

Vol 71(2a) 1-266 (2006)
Vol 71(2b) 267-630 (2006)
Vol 71(3a) 631-866 (2006)
Vol 71(3b) 867-1340 (2006)

**COMMUNICATIONS IN AGRICULTURAL AND
APPLIED BIOLOGICAL SCIENCES**

formerly known as

**MEDEDELINGEN FACULTEIT LANDBOUWKUNDIGE
EN TOEGEPASTE BIOLOGISCHE WETENSCHAPPEN**

PUBLISHERS

Professoren
Pascal Boeckx
Peter Bossier
Guy Smagghe
Walter Steurbaut
Els Van Damme
Erick Vandamme
Niko Verhoest

EDITORIAL ADDRESS

Coupure links 653
9000 Gent (Belgium)

Website: <http://www.fbw.ugent/>

ISSN 1379-1176

Proceedings

**58th
INTERNATIONAL SYMPOSIUM
ON CROP PROTECTION**

Editor P. Spanoghe

Gent, May 23, 2006

PATRONS

Faculty of Bioscience Engineering, Ghent University
Fund for Scientific Research – Flanders

Aveve, Leuven, Belgium
BASF, Brussel, Belgium
Bayer CropScience, Brussel, Belgium
Belchim, Londerzeel, Belgium
Biobest Biological Systems, Westerlo, Belgium
Break-Thru, Essen, Germany
Dow Agrosciences, Edegem, Belgium
Fytolab, Gent, Belgium
Hermoo, Leuven, Belgium
Janssen Pharmaceutica, Beerse, Belgium
Novolab, Geraardsbergen, Belgium
Olympus, Aartselaar, Belgium
Syngenta Crop Protection, Ruisbroek, Belgium
Taminco, Gent, Belgium

ORGANIZING COMMITTEE

HONORARY
CHAIRMEN

D. DEGHEELE (†), **W. DEJONCKHEERE** (†),
A. GILLARD, **R.H. KIPS** (†), **C. PELERENTS**,
J. POPPE, **J. STRYCKERS** (†), **J. VAN DEN**
BRANDE (†), **W. WELVAERT**

ORGANIZING
COMMITTEE

W. STEURBAUT (Chair), **R. BULCKE**,
P. DE CLERCQ, **M. HÖFTE**, **M. MOENS**,
G. SMAGGHE, **L. TIRRY**

P. SPANOGHE (Secretary-general)
H. VAN BOST & **L. GOSSYE** (Assistant-
secretaries)

ADVISORY
COMMITTEE

A. CALUS, **J. COOSEMANS**, **P. CORNELIS**,
P. CREEMERS, **W. DE COEN**, **A. DE LOOF**,
E. PRINSEN, **D. REHEUL**, **E. VAN BOCK-**
STAELE, **Erick VANDAMME**, **Els VAN DAM-**
ME, **H. VAN LANGENHOVE**,
R. VERSCHOORE, **W. VERSTRAETE**,
E. VOLCKAERT

SECTIONS

Chairmen

- G.R. de Snoo**, Leiden, The Netherlands
- M.L. Gullino**, Grugliasco, Italy (weet heeft haar vervangen)
- G. Haesaert**, Gent, Belgium
- H.E. Hummel**, Giessen, Germany
- T. Maes**, Merelbeke, Belgium
- J.L. Starr**, Stephenville, USA
- J. Stenström**, Uppsala, Sweden
- U. Wyss**, Kiel, Germany

Vice-chairmen

- P. Jaeken**, Sint-Truiden, Belgium
- B.R. Kerry**, Harpenden, UK
- C.R. Krause**, Wooster, Ohio, USA
- A.K. Mourad**, Alexandria, Egypt
- I. Vantornhout**, Gent, Belgium
- J-A. Verreet**, Kiel, Germany
- V. Zadorozhny**, Vinnitsa, Ukraine

CONTENTS Vol 71(2a) 1-266 (2006)

