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Presence and viability of V. Cholerae in the waters of rural Bangladesh (Matlab area)

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We utilize a portable flow cytometer, which allows for absolute counts of particle concentration, along with specific staining to analyze the waters of the rural area of Matlab, Bangladesh, where cholera is endemic, in the month of January 2012. Such period is interepidemic, as conditions for V. cholerae survival are less apt, because of low temperature; the presence of the bacterium in surface waters of inland reservoirs is debated and has been acknowledged rarely in literature. The hydrologic system is composed by a river and a succession of ponds; the latter constitute the basic water reservoir of each human community. We run a survey of each possible habitat to understand whether local reservoirs can host V. cholerae populations in interepidemic periods, which contrasts the common hypothesis which assumes that bacteria are brought inland by coastal water intrusion. We also analyze the relation of bacteria survival with environmental quantities and the variations in bacterial community structure in different samples.