NICOLE POWELL, SARA REYNOLDS Dept of Natural and Physical Sciences, Shepherd University, Shepherdstown, WV, 25443, and, Dept of Natural and Physical Sciences, Shepherd University, Shepherdstown, WV, 25755. Isolation and Characterization of Bacterial Contamination in Echinacea Supplements.

Echinacea supplements are sold commercially at most pharmacies and grocery stores in the United States, advertised by labels stating they may boost immunity and kill infectious microbes. An initial study was conducted to test claims of echinacea's antibacterial properties. Echinacea capsules, made from the aerial components of Coneflowers, were purchased from a local Pharmacy, dissolved in water, and pipetted into wells of TSA streaked with bacteria. To our surprise, we found unexpected bacterial growth in 14% of the 57 echinacea capsules tested. Eleven species have been isolated and cultivated for identification so far. Most species have been presumptively identified as members of the endospore-forming genus *Bacillus*. A search of existing literature found no studies conducted on the presence of bacterial contamination in echinacea products. However, another student in this lab found similar contamination from echinacea oil purchased from a different supplier, suggesting that future studies are needed to determine how widespread this kind of contamination is. This research illuminates the consequences of an unregulated dietary supplement industry. The presence of even harmless *Bacillus* species in commercially available products suggests improper processing protocols that do not kill endospore-forming bacteria. The current preparation of these echinacea capsules accepts the potential for pathogenic endospore-formers to make their way onto shelves to be sold and consumed.