

HAGAN, ANDREW, LILY PHAM, KRISTI JAMES, AND MIN-KEN LIAO. Furman University-Isolation and characterization of antibiotic resistant *Escherichia coli* in freshwater streams in Upstate South Carolina.

Bacteria are important indicators of water quality as they pose important public health concerns for recreational and drinking water. In this study, we attempt to detect the presence of antibiotic-resistant *Escherichia coli* in stream within the Enoree and Saluda River drainage of the upstate of South Carolina. Antibiotic-resistant bacteria and antibiotics are often discharged in the environment as a result of the use of antibiotics in medical, veterinary, and agricultural practices. River waters are often the receptacle for these pollutants, since they receive the sewage of urban effluents. The existence of antibiotic resistant bacteria in water, therefore, becomes a major health concern. Stream samples were taken from various sites along the Enoree and Saluda Rivers and in Broad Mouth and Cornonaca Creeks. We isolated 36 *E. coli* strains. All the isolates were subjected to seven different antibiotics, including kanamycin (30 mg), streptomycin (10 mg), novobiocin (30 mg), erythromycin (15 mg), neomycin (30 mg), chloramphenicol (30 mg), and tetracycline (30 mg). The Kirby-Bauer disc method was used to determine the antibiotic susceptibility of these isolates. Preliminary results indicate that four isolates exhibit intermediate resistance to streptomycin (10 mg), eight intermediate resistance to tetracycline (30 mg), and two resistance to tetracycline (30 mg). For each isolate that exhibits resistance, we will determine the minimal concentration of the antibiotic required to inhibiting its growth. No bacterial isolate in our study showed multiple-drug resistance.