



DELIVERING ON THE INCREASING DEMAND FOR HIGH QUALITY INVERTEBRATES

15th IOBC-MRQA Workshop

Bologna, September 5-9, 2022

Venue: Prodi Room, San Giovanni in Monte Complex, Piazza San Giovanni in Monte, 2, Bologna

Program

Monday, September 5

13.30 – 15.00	Arrival, registration and refreshments
15.00-15.30	Welcome
	<ul style="list-style-type: none">- <i>Maria Luisa Dindo & Rose Buitenhuis (IOBC-MRQA co-convenors)</i>- <i>Simona Tondelli (Deputy Rector of the University of Bologna)</i>- <i>Rosalba Lanciotti (Head of Department of Agricultural and Food Sciences)</i>
15.30-16.00	Keynote presentation
	History, Purpose and Importance of IOBC, MRQA <i>(N.C. Leppla)</i>
16.00-17.40	Mass rearing and evaluating biological control agents for crop pests – 1 Moderator: P. De Clercq
16.00-16.20	Advances in <i>in vivo</i> production and application of entomopathogenic nematodes <i>D. Shapiro-Ilan, J. Morales-Ramos, G. Rojas, F. Kaplan</i> [virtual presentation]
16.20-16.40	<u>Liquid fermentation with focus on bacteria and EPN for a sustainable agriculture</u> <i>L. Garrigos Leite, F. Berton Baldo, J.G. Chacon-Orozco</i>
16.40-17.00	Persi+: A novel rearing technology of <i>Phytoseiulus persimilis</i> . Implications on predator's quality <i>S. Steinberg, A. Tabic</i>

17.00-17.20	Efficiency and health risk evaluation in mass rearing and release of phytoseiids in BC strategies <i>S. Simoni, G. Burgio, F. Tarchi, F. Guidi, D. Goggioli, E. Gagnarli, F. Turillazzi, A. Lanzoni</i>
17.20-17.40	Discussion
17.40-20.20	Welcome cocktail (San Giovanni in Monte Complex, Piazza San Giovanni in Monte, 2, Bologna)

Tuesday, September 6

9.00-9.30	Registration desk open
9.30-12.30	Mass rearing and evaluating biological control agents for crop pests – 2 Moderator: T. Groot
9.30-10.00	Keynote: Egg parasitoids studies in Brazil: utilization, challenges and future <i>(A. Coelho Jr., J.R.P. Parra)</i>
10.00-10.20	Beneficial insect production and implementation for mealybug biological control <i>(L. Erkilic, H. Demirbas, B. Guven, N. Demirbas)</i>
10.20-10.40	The victories, struggles and defeats of rearing tortricids in South Africa <i>(T. Marsberg, S. Moore, A. Smith, G. Fourie)</i>
10.40-11.10	Break
11.10-11.30	Control potential of <i>Spodoptera frugiperda</i> by <i>Trichogramma pretiosum</i> and <i>Telenomus remus</i> isolated or associated in laboratory and semi-field conditions <i>(L. Lacerda, A. Coelho Jr, J.R.P. Parra)</i>
11.30-11.50	Fecundity and predation activity of <i>Exochomus quadripustulatus</i> on <i>Toumeyella parvicornis</i> <i>(N. Di Sora, L. Rossini, M. Contarini, S. Speranza)</i>
11.50-12.10	Can rearing <i>Sclerodermus brevicornis</i> (Hymenoptera: Bethyridae) on a factitious host affect behavior? <i>(S. Malabusini, C. Jucker, I.C.W. Hardy, G. Guanzani, D. Lupi)</i>
12.10-12.30	Discussion
12.30-14.00	Luncheon (San Giovanni in Monte Complex, Piazza San Giovanni in Monte, 2, Bologna)
14.00-15.30	Poster session (Flash presentations followed by poster viewing) Moderator: R. Buitenhuis

	<p>Rearing of <i>Aridelus rufotestaceus</i>, a potential biocontrol agent of stinkbugs (<u>S. Francati</u>, M.L. Dindo)</p> <p><i>Pachycrepoideus vindemiae</i> for biological control of <i>Piophilha casei</i> in ham factories (<u>D. Missere</u>)</p> <p>Insects as food for humans: a potential animal protein source in space exploration missions? (<u>M.L. Dindo</u>, S. Francati)</p> <p>Importance of rearing alternative insect pollinators to improve environmental risk assessments (<u>C. Martins</u>, C. Azpiazu, S. Francati S., J. Bosh Grash, G. Burgio, F. Sgolastra)</p> <p>Indigenous natural enemies in Slovenia with special emphasis on species suitable for mass rearing (<u>S. Trdan</u>, Z. Laznik, T. Bohinc)</p> <p>Rearing and infecting <i>Anopheles stephensi</i> mosquitos with <i>Plasmodium berghei</i> for malaria challenges (<u>A.Truby</u>, M. Ulaszewska, A. Spencer)</p> <p>New native biocontrol agents for Canada: opportunities and challenges (<u>R. Buitenhuis</u>, T. Saito, C. MacDonald, N. Gonzalez, B. Spencer)</p>
15.30-16.00	Break
16.00-17.00	ANBP Board meeting
<p>Free time for city tours (suggestions may be found at https://www.mrqe.eu/workshop2022/social-events-and-guest-program/)</p>	

Wednesday, September 7

9.00-9.30	Registration desk open
9.30-11.40	Mass rearing for SIT and other autocidal pest control Moderator: N.C. Leppla
9.30-10.00	Keynote: Ongoing programs and recent advancements in mass rearing and quality assurance for SIT <i>L.M. LeBeck</i> , <u>N.C. Leppla</u> , A.G. Parker
10.00-10.20	The sterile insect technique against mosquitoes: an update <i>R. Bellini</i>

