

Contents

Bee Management

Life spans of Africanized honey bees fed sucrose diets enhanced with citric acid or lemon juice

Deodoro M Brighenti, Carla R G Brighenti and César F Carvalho 91

Health outcomes of beekeeping: a systematic review

Jessica Stanhope, Scott Carver and Philip Weinstein 100

Evolution, Phylogeny, and Biogeography

Mitochondrial DNA (mtDNA) markers reveal low genetic variation and the presence of two honey bee races in Uganda's agro-ecological zones

Patrice Kasangaki, Gideon Nyamasyo, Paul Ndegwa, Robert Kajobe, Christopher Angiro, Agapitus Kato and Charles Masembe 112

Morphometric correlation between *Apis mellifera* morphotypes (Hymenoptera) and *Varroa destructor* (Acari) from Uruguay

Pablo Giménez Martínez, Yamandu Mendoza, Ciro Invenizzi, Sandra Fuselli, Rosa Alonso Salces, Pedro Fernández Iriarte and Matias Maggi 122

Hive Product Science

Total phenolic content, total flavonoid and antioxidant activity of ethanolic bee pollen extracts from three species of Malaysian stingless bee

Nurdianah Harif Fadzilah, Mohd Fahimee Jaapar, Rosliza Jajuli and Wan Adnan Wan Omar 130

Palynological origin, chemical composition, lipid peroxidation and fatty acid profile of organic Tuscanian bee-pollen

Simona Sagona, Luisa Pozzo, Pier Giorgio Peiretti, Cesare Biondi, Matteo Giusti, Morena Gabriele, Laura Pucci and Antonio Felicioli 136

Pathology and Parasitology

Pulsed light inactivation of the bumble bee trypanosome parasite *Crithidia bombi*

John Naughton, Erin J Tiedeken, Mary Garvey, Jane C Stout and Neil J Rowan 144

First report of the bee louse *Braula schmitzi* (Diptera: Braulidae) in apiaries of the "Los Chillos" Valley, Province of Pichincha, Ecuador

Nelson Zapata-Carvajal, Angélica Chérrez-Neacato, Sarah Martin-Solano, María-Augusta Chávez-Larrea, Claude Saegerman, Alexis Debut and Jorge Ron-Román 155

Efficacy and safety of Varterminator, a new formic acid medicine against the varroa mite

Matteo Giusti, Cristiano Sabelli, Alberto Di Donato, Devis Lamberti, Chiara Elisabetta Paturzo, Valentina Polignano, Roberto Lazzari and Antonio Felicioli 162

Plastic film wrapped supers full of honey are frozen in an extraction facility as a sanitizing measure against *Aethina tumida*

Franco Mutinelli, Francesco La Mancusa, Marcello Grasso, Antonio Giuliano, Albino Gallina, Andrea Maroni Ponti and Marica Toson

168

Sociobiology and Behaviour

The use of an unmanned aerial vehicle (UAV) to investigate aspects of honey bee drone congregation areas (DCAs)

David C Cramp

172

Toxicology

Stress responses of honey bees to organic acid and essential oil treatments against varroa mites

Nazmiye Gunes, Levent Aydın, Deniz Belenli, John M Hranitz, Sami Mengilig and Semih Selova

175