



Sandfly diversity and speciation using high resolution melt analysis

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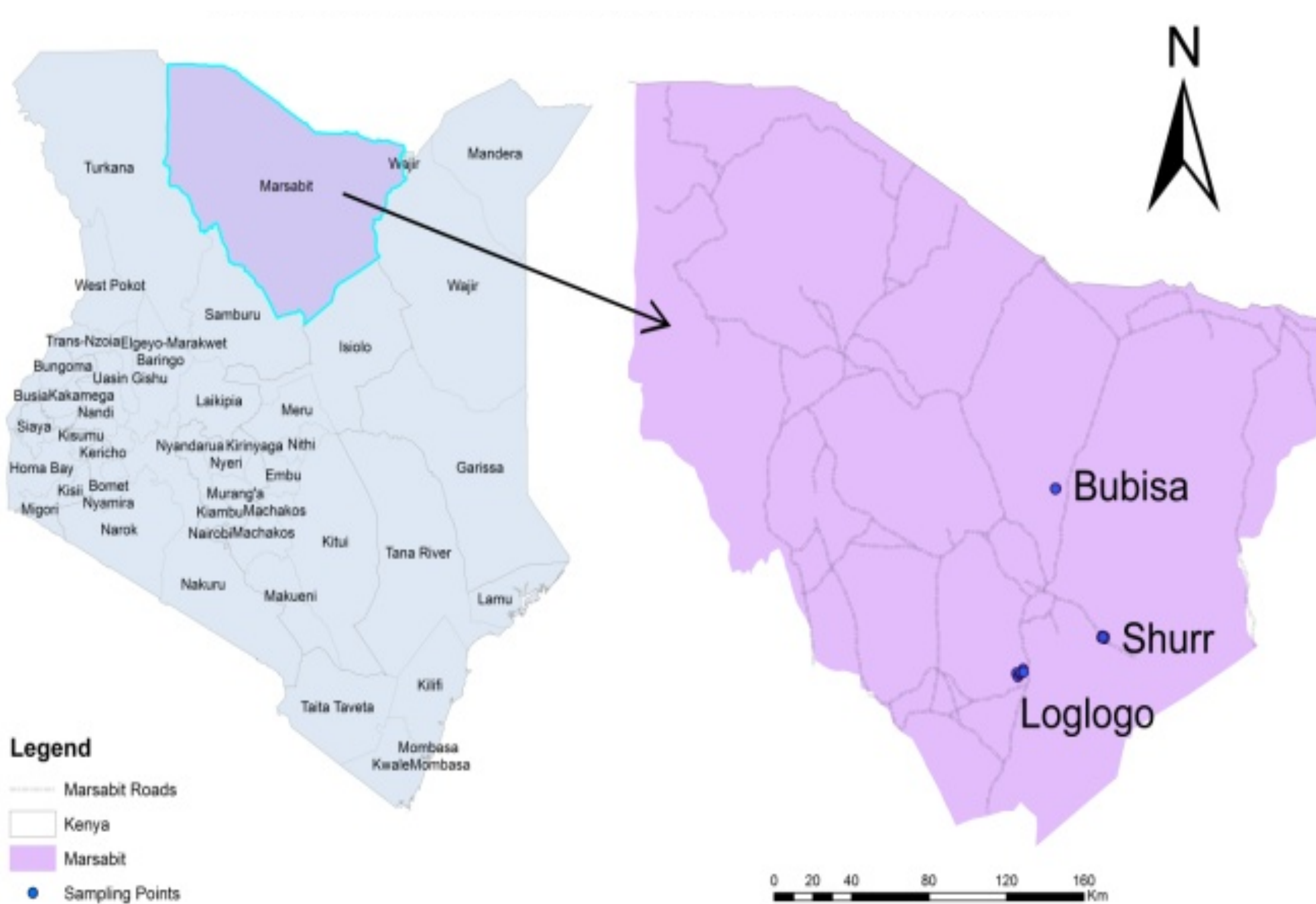
INTRODUCTION

Visceral leishmaniasis (VL) (also known as kala-azar), is of public health concern in Kenya. Phlebotomine sandflies are the proven vectors of VL. Accurate knowledge of sandfly species diversity and identification is fundamental in understanding the epidemiology of leishmaniasis and vector control in endemic areas. Morphological characteristics are the gold standards used in identifying sandfly species, which often is difficult and requires taxonomic expertise. Here, we explore the suitability of high resolution melt (HRM) analysis as a method for identifying various sandfly species collected from Marsabit County, northern Kenya.

