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Antibiotics are routinely used as growth promoters in livestock where they help animals gain weight faster or use less food to gain weight. Since any use of antibiotics is known to increase antibiotic resistance we wanted to see if an increase in antibiotic resistance organisms could be detected using simple microbiological techniques, with an eye toward using this in an introductory microbiology lab course. Saliva samples were taken weekly from an isolated group of cattle before and after the addition of a chlortetracycline containing feed supplement to their diet. Samples were serially diluted and plated onto TSA and TSA + tetracycline agar plates. Antibiotic resistant bacteria were isolated from day 1 and their numbers remained relatively consistent throughout the trial. The proportion of antibiotic resistant organisms increased markedly following the addition of the medicated supplement. Potential applications in a microbiology course will be discussed.