Syrophiidae (hoverflies) is a diverse group with >6000 species worldwide. Adults are often important pollinators, and predatory larvae of some species are used to control insect pests.

Current morphological identification tools are insufficient to identify all Afrotropical hoverflies and for many species only one of the sexes is known. Yet, reliable species identification is crucial to investigate the role of hoverflies in pollination networks, plant-insect interactions and pest control. Here, we present a DNA-barcoding reference database that will assist in species identification of Afrotropical hoverflies.

Since 2012 we have been sampling hoverflies throughout the African continent (Fig. 1). Specimens (>5000) are either pinned or stored in absolute ethanol and vouchered in the entomological collections of the Royal Museum for Central Africa (RMCA).

As far as possible, specimens were identified using external morphology. A selection of the specimens were barcoded.

Barcode gap detection was done using the R-package Spider.

Overall, the reference database currently comprises around 2700 DNA barcodes and the database is still improved by adding barcodes of other research teams (see acknowledgements).

The database covers 357 (60% of the) nominal species over 46 (80% of the) genera (with species coverage per genus 25-80%).

Subfamily Syrphinae
- 932 barcodes from 105 species out of 176 nominal species.
- No barcode gap in some of the genera (e.g. Betasyrphus).

Subfamily Microdontinae
- 54 barcodes from 20 species out of 48 nominal species.
- Distinct barcode gap in all genera.

Subfamily Eristalinae
- 1705 barcodes from 230 sampled species out of 342 nominal species.
- No barcode gap in several of the genera (e.g. Syrtillo)

This study shows that DNA barcoding is a helpful tool in many genera of Afrotropical Syrphidae. Yet, in some genera there is no clear barcode gap and these genera will require a taxonomic revision.