Special Section – Bioremediation of Pesticides	1
T. De Wilde, P. Spanoghe, J. Ryckeboer, D. Springael & P. Jaeken Optimalisation and feasibility of bioremediation systems for the processing of spray losses of pesticides	3
O. Pigeon, C. De Vleeschouwer, F. Cors, B. Weickmans, B. Huyghebaert, V. Planchon, L. Pussemier & M. Culot Biofilters to treat the pesticides wastes from spraying applications: results after 4 years of study	9
Application Technology, Risk Analysis, Ecotoxicology and Residues	21
S.D. Karakotov, E.V. Zheltova, Yu.G. Putsykin, K.V. Balakin & A.A. Shapovalov Novel formulation for enhancing efficiency of tebuconazole	23
S.D. Karakotov, E.V. Zheltova, Yu.G. Putsykin, K.V. Balakin & A.A. Shapovalov Novel formulaiton for enhancing efficiency of metribuzin	31
B.C. Schiffers, A. Schubert, C. Schiffers, S. Fontaine, N. Gumusboga, B. Werner, M. Webb, H. Lugros & G. Stinglhamber. The PIP training programme: building of ACP experts capacities in crop protection and food safety to support local companies to comply with EU regulations on pesticide residues	39
G.R. de Snoo, W.L.M. Tamis, M.G. Vijver, C. Musters & M. van 't Zelfde Risk mapping of pesticides: the Dutch atlas of pesticide concentrations in surface waters: www.pesticideatlas.nl	49
F.A.W. Verdonck, P. Van Sprang & P.A. Vanrolleghem Towards acceptability criteria of probabilistic risks of plant protection products	59
J. Oliva, A. Barba, P. Payà & M.A. Camarà Disappearance of fenheximid residues during wine-making process	65
K. Talebi & H. Ghazizadeh Ahsaii Determination of pymetrozine residues in cucumber	75
S. Gielen, L. Vogels, B. Seels & R. Aerts Phytotoxicity of tolylfluanid in tomatoes	79

- R. Rouabhi, H. Berrebah & M.R. Djebbar**
Evaluation of toxicity of two pesticides: flucycloxuron and diflubenzuron on a cellular model, *Paramecium* sp. 83
- L. Mallem, M.S. Boulakoud & M. Franck**
Hypothyroidism after medium exposure to the fungicide maneb in rabbit *Cuniculus lepus* 91
- J. Tavaszi & P. Budai**
Toxicity study of agrochemicals on chorioallantoic membrane of the EGG 101
- E. Juhasz, R. Szabo, M. Keserü, P. Budai & L. Varnagy**
Toxicity of a pendimethalin containing herbicide formulation and three heavy metals in chicken embryos 107
- E. Juhasz, R. Szabo, M. Keserü, P. Budai & L. Varnagy**
Teratogenicity testing of a 2,4-D containing herbicide formulation and three heavy metals in chicken embryos 111
- G. Cuartero Diaz, E. Haubruge & F. Francis**
Valorization of biocide molecules within the pea seed (*Pisum sativum* L.) industrial residues 115
- H. Grüneberg, C. Oschmann, S. Dunya & C. Ulrichs**
Improving green roofs and rail road greening systems using *Bacillus subtilis* and *Lactobacillus* spp. 121
- A. Sharifi-Tehrani, M. Ahmadzadeh, M. Farzaneh & S. Sarani**
Powder formulations of two strains of *Bacillus subtilis* for control of rape seed damping-off caused by *Rhizoctonia solani* 131
- E. Skorska & M. Swarczewicz**
Comparison of some adjuvants efficacy with azoprim and buramet using chlorophyll fluorescence 141
- M. Swarzewicz & E. Skorska**
Influence of an adjuvant on the distribution of herbicides in a sediment/water system 147
- S. Ehsanfar, S.A.M. Modarres-Sannavy & R. Tavakkol-Ashari**
Effects of osmopriming on seed germination of canola (*Brassica napus* L.) under salinity stress 155
- G. Spera, S. Rosati, E. Rossi & S. Scicchitano**
Subsurface drip irrigation with micro-encapsulated trifluralin. Trifluralin residues in soils and cultivations 161

- C. Ulrichs, F. Krause, T. Rocks, A. Goswami & I. Mewis**
Electrostatic application of inert silica dust based insecticides onto plant surfaces 171
- N. Viaene, B. Eloit, R. De Vis, R. Decadt, N. Vergote, P. Bleyaert, L. Peeters, M. Trybou & K. Heugens**
Critical use of methyl-bromide for soil disinfestation in Belgium during 2005 179
- W.T. Runia, L.P.G. Molendijk, G. Neophytou & A. Greenberger**
Soil treatment with hot air (Cultivit®) as alternative to methyl-bromide 185
- F. Henriët, O. Pigeon & J-M. Moreau**
Influence of the spraying system on fungicides distribution on wheat plants 193
- C. Stainier, M-F. Destain, B. Schiffers & F. Lebeau**
Effect of the entrained air and initial droplet velocity on the release height parameter of a Gaussian spray drift model 197
- M. De Schampheleire, P. Spanoghe, D. Nuyttens, K. Baetens, W. Cornelis, D. Gabriëls & P. Vander Meeren**
Classification of spray nozzles based on droplet size distributions and wind tunnel tests 201
- S. Poienaru, N. Sarpe & M. Maschio**
The economical efficiency of classic and no-tillage system at genetical modified soybean in conditions of Romania 209
- T. Mucha-Pelzer, S. Müller, F. Rohr & I. Mewis**
Cracking susceptibility of sweet cherries (*Prunus avium* L.) under different conditions 215
- Biological control of pests** 225
- L. Focher, N. Eychenne, A. Weissenberger, M. Jarry, C. Regnault-Roger & M. Delos**
Study of effects of BT Maize (*Zea mays*) events on Lepidoptera *Ostrinia nubilalis*, *Sesamia nonagrioides* in Southwestern France 227
- A.N. Mahar, A.A. Al-Siyabi, S.A. Elawad, N.G.M. Hague & S.R. Gowen**
Application of toxins from the entomopathogenic bacterium, *Xenorhabdus nematophila*, for the control of insects on foliage 233
- A.A. Al-Siyabi, M.M. Kinawy, M. Al-Ansri, A.N. Mahar, S.R. Gowen & N.G.N. Hague**
The susceptibility of onion thrips, *Thrips tabaci* to *Heterorhabditis indicus* 239

