

BULINUS SPECIES AND PREVALENCE OF SCHISTOSOMIASIS IN RIPARIAN POPULATIONS OF BENIN AQUATIC ENVIRONMENTS**E. Alabi^{1,2}, A. Chabi Do^{1,2}, J. Nougbo², Halfane Lehmane², B. Ohin³, F. Baba - Moussa³, M. Sezonlin¹, L. Baba - Moussa²**

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ABSTRACT

Schistosomiasis remains a major public health concern in Benin, where *Bulinus* species serve as the intermediate hosts responsible for parasite transmission. Understanding their spatial distribution and ecological preferences is essential for improving disease control strategies. This study aimed to characterize the geographical distribution of *Bulinus* populations and to evaluate the influence of selected biotic and abiotic factors on their abundance and infection status. Between 2022 and 2023, *Bulinus* snails were collected from lake and riverine ecosystems in southern Benin. Three species were identified morphologically and molecularly: *Bulinus globosus*, *Bulinus forskalii*, and *Bulinus truncatus*. The non-parametric Kruskal-Wallis test and generalized linear models (GLMs) were applied to examine the effects of environmental indicators on both the number of collected snails and the proportion releasing cercariae.

A total of 407 *Bulinus* specimens were recorded. Statistical analyses revealed that both species and locality significantly influenced snail abundance and infection rates. Linear regression analysis indicated that several environmental parameters affected the spatial distribution of *Bulinus* populations across the study area. All three species were found to release schistosome cercariae, confirming their epidemiological importance in urinary schistosomiasis transmission.

The findings highlight a heterogeneous distribution of *Bulinus* species and their infection potential in southern Benin. Establishing an integrated ecological and molecular surveillance system is urgently needed to monitor transmission dynamics and guide effective schistosomiasis control strategies.

Keywords: *Bulinus snails*, Schistosomiasis, distribution, physico-chemical parameters, Benin.