OC257. Invasion of the fruit fly *Bactrocera dorsalis* (Tephritidae), with a focus on the Indian Ocean Islands, a threat to Europe

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The polyphagous oriental fruit fly *Bactrocera dorsalis,* originating from Asia, started its invasion of Subsaharan Africa 20 years ago. Since then, it has spread very rapidly in continental African countries and has reached the Indian Ocean, becoming the main fruit pest in most countries. Several studies have been conducted in order i) to decipher the origin of invasive populations and ii) to understand the success of this spectacular invasion using ecological and genomic approaches. This was particularly studied in the context of successive invasions of fruit flies on the island of Réunion. On this island, after the invasion of *B. dorsalis,* a shift in the host range, spatial distribution and climatic niches for the generalist resident species, such as *Bactrocera zonata, Ceratitis quilicii* and *Ceratitis capitata* was demonstrated. Furthermore, field observations and laboratory experiments suggested the existence of apparent competition between the two *Bactrocera's* species via the parasitoid *F. arisanus,* which would have increased and accelerated the displacement of *B. zonata.* Regarding the origin of the invasion, using genome-wide SNP data and a multipronged approach, two independent invasion pathways were deciphered. A western pathway involving the migration of *B. dorsalis* from the east African coast into the Comoros, Mayotte and Madagascar. The Mascarene islands (Réunion and Mauritius) were colonized directly from Asia and formed a distinct cluster. The invasive population observed in the Mascarenes seems to have a greater impact on the resident species and on agriculture, so more attention should be paid to prevent any further spread of this new invader.

Keywords: *Bactrocera dorsalis*, competitive displacement, NGS analysis, genetic structuring,La Réunion, *Bactrocera zonata*