- V. Kutywayo, L. Karanja, G. Oduor & S. Nyirenda**
Characterisation of Malawian isolate of *Beauveria bassiana*, a potential control agent of coffee stem borer, *Monochamus leuconotus* 245
- R.A. Boothe & D.J. Ponsonby**
Searching behaviour in *Chilocorus nigritus* (F.) (Coleoptera: Coccinellidae) 253
- U. Wyss & G. Mölck**
Film documentation on the parasitisation behaviour of the aphid parasitoids *Aphelinus abdominalis* and *Aphidius uzbekistanicus* 263
- 267

CONTENTS Vol 71(2b) 267-630 (2006)

Agricultural Entomology	267
B. Gobin, A. Marien, S. Davies & H. Leirs Enhancing earwig populations in Belgian orchards	269
M. Miles & H. Eelen The effects of spinosad to beneficial insects and mites and its use in IPM	275
M. Miles, G. Kenmitt & P. Valverde Results from two years of field studies to determine mancozeb based spray programmes with minimal impact on predatory mites in European vine cultivation	285
I. Ishaaya, V. Khasdan & A. Rami Horowitz Effect of Zohar LQ-215, a biorational surfactant on the sweetpotato whitefly <i>Bemisia tabaci</i> (Biotype B)	295
H.A. Mesbah, A.K. Mourad & A.Z.M. Rokaia Efficacy of some plant oils alone and/or combined with different insecticides on the cotton leaf-worm <i>Spodoptera littoralis</i> (Bois.) (Lepidoptera: noctuidae) in Egypt	305
A. Rattanapan, S. Visetson, L. Ngernsiri & J. Milne Efficiency of Thai derris extract and cypermethrin: toxicity and detoxification enzyme mechanism in the tropical armyworm, <i>Spodoptera litura</i> F.	329
J-M. Rabasse New urban, trees/pests interactions in Europe	339
H.E. Hummel & M. Bertossa <i>Diabrotica virgifera virgifera</i> in Switzerland: future invasion trend into Germany via transalpine, terrestrial routes	347
T. Kovacs, G. Kuroli, P. Pomsar, L. Nemet, O. Pali & M. Kuroli Localisation and seasonal positions of wireworms in soils	357
G. Peusens, L. Buntinx & B. Gobin Parasitism of the parasitic wasp <i>Ephedrus persicae</i> (Frogatt) on the rosy apple aphid <i>Dysaphis plantaginea</i> (Passerini)	369
H. Askary, M. Ajam Hassani & H. Yarmand The fauna of cynipid oak gall wasps and their parasitoids in Lorestan province, Iran	375

- E. Azizkhani, Gh.R. Rasoulia, A. Kharazi-Pakdel, R. Omid, V.R. Moniri & G. Melika**
The fauna of cynipid oak gall wasps and their parasitoids in Lorestan province, Iran 387
- K. Amevoin, A. Sanon, M. Apossaba & I.A. Glitho**
Biological control of bruchids infesting cowpea by the introduction of *Dinarmus basilis* (Rodani) (Hymenoptera: Pteromalidae) adults into farmers' storages in West Africa 391
- F. Maleki, A. Ashouri, J. Mohaghegh & A.R. Bandini**
Effect of some diets on *Macrolophus pygmaeus* Rambur (Hemiptera: Miridae) fitness under laboratory conditions 393
- A. Karimy, A. Ashouri, A. Kharazi Pakdel, S.H. Goldansaz, H.R.S. Moayeri & A.A. Kosari**
Olfactory response of the predatory bug, *Orius albidipennis* to volatile blends of strawberry and cucumber infested by spider mite 399
- R. Almohamad, F. Verheggen, F. Francis & E. Haubruge**
Evaluation of hoverfly *Episyrphus balteatus* De Geer (Diptera: Syrphidae) oviposition behaviour toward aphid-infested plants using a leaf disc system 403
- A. Alhmedi, E. Haubruge, B. Bodson & F. Francis**
Inter- and intra-guild interactions related to aphids in nettle (*Urtica dioica* L.) strips closed to field crops 413
- M.I. Schneider, P. Pineda & G. Smagghe**
Side-effects of conventional and non-conventional insecticides on eggs and larvae of *Chrysoperla externa* (Hagen) (Neuroptera: Chrysopidae) in Argentine 425
- H. Eelen, B. Gobin & M. Miles**
Field studies to determine the effects of spinosad on the predatory bugs *Anthocoris nemoralis* and *A. nemorum* 429
- A.B. Hadapad & C.P.W. Zebitz**
Mass production, survival and evaluation of solid substrate inocula of *Beauveria brongniartii* (Saccardo) Petch against *Holotrichia serrata* (Coleoptera: Scarabaeidae) 433
- A.R. Bandani & N. Esmailpour**
Oil formulation of entomopathogenic fungus, *Beauveria bassiana*, against sunn pest, *Eurygaster integriceps* Puton (Heteroptera: Scutelleridae) 443
- G. Mikunthan & M. Manjunathan**
Fusarium semitectum, a potential mycopathogen against thrips and mites in Chili, *Capsicum annum* 449

