

Tephritid fruit flies (Diptera: Tephritidae) are considered by far the most important group of horticultural pests worldwide. In addition to causing tremendous economic losses, they can negatively impact commodity trade through restrictions to market access. This has huge implications on loss in revenues and limitations to developing horticulture and vegetable-based agroindustries. The Joint Food and Agriculture Organisation /International Atomic Energy Agency (FAO/IAEA) Programme on Nuclear Techniques in Food and Agriculture has been on the foreground in assisting Member States in developing and validating environment-friendly fruit fly suppression systems to support viable fresh fruit and vegetable production and export industries.

One of the major issues is the existence of species complexes among major fruit fly pests. The uncertain taxonomic status of some species is having important practical implications on the effective development of suppression systems, and the establishment of trade barriers. During a Consultants' Meeting organized by the IAEA, three complexes and a suspected complex were identified to be of significant importance. They were:

- *Anastrepha fraterculus*
- *Bactrocera cucurbitae* (suspected complex)
- *Bactrocera dorsalis*
- *Ceratitis* FAR complex (*C. fasciventris*, *C. anonae*, *C. rosa*)

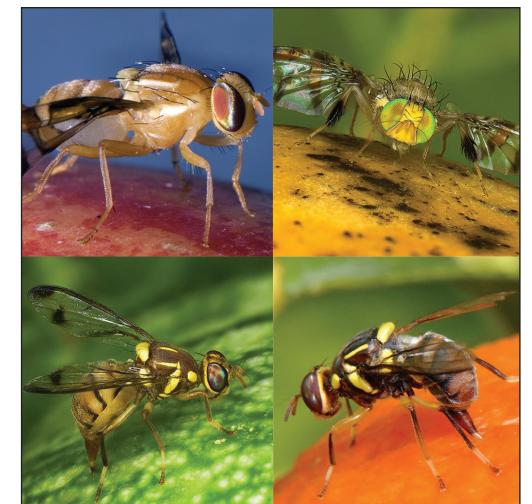
Based on this outcome, a FAO/IAEA Co-ordinated Research Project (CRP) on "Resolution of Cryptic Species Complexes of Tephritid Pests to Overcome Constraints to SIT Application and International Trade" was launched in 2010. When addressing the status for each of these complexes, an integrative taxonomic approach was followed, using multiple, independent lines of evidence to delimit the species boundaries. Over a six year period researchers from more than 20 countries looked at a wide range of different aspects of species delimitation for the priority complexes. This volume presents the result of this collaborative and integrated approach, and clearly demonstrates the advantage of combining efforts, expertise and team-working when addressing such a complex issue as species boundaries.



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RESOLUTION OF CRYPTIC SPECIES COMPLEXES OF TEPHRITID PESTS TO ENHANCE SIT APPLICATION AND FACILITATE INTERNATIONAL TRADE

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