
ISOLATION OF ESSENTIAL OILS FROM INDIGENOUS MONTANA FLORA AND THEIR ANTIMICROBIAL EFFECTIVENESS AS A NON-TOXIC STERILIZING REAGENT AGAINST BACTERIA THAT CAUSE FOOD BORNE ILLNESS.

Samantha Miner, Montana Tech- Undergraduate Research Program, Montana Tech of the University of Montana, Butte MT. 59701

Bacterial resistance and the negative effects of chemicals used to kill them have become a growing worldwide public health concern. The widespread use of antibiotics in medicine and Animal husbandry have caused bacteria adaptation to antibiotics. New drug discovery has become vital in fighting the war against drug-resistant bacteria such as *Escherichia coli*, *Staphylococcus aureus*, and *Salmonella epidermis*, which have posed considerable medical problems. Essential oils are a safe, generally non-toxic and relatively inexpensive alternative to synthetic chemical based antibiotics. Essential oils hydro-distilled from indigenous Montana flora will be explored for their antimicrobial effectiveness as a non-toxic sterilizing reagent against bacteria. We hypothesis that the oils of *Lomatium dissectum*, *Arctostaphylos uva-ursi* (L.), *Chimaphila umbellate* (L.), W. Bart *Prunella vulgaris* L , *Artemisia dracunculus* L, Spreng *Medicago lupulina* L., and *Balsamorhiza sagittata* will have significant anti-bacterial properties and variability that works to reduce bacterium's resistance.