- G. Mikunthan & M. Manjunathan**
Pathogenicity of *Fusarium semitectum*, against crop pests and its biosafety to non-target organisms 465
- V. Bullangpoti, S. Viseton, M. Milne, J. Milna, S. Pornbanlualpap, S. Sudthongkong & S. Tayapat**
The novel botanical insecticide for the control of brown planthopper (*Nilaparvata lugens* Stal.) 475
- D. Jemla naik, V.V. Belavadi & D. Thippesha**
Efficacy of neem products and insecticides for the control of shoot fly *Formosania flavipes* Mall. of cardamom (*Elettaria cardamomum* Maton.) 483
- C. Ikbal, M. Ben Halima-Kamel & M.H. Ben Hamouda**
Insect growth regulator activity of *Cestrum parqui* saponins: an interaction with cholesterol metabolism 489
- K. Jaber, L. Paquereau, D. Fournier, E. Haubruge & F. Francis**
Use of artificial diet system to assess the potential bio-insecticide effect of a fungal lectin from *Xerocomus chrysenteron* (XCL) on *Myzus persicae* 497
- F. Rohr, C. Ulrichs, T. Mucha-Pelzer & I. Mewis**
Variability of aliphatic glucosinolates in Arabidopsis and their influence on insect resistance 507
- M.A. Massoud, A.K. Mourad, A. El-Beltagy & M.E. El-Salamony**
Biochemical studies on different field strains of the pink bollworm *Pectinophora gossypiella* (Saund.) (Lepidoptera: Gelechiidae) in Egypt 517
- A.R. Bandani & A. Balvasi**
Comparison of α -amylase activity in larval stages of flour beetles, *Tribolium confusum* (Coleoptera: Tenebrionidae) 537
- A.R. Bandani, M. Tork & Gh.R. Rassoulian**
Comparison of pathogenicity of two isolates of the entomopathogenic fungus *Metarhizium anisopliae* on adult sunn pest (*Eurygaster integriceps* Puton.) 543
- P. Paya, J. Mulero, J. Oliva, A. Barba, J. Morillas & P. Zafrilla**
In vitro availability of insect growth regulators from vegetables 549
- S. Kilani-Morakchi, N. Aribi, J.P. Farine, G. Smagghe & N. Soltani**
Cuticular hydrocarbon profiles in *Blattella germanica*: effects of halofenozide, boric acid and benfuracarb 555

- G. Abbaszadeh, G. Seiedoleslami, M.A. Samih & B. Hatami**
Bioecology of pistachio twig borer moth *Kermania pistaciella* Amsel, in Rafsanjan and Isfahan, Iran 563
- H.E. Hummel, S. Modic & G. Urek**
Diabrotica virgifera virgifera in Eastern Slovenia: increasing population trend 2005 571
- H.E. Hummel & J.T. Shaw**
Diabrotica flight in time and space as monitored with a high capacity trap placed in *Zea mays* fields of Illinois, USA 574
- M. Pobozniak, P. Bujak & S. Rataj**
The occurrence and species composition of thrips (Thysanoptera) on leek 585
- A. Arbab, D.C. Kontodamis & A. Sahragard**
Estimating development of *Aphis pomi* (Degeer) (Homoptera: Aphididae) using linear and nonlinear models 591
- M.A. Samih, H. Izadi & K. Mahdian**
Detection by RAPD-PCR of polymorphism in populations of *Bemisia tabaci* (Genn.) collected on four host plants from Iran 605
- M.A. Samih, H. Izadi & K. Mahdian**
Comparative study of the five biological parameters of cotton whitefly *Bemisia tabaci* and silverleaf whitefly *B. argentifolii* Bellows and Perring reared on cotton under laboratory condition 613
- H. Izadi, M.A. Samih & K. Mahdian**
Identification and introduction of some Iran pollinator bees of Colletidae, Halictidae and Megachilidae (Hym: Apoidea) 621
- G. Parrella, E. Caprio & P. Mazzone**
Development of improved molecular methods for the detection of Deformed Wing Virus (DWV) in honeybees (*Apis mellifera* L.) and mites (*Varroa destructor* Oud.) 625

