



“DNA Barcoding: a New Promising Tool for Biodiversity Conservation”

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Abstract:

The biological diversity of each country is a valuable and vulnerable natural resource. Sampling, identifying, and studying biological specimens are among the first steps toward protecting and benefiting from biodiversity.

DNA barcoding is a new technique that uses a short DNA sequence from a standardized position in the genome as a molecular diagnostic for species-level identification. Besides its initial taxonomic utility, DNA bar-coding can help to achieve many of the Millennium Development Goals (MDGs) and reach the objectives of the Convention on Biological Diversity (CBD) by controlling agricultural pests to lessen poverty and hunger (MDG 1), identifying disease vectors to combat disease (MDG 6) and environmental sustainability (MDG 7 and CBD) by sustaining natural resources, protecting endangered species, and monitoring environmental quality.

Many benefits could be gained by the Arab countries from joining the Consortium of the Barcode of Life (CBOL), including the ability to identify specimens quickly and cheaply, the better ability to control the movement of species across national borders, the opportunities for training local students and researchers, and the opportunities to improve the national research infrastructure of specimen collections, molecular biology labs and biodiversity databases.

Here, I will present the philosophical and methodological basics of DNA barcoding and explain how to participate in international DNA barcoding initiatives. I will also give some of the recent examples of the various applications of DNA barcoding in biodiversity conservation, including some of my own research on Afrotropical *Zaprionus* flies, new invaders of fruit orchards in the Middle East, and Andean *Schistocerca* locusts with different swarming capacities.