

## **Climatic and Environmental Variables Do Not Affect the Diversity of Possible Phytoplasmic Vector Insects Associated with *Quercus humboldtii* Oak Trees in Bogota, Colombia**

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**Abstract :** Trees play an essential role in cities due to their ability to provide multiple ecosystem goods and services. Bogota trees are threatened by factors such as pests, pathogens, contamination, among others. Among the pathogens, phytoplasmas are a potential risk for urban trees, generating symptoms that affect the ecosystem services that these trees provide in Bogota, an example of this is the affectation of *Q. humboldtii* by phytoplasmas, these bacteria are transmitted for insects of the order Hemiptera, this is why the objective of this work was to know if the climatic variables (humidity, precipitation, and temperature) and environmental variables (PM10 and PM2.5) could be related to the distribution of the Oak *Quercus* entomofauna and specifically with the phytoplasma vector insects in Bogota. For this study, the sampling points were distributed in areas of the city with contrasting variables in two types of locations: parks and streets. A total of 68 trees were sampled in which the associated insects were collected using two methodologies: jameo and agitation traps. The results show that insects of the order Hemiptera were the most abundant, including a total of 1682 individuals represented by 29 morphotypes, within this order individuals from eight families were collected (Aphidae, Aradidae, Berytidae, Cicadellidae, Issidae, Membracidae, Miridae, and Psyllidae), finding as possible vectors the families Cicadellidae, Membracidae, and Psyllidae with 959, 8 and 14 individuals respectively. Within the Cicadellidae family, 21 morphotypes were found, being reported as vectors in the literature: *Amplicephalus*, *Exitianus atratus*, *Haldorus* sp., *Xestocephalus desertorum*, *Idiocerinae* sp., *Scaphytopius* sp., the Membracidae family was represented by two morphotypes and the Psyllidae by one. Results that suggest that there is no correlation between climatic and environmental variables with the diversity of insects associated with oak. Knowing the vector insects of phytoplasmas in oak trees will complete the pathosystem and generate effective vector control.

**Keywords :** vector insects, diversity, phytoplasmas, Cicadellidae

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