CONTENTS Vol 71(3a) 631-866 (2006)

Nematology	631
X. Yi & R-U. Ehlers Combining <i>Steinernema carpocapsae</i> and <i>Bacillus thuringiensis</i> strains for control of diamondback moth (<i>Plutella xylostella</i>)	633
V.C. Blok, L. Pylypenko & M.S. Phillips Molecular variation in the potato cyst nematode, <i>Globodera pallida</i> , in relation to virulence	637
R. Holgado, S. Andersson & C. Magnusson Management of cereal cyst nematodes, <i>Heterodera</i> spp. in Norway	639
J.L. Starr & C.E. Simpson Improving the utility of nematode resistance in groundnut	647
C.C. Fleming, S.J. Turner & M. Hunt Management of root knot nematodes in turfgrass using mustard formulations and biostimulants	653
H.Z. Aboul-Eid, E.M.A. Noweer, N.E. Ashour & H.H. Ameen Evaluation of a nematode bio-product DBX-20% against root-knot nematode <i>Meloidogyne incognita</i> affecting grapevine under field conditions	659
R. Hasemedin Effect of different initial population densities of <i>Meloidogyne incognita</i> on the growth of <i>Cicer arietinum</i>	669
B. Schösser, S. Hauser & R.A. Sikora Suitability of <i>Pueraria phaseoloides</i> , <i>Chromolaena odorata</i> and <i>Tithonia</i> <i>diversifolia</i> as in-situ mulch for nematode management in <i>Musa</i> cropping systems	675
Sh. Shahidi Noghahi, M.A. Ansari & M. Moens Diversity in pathogenicity of <i>Steinernema carpocapsae</i> and its symbiotic bacterium for <i>Spodoptera</i> spp.	689
E. Brusselman, W. Steurbaut & B. Sonck Optimizing the application of entomopathogenic nematodes	701
Herbology	707
H. Mennan, M. Ngouajio, D. Isik, B. Kose & E. Kaya The effects of cover crop on weed control in collard (<i>Brassica oleracea</i> var. <i>acephala</i>) and lettuce (<i>Lactuca sativa</i> L.)	709

- S. Narwal, B.M. Sindel & R.S. Jessop**
Tillage and residues burning affects weed population and seed banks 715
- E. Mechant & R. Bulck**
Metamitron-resistant *Chenopodium album* from sugar beet: cross-resistance profile 725
- A. Datta, B. Sindel, R. Jessop, C. Birchall & W. Felton**
Differential response of chickpea genotypes to isoxaflutole 733
- K. Dewitte, J. Latré & G. Haesaert**
Possibilities of chemical weed control in *Lupinus albus* and *Lupinus luteus* – screening of herbicides 743
- E. Zand, S. Soufizadeh & A. Eskandari**
Water stress and nitrogen limitation effects on corn (*Zea mays* L.) competition with a C₃ and a C₄ weed 753
- B. De Cauwer, D. Reheul, I. Nijs & A. Milbau**
Impact of field margin vegetation and herbage removal on ingrowing and Anemochorous weeds 761
- B. Mirshekari, A. Dabbagh Mohammadi Nasab & A. Biroonara**
Interference of redroot pigweed (*Amaranthus retroflexus* L.) in green bean (*Phaseolus vulgaris* L.) 775
- G. Kazinczi, A. Takacs & J. Horvath**
Crop-weed competition between sunflower (*Helianthus annuus* L.) and *Convolvulus arvensis* L. in substitutive experiments 781
- A. Kismanyoky, E. Lehoczky & T. Kismanyoky**
Effect of fertilization on the weediness of maize in a long-term field experiment 787
- E. Lehoczky, A. Kismanyoky & T. Kismanyoky**
Study on the weediness of winter wheat in a long-term fertilization field experiment 793
- Zs.P. Hoffmann, K. Buzsaki & I. Beres**
Spreading and germination of yellow nutsedge (*Cyperus esculentus* L.) in Hungary 797
- V. Toth & E. Lehoczky**
Investigations on the germination depth of Johnson grass (*Sorghum helepense* (L.) Pers) 803
- G. Wagner & E. Nadasy**
Effect of pre-emergence herbicides on growth parameters of green pea 809

