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5. The effect of zinc metal on antibiotic resistances of bacteria in a tributary of the Enoree River in Upstate South Carolina.
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CAMPBELL, ROBERT¹, KRISTI JAMES¹, and MIN-KEN LIAO¹. Furman University – The effect of zinc metal on antibiotic resistances of bacteria in a tributary of the Enoree River in Upstate South Carolina.

Previous studies have shown a correlation between heavy-metal -resistance and antibiotic-resistance in bacteria. The present study was set up to determine if this pattern is followed in a tributary of the Enoree River in upstate South Carolina where a high concentration of zinc was detected due to a spill from a local galvanizing plant in 1985. Water samples were taken from two sample sites in the contaminated tributary, while a control sample was taken from an uncontaminated tributary. It is believed that the samples from the zinc-contaminated sites will have a higher percentage of antibiotic-resistant bacteria when compared to the bacteria found in the uncontaminated tributary. Two hundred bacterial colonies were isolated from each site, and their resistance to tetracycline and ampicillin was tested. The antibiotic-resistant bacterial isolates will be identified using the BIOLOG identification system. Identification of these isolates will help us determine how the antibiotic-resistant trait is acquired. The antibiotic-resistant patterns of these isolates will be determined using the Kirby-Bauer disk method, and the minimal inhibitory concentrations will also be determined. Currently in our collection, we have a total of five antibiotic-resistant bacteria from one of the contaminated sites and three from the second site. All of the isolates show multi-antibiotic resistance.