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Identification of native bees through buzz recognition: An App for blueberry pollination in Chile

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The blueberry requires bees to vibrate its flowers for effective pollination, due to its specialized floral morphology with poricidal anthers. Both in Chile and in other countries, its management has been through *Apis mellifera* hives and *Bombus terrestris* colonies. However, although *B. terrestris* contributes to good yields in blueberries, its introduction has generated serious problems for native pollinators. *A. mellifera*, on the other hand, rarely uses blueberry flowers as a source of pollen due to its inability to vibrate. Our study showed the role of native bees that vibrate, in the pollination of blueberry, through the determination of pollination yield per visit (stigmatic pollen deposition), the frequency of visit and the presence of the vibration behavior of floral visitors, in five blueberry crops in south-central Chile. Some native vibrating bees identified were *Cadeguala occidentalis*, *Bombus dalhombii*, *Ruizantheda proxima*, *Callistochlora chloris*, *Colletes cyanescens*, *Centris cineraria*, among others. Despite these excellent results, the role of native bees that vibrate is still unknown to fruit growers and blueberry exporters in Chile. In this sense, another of our objectives of the study was to create an Application for cell phones (APP), which thanks to the typing of the buzzing of a bee could help the identification of the species, as well as provide information on its biology and ecology. For this, 518 audio samples of 15 bee species recorded during visits to blueberry blossoms in Chile were used, generating a prototype to be used on Android and IOS, which is currently being tested and is expected to help make native bees visible and their importance in the pollination of agricultural crops in Chile.