10.20-10.40	Updates and progress on the sterile insect technique against <i>Aedes albopictus</i> in Italy <i>M. Malfacini, A. Puggioli, F. Balestrino, R. Bellini</i>
10.40-11.00	Break
11.00-11.20	Developing an automatic mosquito pupae sex sorter for mass production of incompatible males in support of area-wide release for vector control <i>J. Gong</i> [virtual presentation]
11.20-11.40	Discussion
11.40-12.00	Biological control agents of key pests in Mauritius – <i>Video presented by Lalini Unmole, introduced by M. L. Dindo</i>
12.00 -13.00	Luncheon (San Giovanni in Monte Complex, Piazza San Giovanni in Monte, 2, Bologna)
13.00-13.15	Walk to via S. Stefano, 30, Bologna
13.15-20.30	Technical tour to Bioplanet company (Cesena)
	<p>Bus transfer from via S. Stefano, 30, Bologna, to Bioplanet company</p> <p>Presentation of the company</p> <p>Visit a production line</p> <p>Refreshment break with local food</p> <p>Demonstration of BCA releases by drone (to be confirmed on the basis of weather conditions)</p> <p>Bus transfer back to the city centre of Bologna</p>

Thursday, September 8

9.00-11.40	Mass rearing insects for food and feed Moderators: L. Pisa, M.L. Dindo
9.00-9.30	Keynote: The basics of edible insect rearing: Handbook for the production chain <i>T. Veldkamp, J. Claeys, O.L.M. Haenen, J.J.A. van Loon, T. Spranghers</i>
9.30-9.50	Influence of the organic fraction of municipal solid waste on black soldier fly larvae growth and bioconversion. <i>C. Jucker, S. de Milato, S. Malabusini, D. Lupi, F. Adani, S. Savoldelli</i>

9.50-10.10	Effect of temperature on storage of the housefly, <i>Musca domestica</i> , for mass production <i>E. Kangah, L. Francuski, L.W. Beukeboom</i>
10.10-10.40	Break
10.40-11.00	Dose-response effects of starch in chicken excreta on housefly larval performance and bioconversion <i>L. Pisa, D. Oonincx, G. Bosch, W. Hendrix</i>
11.00-11.20	Impact of starving time on the fitness of Black Soldier Fly (Diptera: Stratiomyidae) neonates <i>J.S. Oliveira, E.R. Carbognin</i>
11.20-11.40	Discussion
11.40-12.40	Quality Assurance panel discussion Moderator: R. Buitenhuis
	Intro to QA panel (overview of current protocols) <i>R. Buitenhuis</i> Panel discussion <i>R. Buitenhuis, N.C. Leppla, T. Groot, B. Spencer, C. Glenister</i>
12.40-14.10	Luncheon (San Giovanni in Monte Complex, Piazza San Giovanni in Monte, 2, Bologna)
14.10-15.00	IOBC-MRQA Business Meeting Moderators: R. Buitenhuis and M.L. Dindo
	Discussion on new convenors and next location
15.00-17.40	Special session on the book “Mass Production of Beneficial Organisms” Moderators: M.L. Dindo, P. De Clercq
15.00-15.20	Mass Production of Beneficial Organisms, Second Edition: a synopsis <i>(J. Morales-Ramos, G. Rojas, D. Shapiro)</i> [virtual presentation]
15.20-15.40	Mass production of predatory mites: state of the art and future challenges <i>(D. Vangansbeke, M. Duarte, F. Wäckers, K. Bolckmans)</i>
15.40-16.00	What’s new in the mass production of heteropteran predators? <i>(P. De Clercq, T.A. Coudron, E.W. Riddick)</i>
16.00-16.20	Break
16.20-16.40	Production of dipteran parasitoids

	<i>(M.L. Dindo, S. Grenier)</i>
16.40-17.00	Concepts and methods of quality assurance for mass-reared parasitoids and predators <i>(N.C. Leppla)</i>
17.00-17.20	Insects as feed for aquaculture: a concrete solution to solve the worldwide protein hunger <i>(L. Gasco, I. Biasato, P. Enes, F. Gai)</i> [virtual presentation]
17.20-17.30	Discussion
19.30	Social Dinner (Cantina Bentivoglio, Via Mascarella 4/b, Bologna)

Friday, September 9

9.00-9.30	Registration desk open
9.30-10.30	Mass rearing and evaluating pollinators Moderator: G. Burgio
9.30-10.00	Keynote: Quality control in populations of solitary bees and dipterans used in ecotoxicological studies <i>F. Sgolastra, Bosch J., Burgio G., M.L. Dindo, C. Martins</i>
10.00-10.20	Development and application of genomic approaches to identify <i>Apis mellifera</i> subspecies <i>A. Ribani, V. Taurisano, S. Bovo, V.J. Utzeri, C. Gazzetti, L. Fontanesi</i>
10.20-10.30	Discussion
10.30-10.50	Break
10.50-12.00	Mass rearing and evaluating biological control agents for crop pests – 3 Moderator: A. Coehlo
10.50-11.10	Selective breeding of biocontrol agents; lessons learned from the BINGO project <i>T. Groot</i>
11.10-11.30	Optimization of rearing techniques for <i>Trissolcus japonicus</i> (Hymenoptera: Scelionidae) release in the Emilia-Romagna region <i>A. Masetti, B. Bittau, M.L. Dindo, Burgio G.</i>
11.30-11.50	DIY mass rearing of biocontrol agents, an alternative or supplement to commercial products? <i>R. Buitenhuis</i>

11.50-12.00	Discussion
12.00-12.50	Awards and Closing Ceremony
12.50-14.00	Light lunch (San Giovanni in Monte Complex, Piazza San Giovanni in Monte, 2, Bologna)

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