

Objectives

By the end of this lab, students will be able to

- Define bioprospecting and provide examples of products created through bioprospecting.
- Define the following: biofuel, feedstock, cellulase, and hydrolysis.
- Describe what must be done to cellulose in order to change it into something that can be converted into a biofuel through fermentation.
- Explain and defend the reasons for using cellulose as a feedstock for ethanol.
- Explain how bioprospecting is important to developing renewable sources of fuel
- Demonstrate the proper technique for acquiring a sterile sample of a microbial population
- Demonstrate the proper procedure for setting up a sterile sample of cellulose paper in a test tube.
- Properly mix a media solution to enable microbial growth in a test tube.
- Properly inoculate a test tube with a microbial population.
- Make observations on and record the effectiveness of different inoculated microbial populations.
- Predict, test, analyze, and justify the effectiveness of different microbial populations at producing useful enzymes for use in processing cellulosic feedstocks for fermentation into ethanol.