OBJECTIVES

- To determine sandfly species distribution in Marsabit County, northern Kenya.
- To validate the suitability of high resolution melt analysis in identifying sandflies.

METHODS



Map showing vector sampling sites in Marsabit County.

Sandfly trapping using CDC-LT and sticky papers



Trapped sandflies



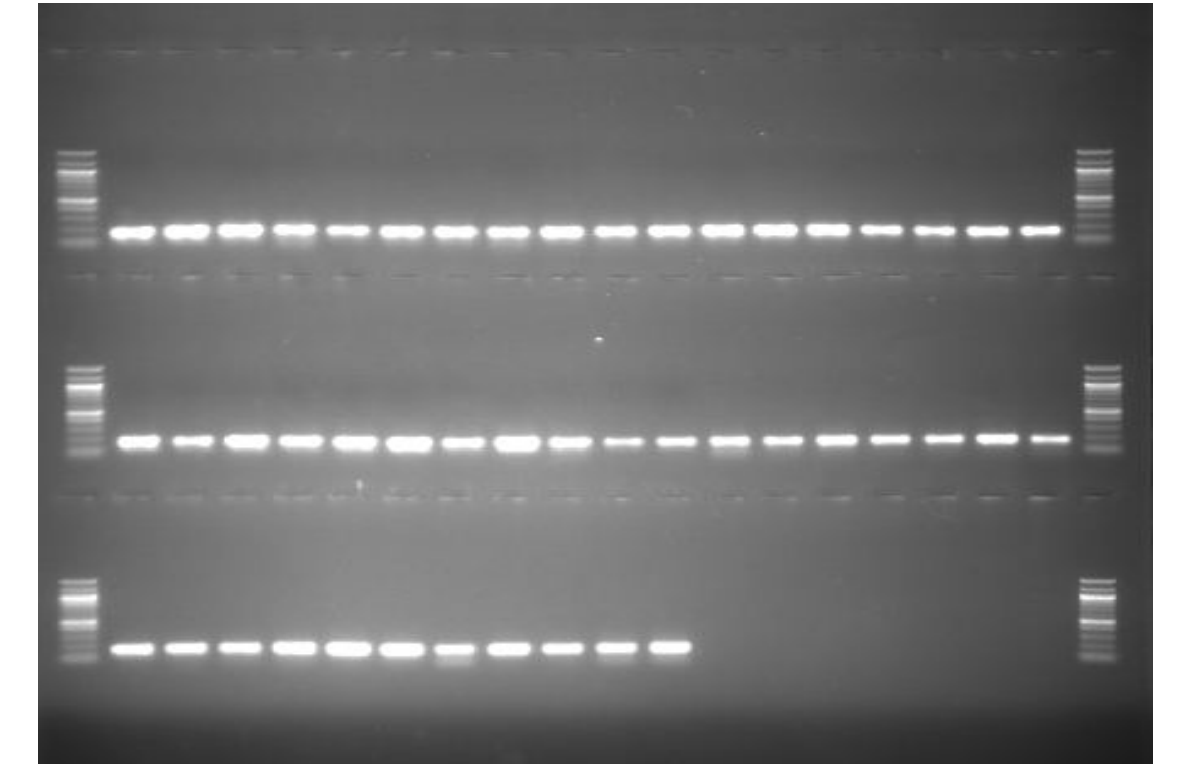
Morphological identification



Sandfly cleaning

