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Smith, D. L., Dushoff, J., & Morris, J. G. (2005). Agricultural Antibiotics and Human Health. *PLoS.Med*, 2.

We studied the spatial-temporal dynamics of non-O1 *Vibrio cholerae* numbers at a stabilization pond treatment plant. This bacterium's seasonal dynamics were the inverse of those of fecal coliforms, with high levels in hot periods and low levels in cold periods. Stabilization pond treatment did not significantly reduce non-O1 *V. cholerae* numbers between the system's inflow and outflow points. In contrast, fecal coliforms were reduced by 98.95% in hot periods and by 94.91% in cold periods. Significant rho coefficient values for the Spearman correlation between numbers of non-O1 *V. cholerae* and temperature and pH of 0.91 and 0.76 respectively, were found at the system's outflow point. An experimental study of the effects of pH, temperature, and sunlight on the survival of non-O1 *V. cholerae* and fecal coliforms confirmed the inverse behaviour of the two bacterial groups noted in the stabilization ponds. Alkaline pH values of 8 and 8.8 promoted the survival of non-O1 *V. cholerae* and inhibited that of *Escherichia coli*. Low temperatures (8 degrees C) prolonged *E. coli* survival ($k = 0.002/h$), while a temperature of 23 degrees C reduced it markedly ($k = 0.022/h$). Non-O1 *V. cholerae* did not survive as well as *E. coli* at 8 degrees C ($k = 0.009/h$). The effect of temperature on non-O1 *V. cholerae* appeared to be closely linked to nutrient levels. Non-O1 *V. cholerae* appeared to be less sensitive to sunlight than *E. coli* whose survival was markedly reduced particularly during summer periods. Non-O1 *V. cholerae* and *E. coli* did not behave in the same way in water subjected to stabilization pond treatment. The use of fecal coliforms as an indicator of the potential health hazard of the effluent may not be adequate for this treatment procedure

[Mezrioui N](#), [Oufdou K](#), [Baleux B](#).

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1832 - The result was epidemics of *cholera*. In Paris in 1832, 20000 people died of *cholera*. Around the world, the combination of piped water and open sewers has consistently led to outbreaks of *cholera*. To solve this problem, engineers designed closed sewer systems ...The result was epidemics of *cholera*. In Paris in 1832, 20000 people died of *cholera*. Around the world, the combination of piped water and open sewers has consistently led to outbreaks of *cholera*. To solve this problem, engineers designed closed sewer systems, pipes using water as the vehicle for carrying away excrement. This solution engendered a debate among engineers: some wanted to return *sewage* to agricultural land, others argued that "water purifies itself " and wanted to ...

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