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SMALL RESERVOIR WATER QUALITY MONITORING IN MZINGWANE CATCHMENT (ZIMBABWE) FOR DOMESTIC, LIVESTOCK AND IRRIGATION USE.

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Abstract
Pollution of small reservoirs is a major environmental and health concern in rural areas. A study was conducted to determine the effects of temporal and spatial variation in small reservoir water quality in Mzingwane catchment. Water samples were collected from four reservoirs, three small reservoirs Sifinini, Avoca, and Bova, and from one medium sized reservoir Siwaze, which was the control. The water samples were collected in March and April to monitor the physical, chemical and biological water quality for irrigation, livestock and domestic use. The replicate samples for each dam were analysed for pH, $N0_3$, EC, Hardness, total faecal streptococci, E.Coli and faecal streptococci. All the four dams had high pH (8.47 to 10.78), and high $N0_3$ (60.55 $mgl^{-1}$to 79.67 mgl^{-1}) concentration compared to the WHO livestock and irrigation guidelines of (5.5 to 8.3 and 6.5 to pH 8.4. respectively) and the WHO drinking water guidelines of (50mgl^{-1}) respectively, however the $N0_3$ concentration were lower than the WHO livestock guidelines (100 mgl^{-1}). The water in all four dams was soft and within the conductivity range of the specified guidelines. There was a positive faecal coliform count in all the four dams indicating that the water comes into contact in plant and animal life. It was concluded that pollution of the small reservoirs was mainly due to non point sources, and a more reflective water quality analysis should be done during in the dry season when there is little or no dilution effects from rainfall, this period also coincides with high water demand.

Key words, small reservoirs, water quality, temporal and spatial