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Spatio-temporal cluster alarms of city resident tsetse fly (*Glossina species*) in Ibadan, Southwestern Nigeria, 1996-1999: Trend implications

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Statement of the Problem: Tsetse fly (*Glossina species*), the biological transmitter of African Trypanosoma species, the causative agent of trypanosomosis, a disease of major animal and human health importance with high constraint to livestock production and sleeping sickness in West Africa. The purpose of this study was to assess cluster alarms of tsetse fly on the University of Ibadan campus and environs during 1996-1999.

Orientation: Data on tsetse fly caught, their population density and trypanosome infection rates were collated from records of biconical, Nitse traps and handnets purposively set to monitor tsetse flies at livestock farms, botanical and zoological gardens, classroom areas, human residential quarters on campus and Ibadan city environs, South-Western Nigeria, January 1996 to December 1999. Site names of trap points were converted to map points using handheld GPS and Google Earth Pro(R). Data gathered were analyzed on spatio-temporal scan statistics; with significance set at 0.05 Geographic maps were designed on ArcGIS 10.1 environment.

Findings: Spatial cluster alarms of tsetse fly with significant African Trypanosomosis infection were identified in proximal areas of rivers, with *Glossina palpalis* infection at 0.5 km radius each in March-April, 1996, May-June, 1998 and April-May, 1999, respectively. The high relative density of tsetse flies around rivers on campus was an environmental risk factor associated with trypanosomosis distribution pattern.

Significance: This article presents geographic maps of *Glossina species* cluster alarms within the University of Ibadan campus and environs describing its impact on transmission of trypanosomosis to farm and zoo animals. Biconical trap has significant effect on capturing *Glossina palpalis* and its relative density.

Recommendation: We recommend quarterly survey of *Glossina palpalis* and *Glossina tachinoides* for their early detection in peri-domestic environment towards effective framework for their control in South-Western Nigeria, enabling economically sustainable livestock production and safer environment for humans in rapidly urbanizing Nigeria.

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