Genetic diversity and insecticide resistance of Myzus persicae (Hemiptera: Aphididae) populations from tobacco in Chile: Evidence for the existence of a single predominant clone

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The tobacco-feeding race of Myzus persicae (Sulzer), formerly known as M. nicotianae Blackman, was introduced into Chile during the last decade. In order to evaluate the genetic diversity and insecticide resistance status of Chilean tobacco aphid populations, a field survey was conducted in 35 tobacco fields covering a 300 km latitudinal survey. The populations sampled were characterized using microsatellite markers and morphometric multivariate analysis. Insecticide resistance levels were assessed through a microplate esterase assay and the mutation status of the kdr gene. All samples collected corresponded to the same anholocyclic aphid genotype, and showed morphological variation within the range expected for the tobacco-feeding race of M. persicae. Esterase activity showed the level and variability expected for an R1 clone lacking mutations in the sodium channels (susceptible kdr), thus corresponding to a type slightly resistant to organophosphate and carbamate, and susceptible to