resistance to <i>Plum pox virus</i>*	330
Jarošová J., Gadiou S., Polák J., Ravelonandro M., Scorza R., Kumar J. K.	
Evaluation of different peach genotypes for resistance to <i>Plum pox virus</i> strain M: preliminary results	334
Pasquini, G., Ferretti, L., Gentili, A., Campus, L., Verde, I., Micali, S., Conte, L., Barba, M.	
Bioistic transfection of plants by infectious cDNA clones of <i>Plum pox virus</i>	339
Šubr, Z.W., Nagyová, A., Glasa, M.	
Typing and distribution of <i>Plum pox virus</i> isolates in Romania	342
Zagrai, I., Zagrai, L., Kelemen, B., Petricele, I., Pamfil, D., Popescu, O., Preda S., Briciu, A.	
Preliminary studies on the use of the Cascade Rolling Circle Amplification technique for <i>Plum pox virus</i> detection	347
Hadersdorfer, J., Neumüller, M., Fischer, T., Treutter, D.	
Survey on <i>Plum pox virus</i> in Norway	351
Blystad, D.-R., Knudsen, R., Spetz, C., Haugslien, S., Ørstad, K., Cambra, M., Munthe, T.	
<i>Pospiviroidae</i> viroids in naturally infected stone and pome fruits in Greece	353
Kaponi, M.S., Luigi, M., Barba, M., Kyriakopoulou, P.E.	
Detection by tissue printing hybridization of Pome fruit viroids in the mediterranean basin	357
Di Serio, F., Afechtal, M., Attard, D., Choueiri, E., Gumus, M., Kaymak, S., Lolic, B., Matic, S., Navarro, B., Yesilcolou, S., Myrta, A.	
First report and molecular analysis of <i>Apple scar skin viroid</i> in sweet cherry	361
Kaponi, M.S., Luigi, M., Barba, M., Sano, T., Kyriakopoulou, P.E.	

Molecular characterization of Hellenic variants of <i>Apple scar skin viroid</i> and <i>Pear blister canker viroid</i> in pome fruit trees	366
Kaponi, M.S., Luigi, M., Barba, M., Kyriakopoulou, P.E.	
Identification and characterization of <i>Peach latent mosaic viroid</i> and <i>Hop stunt viroid</i> in different peach cultivars showing dapple fruit, fruit yellow mosaic and cracked suture symptoms	373
Luigi, M., Faggioli, F., Barba, M., Giunchedi, L.	
Assessment of susceptibility to European stone fruit yellows phytoplasma of new plum variety and five rootstock/plum variety combinations	378
Landi, F., Prandini, A., Paltrinieri, S., Missere, D., Bertaccini, A.	
Detection and distribution of European stone fruit yellows (ESFY) in apricot cv. 'Bergeron' and epidemiological studies in the province of Trento (Italy)	383
Poggi Pollini, C., Forno, F., Franchini, S., Gobber, M., Lanzoni, C., Mattedi, L., Miorelli, P., Profaizer, D., Ratti, C.	
PCR/RFLP-based method for molecular characterization of 'Candidatus <i>Phytoplasma prunorum</i>' strains using the <i>aceF</i> gene.	386
Martini, M., Ferrini, F., Danet, J.-L., Ermacora, P., Sertkaya, G., Delić, D., Loi, N., Foissac, X., Carraro, L.	
Establishment of a quantitative real-time PCR assay for the specific quantification of Ca. <i>Phytoplasma prunorum</i> in plants and insects	392
Jarausch, W., Fuchs, A., Jarausch, B.	
Evaluation of susceptibility of pear and plum varieties and rootstocks to Ca. <i>P. pyri</i> and Ca. <i>P. prunorum</i> using Real-Time PCR	395
Torres, E., Laviña, A., Sabaté, J., Bech, J., Batlle, A.	
Molecular characterization of 'Candidatus <i>Phytoplasma prunorum</i>' in <i>Cacopsylla pruni</i> insect vector	399
Ferretti, L., Gentili, A., Poggi Pollini, C., Ermacora, P., Pasquini, G.	
Experimental transmission trials by <i>Cacopsylla pyri</i>, collected from Pear Decline infected orchards in Turkey	403
Çağlayan, K., Gazel, M., Ulubas Serçe, Ç., Can, F.	
Effect of Candidatus <i>Phytoplasma pyri</i> infection on fruit quality, total phenolic content and antioxidant capacity of 'Deveci' pear, <i>Pyrus communis</i> L.	407
Ulubas Serçe, Ç., Gazel, M., Çağlayan, K., Özgen, M.	
Diagnostics of fruit trees phytoplasmas – the importance of latent infections	412
Mehle, N., Ambrožič Turk, B., Brzin, J., Nikolić, P., Dermastia, M., Boben, J., Ravnikar, M.	
European stone fruit Yellows phytoplasma in Japanese plum and Myrobalan plum in Bosnia and Herzegovina	415
Delić, D., Mehle, N., Lolić, B., Ravnikar, M., Đurić, G.	
Almond witches'-broom phytoplasma (Candidatus <i>Phytoplasma phoenicum</i>): a real threat to almond, peach and nectarine.	418
Abou Jawdah, Y., Abou-Fakhr, E., Sobn, H., Molino Lova, M., Vercesi, A., Bianco, P.A.	
Results of patch-grafting of tissue infected by 'Candidatus <i>Phytoplasma pyri</i>' or by 'Candidatus <i>Phytoplasma prunorum</i>', respectively on pear and apricot plants cultivated in pot	421
Pastore, M., Cardone, A., Catucci, L., Del Vaglio, M., Gervasi, F., Scognamiglio, G., Bertaccini, A.	

Evaluation of detection methods for Virus, Viroids and Phytoplasmas affecting pear and apple

424

Laviña, A., Sabaté, J., Batlle, A.

List of Authors

428