- A.C. Sparacino, R. Ferro, N. Riva, D. Ditto, F. Tano, G. Croce & J-M. Rabasse**
Weed control in rice with metham-sodium 815
- S.D. Karakotov, E.V. Zheltova, Yu.G. Putsykin, K.V. Balakin & A.A. Shapovalov**
Use of growth regulator of cytokinin type for enhancement and modification of herbicide activity 821
- S. Poienaru & N. Sarpe**
The residual effect of imazethapyr applied in soybean to barley and winter wheat in Romania 829
- Biological and integrated control of diseases** 837
- S. Van Laer, B. Vorstermans, K. Hauke & P. Creemers**
Brown spot control on pear: infection models versus the inoculum pressure in Belgium 839
- M.B. Klix, M. Beyer & J-A. Verreet**
Declining triazole sensitivity in *Gibberella zeae* and advances in fungicide development 849
- M. Aldaghi, S. Massart, S. Roussel & M.H. Jijakli**
Establishment of a new method for rapid and precise estimation of apple proliferation phytoplasma concentration in periwinkle 853
- R. Bugliosi, G. Spera, A. La Torre, L. Campoli & M. Scaglione**
Artificial intelligence approach with the use of artificial neural networks for the creation of a forecasting model of *Plasmopara viticola* infection 859

CONTENTS Vol 71(3b) 867-1340 (2006)

Phytopathology	867
S. Devos & E. Prinsen	
Plant hormones: a key in clubroot development	869
A. Chandelier, S. Abras, F. Laurent, N. Debruxelles & M. Cavelier	
Effect of temperature and bacteria on sporulation of <i>Phytophthora alni</i> in river water	873
M. Wenneker, P. Vink & A.S. Van Bruggen	
Eutypa dieback as an important (new) disease in red currant (<i>Ribes rubrum</i>) in The Netherlands	881
J. Hoek, F.C. Zoon & L.P.G. Molendijk	
Transmission of tobacco rattle virus (TRV) via seed potatoes	887
F. Fiume & G. Fiume	
Biological control of Botrytis gray mould on tomato cultivated in greenhouse	897
Hesamedin Ramezani	
Fungicidal activity of volatile oil from <i>Eucalyptus citriodora</i> Hook. against <i>Alternaria triticina</i>	909
G. Arras, G. D'hallewin, M.G. Molinu, A. Dore, T. Venditti, M. Fois, G. Lima & M. Agabbio	
Induction of phytoalexins biosynthesis in orange fruit by the biocontrol yeast <i>Rhodotorula glytina</i>	915
M.G. Molinu, T. Venditti, A. Dore, G. D'hallewin, A. Serusi, A. Del Caro & M. Agabbio	923
Post harvest decay reduction of fig fruit (<i>Ficus carica</i>) by hot water sodium carbonate solutions dip	
G. Arras, M.G. Molinu, A. Dore, T. Venditti, M. Fois, A. Petretto & G. D'hallewin	
Inhibitory activity of 2-deoxy-d-glycose and <i>Candida saitoana</i> against <i>Penicillium digitatum</i>	929
B. Hajieghrari, M.R. Mohammadi & D. Hadian	
Antifungal activity of <i>Cymbopogon parkeri</i> Stapf. essential oil on some important phytopathogenic fungi	937
M. Ahmadzadeh & A. Sharifi-Tehrani	
Suppression of seed rot and preemergence of chickpea by seed treatment with fluorescent Pseudomonad's in Iran	943

- A.A. Dababat, R.A. Sikora & R. Hauschild**
Use of *Trichoderma harzianum* and *Trichoderma viride* for the biological control of *Meloidogyne incognita* on tomato 953
- M.R. Santos, J.S. Dias, M.J. Silva & M.M. Ferreira-Pinto**
Resistance to white rust in pak choi and chinese cabbage at the cotyledon stage 963
- M.M. Ferreira-Pinto, M.C. Moura-Guedes, M.G. Barreiro, I. Pais, M.R. Santos & M.J. Silva**
Aureobasidium pullulans as a biocontrol agent of blue mold in “Rocha” pear 973
- S. Khalil & B.W. Alsanus**
Biochemical characterization of biocontrol agents used for control of root pathogens 979
- H. Chikh-Rouhou, J.A. Alvarez & R. Gonzales-Torres**
Induced resistance in melon plants against *Fusarium oxysporum* f.sp. *melonis* caused by a non-pathogenic isolate of the same *Formae specialis* 985
- J. Nawrocki**
The protection of parsley seedlings (*Petroselinum sativum* Hoffm. ssp. *microcarpum*) against damping-off 993
- B. Gobin, C. Misotten & P. Creemers**
Alternatives to copper and scab control affect mineral composition in leaves and fruits of apple varieties with reduced scab susceptibility or scab resistance 999
- M.T. Carvalho, P. Simões-Lopes, M.J. Monteiro da Silva & M.J. Gonçalves**
The Colletothricum control as an important factor to obtain very high quality olive oils 1007
- C. Skrzypczak**
Downy mildews on ornamental plants and their control 1013
- Surender Singh & Hari Chand**
Screening of bio agents against root rot of mung bean caused by *Rhizoctonia solani* 1017
- H. Afsharmanesh, M. Ahmadzadeh & A. Sharifi-Tehrani**
Biocontrol of *Rhizoctonia solani*, the causal agent of bean damping-off by fluorescent Pseudomonad's 1021
- J. Zebrowska, J. Hortynski, T. Cholewa & K. Honcz**
Resistance to *Verticillium dahliae* (Kleb.) in the strawberry breeding lines 1031

