

Natural attributes of Chilean honeys modified by the presence of neonicotinoids residues

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© 2019, Springer Nature B.V. Honeys in Chile are produced from native and endemic plant species that, due to phenolic compounds, present beneficial biological attributes. However, certain undesirable pollutants can exist in honeys from beehives located near agricultural crops or commercial industries. Neonicotinoids are a widely used pesticide group in farming, despite acute, negative effects to bee health. Indeed, neonicotinoids are associated with colony collapse disorder, one of the main causes for increased death rates in bee populations. Declining bee health in Chile may consequently be related to neonicotinoids exposure. To assess this threat, honey samples collected from different regions in Chile were analyzed to quantify phenolic contents, antioxidant activity, and the presence of four neonicotinoids (i.e., thiamethoxam, thiacloprid, acetamiprid, and imidacloprid). Pesticide-free honey samples were also fortified with three concentrations of the four neonicotinoids to evaluate