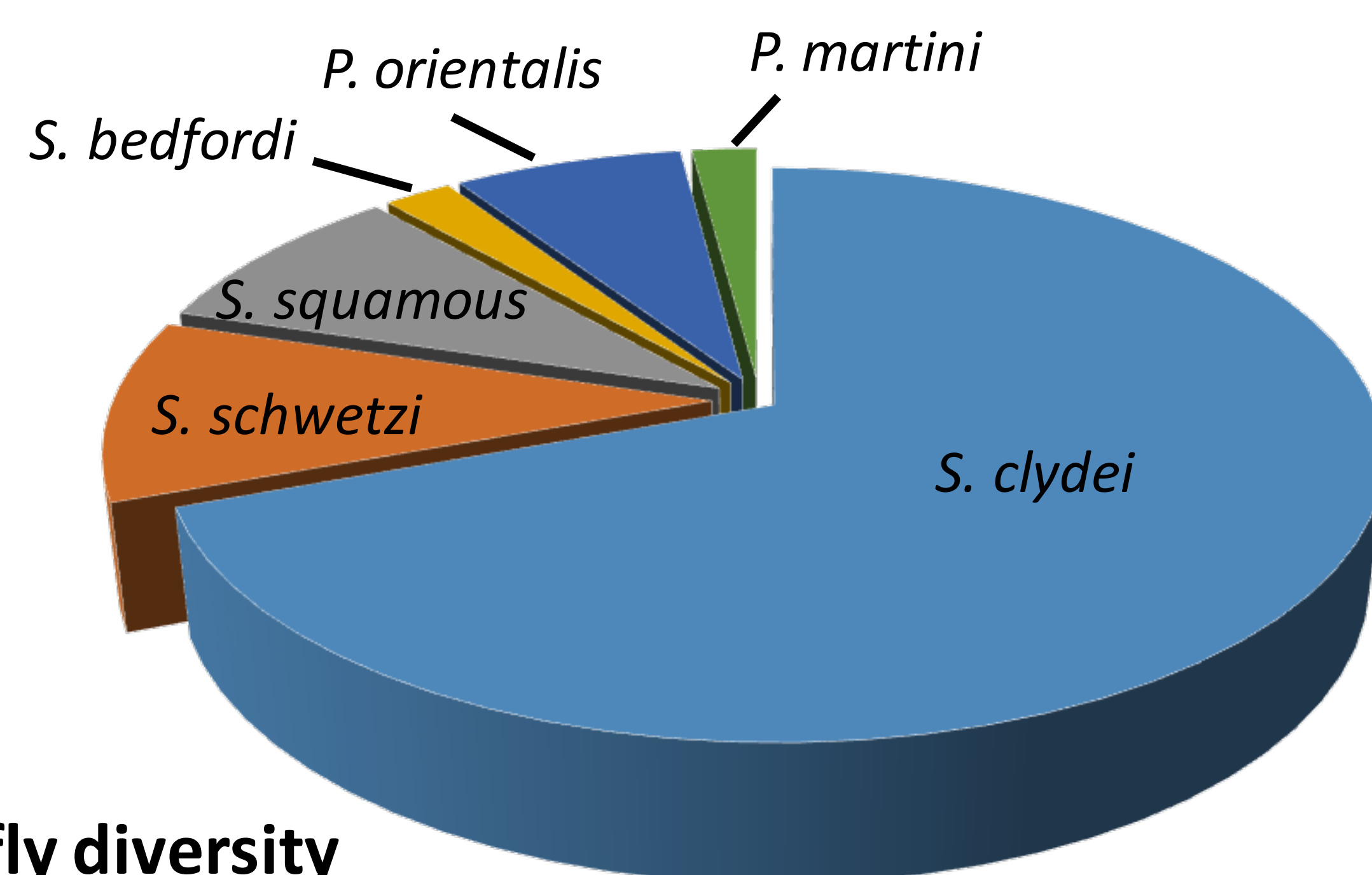


COI amplification

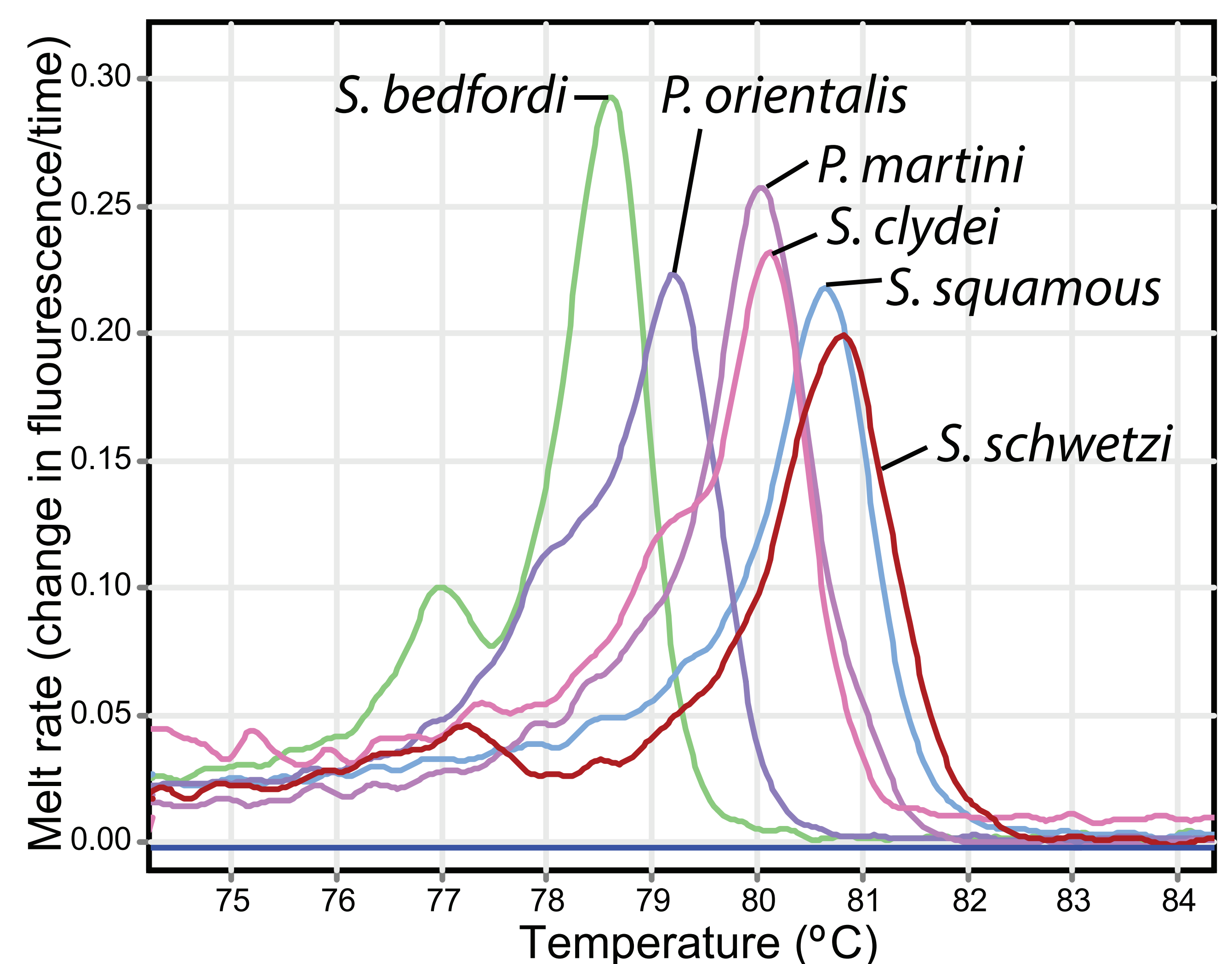


RESULTS

- We collected a total of 2500 sandflies from Loglogo, Bubisa, and Shurr using both CDC light trap and sticky papers.
- We identified six distinct sandfly species morphologically.
- We identified *P. martini* and *P. orientalis* as the possible vectors of VL in Marsabit County.
- Various sandfly species were distinctly profiled using HRM.



Sandfly diversity



HRM profiles of the sandfly species

CONCLUSIONS

- This study documents the first report of occurrence of *P. orientalis* and *P. martini* sandfly species in Marsabit County, which could be the main drivers of VL in the area.
- HRM can be used to profile the various species of sandflies.

ACKNOWLEDGEMENT

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