- H. Kurzawinska & J. Duda-Surman**
The evaluation of trifloxystrobin in protection of *Calendula officinalis* (Pot marigold) against *Erysiphe cichoracearum* DC 1037
- S. Bensoltana, M. Youbi, H. Djebbar & M.R. Djebbar**
Effects of two systemic fungicides: Artea (Propiconazole+cyproconazole) and Punch (Flusilazole) on the physiology and the respiratory metabolism of durum wheat (*Triticum durum* L.) 1041
- M. Kallai, C. Csitari & Z. Polgar**
Possibility of the use of *Solanum brevides* based soft rot resistance in potato breeding 1049
- G. Cargnello, L. Pezza et al.**
D.M.R. (Double reasoned maturing): innovative technique of agronomic ecologic control of grey mould on grapevine. Trials and various considerations 1055
- G. Cargnello, L. Pezza et al.**
Minimum pruning, minimal pruning, and physiological pruning as new techniques in grey mould agronomic eco-compatible (Natural) control. Researches and considerations 1063
- A.T. Wojdyla**
Falcon 460EC in the control of foliage disease of some ornamentals 1071
- M.J. Goncalves, A.S. Bagulho, M.J. Monteiro da Silva & M.T. Carvalho**
Wheat reaction to leaf rust and *Septoria tritici* Blotch in four fertilization conditions 1081
- B. Lefrancq & M. Lateur**
Influence of supplementary lighting during artificial scab inoculation tests in an apple breeding program focused on partial resistance 1087
- A. Dariaee, H. Ghazali Biglar & R. Haghparast**
Identification of new wheat common bunt pathotypes (*Tilletia laevis* Kuhn.) 1093
- Zs. Varga & G. Fischl**
Pathogenic fungal species isolated from leaves and seeds of smooth brome (*Bormus inermis* Leyss.) 1103
- A. Szczeponek & S. Mazur**
Occurrence of fungal diseases on lemon balm (*Mellisa officinalis* L.) and peppermint (*Mentha x piperita* L.) in the region of Malopolska 1109

- E. De Rocker, K. Goen & K. Van Poucke**
Disinfection of drain water of tomato by means of UV radiation and slow sand filtration in real greenhouse circumstances 1119
- A. Szczeponek, P. Laszczak, M. Wesolowska, D. Grzebelus & B. Michalik**
Carrot infection by *Alternaria radicina* in field conditions and results of laboratory tests 1125
- A. Ahangaran, S. Khezri, M. Koochi Habibi, A. Alizadeh, Gh. Mosahebi Mohammadi**
The first report of detection of a phytoplasma in olive trees in a botanic collection in Iran 1133
- M. Davari, R. Didar-Taleshmkaeil & B. Hajieghrari**
Wheat Fusarium head blight and identification of dominant species in Moghan area, Iran 1139
- E. Nagy, H. Voichita & R. Kadar**
The influence of Fusarium ear infection on the maize yield and quality (Transylvania-Romania) 1147
- S. Krimi Bencheqroun, M. Bajji, S. Massart, F. Bentata, M. Labhilili, H. Achbnani, S. El Jaafari & M.H. Jijakli**
Biocontrol of blue mold on apple fruits by *Aureobasidium pullulans* (Strain Ach1-1): in vitro and in situ evidence for the possible involvement in competition for nutrients 1151
- R. Lahlali, D. Friel, M. Nahib Serrhini & M.H. Jijakli**
Effect of incubation temperature and relative humidity on lesion diameter of *Botrytis cinerea* Pers. and *Penicillium expansum* Link. on apple fruits 1159
- L.B. Orlikowski, A. Trzewik & K. Wiejacha**
Phytophthora tropicalis on *Hedera helix* and *Epipremnum aureum* in Polish greenhouses 1167
- S. Massart, A. Moh, S. Roussel, S. Van Mellaert & M.H. Jijakli**
Preliminary development of real time PCR for quantification of *Erwinia* species infecting potato tubers 1171
- H. Saremi & S.M. Okhovvat**
Mycotoxin producing *Fusarium* species associated with plant disease on potato, wheat, corn and animal diseases 1175
- H. Saremi, A. Amarlou & S.M. Okhovvat**
Verticillium wilt of olive branches in Iran and its control managements with soil solarisation method 1187

