

## **DNA Based Identification of Insect Vectors for Zoonotic Diseases From District Faisalabad, Pakistan**

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**Abstract :** The success of Integrated vector management programmes mainly depends on the correct identification of insect vector species involved in vector borne diseases. Based on molecular data the most important insect species involved as vectors for Zoonotic diseases in Pakistan were identified. The precise and accurate identification of such type of organism is only possible through molecular based techniques like "DNA barcoding". Morphological species identification in insects at any life stage, is very challenging, therefore, DNA barcoding was used as a tool for rapid and accurate species identification in a wide variety of taxa across the globe and parallel studies revealed that DNA barcoding data can be effectively used in resolving taxonomic ambiguities, detection of cryptic diversity, invasion biology, description of new species etc. A comprehensive survey was carried out for the collection of insects (both adult and immature stages) in district Faisalabad, Pakistan and their DNA was extracted and mitochondrial cytochrome oxidase subunit I (COI-59) barcode sequences was used for molecular identification of immature and adult life stage. This preliminary research work opens new frontiers for developing sustainable insect vectors management programmes for saving lives of mankind from fatal diseases.

**Keywords :** zoonotic diseases, cytochrome oxidase, and insect vectors, COI

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