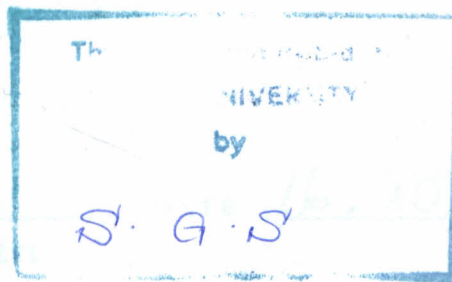


**ASSESSMENT OF CHIRONOMUS (DIPTERA: CHIRONOMIDAE)
LARVAL HEAD DEFORMITIES AS POSSIBLE BIOINDICATORS
FOR POLLUTANTS IN SEDIMENTS OF RIVER NZOIA, KENYA.**

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ABSTRACT

The study examined the morphological changes in benthic populations of midges resulting from pollution stresses along River Nzoia. 10,116 headparts of chironomids from 8 sites along River Nzoia were investigated for deformities. The fleshy part of the head was removed by Potassium Hydroxide (KOH) and fixed on slides with Euparal[®] for examination under a microscope at 400X magnification.

Results showed that there were more deformities in Webuye, with 69.81% of the examined menta deformed, followed by Shibale 29.54%, Mumias 26.28%, Delta 24.79%, Moisbridge 2 & 1 with 28.31% and 22.38% respectively. The control site on Mt. Elgon had the least menta deformities of 8.82%. Webuye also had the highest mandible deformities, with 36.75% deformed followed by Mumias (12.92%) while there were no mandible deformities at the Mt. Elgon control site. The antennae showed greatest deformities at Moisbridge 2 (13.43%) and the lowest at the control site on Mt. Elgon, where 2.86% of the antennae examined were deformed.

There was a high prevalence of deformities in the tripartite teeth at all sites. For example, in Kitale, outer median (OM) and central median (CM) had 3.26% and 3.94% deformities, followed by the fourth outer lateral tooth (OL₄) 4.69% for heads with at least one deformity. Absence, bluntness, asymmetry and shortness in menta teeth as bioindicators were more common in all sampled sites than other parameters monitored, with the highest frequency occurring for bluntness (13.84%) followed by asymmetry (6.42%), and shortness (4.53%) for Webuye site. The least bioindicator in frequency at this site was extra teeth.