- A. Bohlooli, S.M. Okhovvat & M. Javan-Nikkhah**
Pathogenicity of some *Rhizoctonia solani* isolates associated with root/collar rots on the cultivars of bean in greenhouse 1197
- O. Portal, D. Cabrera, A. Sanchez, A.L. Darias, J.E. Gonzalez & R. Gomez**
Molecular characterization of two Cuban isolates of the papaya ringspot virus by means of coat protein analysis 1203
- A. Ahangaran, Gh. Mosahebi Mohammadi, M. Koochi Habibi, N. Shahraeen & S. Khezri**
Rapid diagnosis of soybean mosaic virus N soybean by tissue-print immunoassay and diba in comparison to other serological methods 1207
- H. Khateri, N. Moarrefzadeh, M. Koochi-Habibi, G. Mosahebi, A. Hosseini & N. Hamzeh**
High incidence of tobacco streak virus in the tobacco fields of Iran 1213
- N. Moarrefzadeh, H. Khateri, M. Koochi-Habibi, G. Mosahebi & A. Hosseini**
Evaluation the efficiency of TPIA method for the detection of two tobacco viruses 1217
- M. Peyambari, M. Koochi-Habibi, Gh. Mosahebi & K. Izadpanah**
Determination of seed-born percentages of bean common mosaic necrosis virus (BCMNV) in three genotypes of *Phaseolus vulgaris* 1221
- G. Parrella, L. Scassillo, A. Crescenzi & A.G. Nappo**
Typing of tomato yellow leaf curl viruses and their vector in Italy 1229
- G. Parrella, E. Verdin, P. Gognalons & G. Marchoux**
Detection and characterization of tobacco mild green mosaic virus (TMGMV) large type isolate from trailing petunia in France 1237
- A. Fanigliulo, L. Ferrara, G. Caligiuri, S. Comes, M.T. Momol, S.M. Olson & A. Crescenzi**
Integrated management of TYLCV/TYLCSV on greenhouse hydroponic tomatoes in southern Italy 1245
- S. Comes, A. Fanigliulo, R. Pacella, G. Parrella & A. Crescenzi**
Potato virus Y CFH, a putative recombinant isolate from *Capsicum chinense* cv. *habanero* 1251
- I. Fekih Hassen, S. Massart, S. Roussel, J. Kummert, H. Fakhfakh, M. Marrakchi & M.H. Jijakli**
Genomic structure of new Tunisian peach latent mosaic viroid variants 1257
- H. Saremi, S.R. Razaz Hashemi & S.M. Okhovvat**
Severity of walnut anthracnose and its relatively resistant in Iran 1267

- N. Esfandiari, M. Kohi-Habibi & Gh. Mosahebi**
New indicator plants for potato virus X 1275
- N. Esfandiari, M. Kohi-Habibi & Gh. Mosahebi**
Occurrence of viruses infecting pea in Iran 1281
- B. Ormaz, S. Winter, M. Koochi-Habibi, Gh. Mosahebi & K. Izadpanah**
Comparison of biological and molecular characterization of Iranian lettuce mosaic virus isolates 1289
- S. Hasannejad, S. Javad Zad, H. Mohama Alizade & H. Rahymian**
The effects of *Fusarium oxysporum* on broomrape (*Orobanche egyptiaca*) seed germination 1295
- M. Zamani, A. Sharifi-Tehrani, M. Ahmadzadeh & A. Alizadeh Ali Abadi**
Effect of fluorescent pseudomonades and *Trichoderma* sp. and their combination with two chemicals on *Penicillium digitatum* caused agent of citrus green mold 1301
- M.R. Mohammadi, M. Koochi-Habibi, Gh. Mosahebi & B. Hajieghrari**
Identification of prevalent potyvirus on maize and Johnson grass in corn fields of Tehran province of Iran and a study of some of its properties 1311
- S. Behman, M. Farzaneh, M. Ahmadzadeh & A. Sharifi-Tehrani**
Composition and antifungal activity of essential oils of *Mentha piperita* and *Lavendula angustifolia* on post-harvest phytopathogens 1321
- M. Farzaneh, M. Ahmadzadeh, J. Hadian & A. Sharifi-Tehrani**
Chemical composition and antifungal activity of the essential oils of three species of *Artemisia* on some soil-borne phytopathogens 1327
- S. Mostafae, Gh. Mosahebi & M. Koochi-Habibi**
Potato virus Y isolated from pepper fields in Tehran province 1335