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Tannins are a group of compounds called polyphenols that bind to proteins. Tannins are plant's natural defense against insects as they are toxic to many insect and animal species if ingested. When tannins are present in a body of water, they reduce the level of dissolved oxygen, which can be detrimental to many native species in ponds, lakes, and streams. Microbial degradation of tannins has been found mainly in the guts of species that naturally feed on leaves of plants with high tannin levels, such as the koala bear. Our research objective was to determine if the microorganisms present in freshwater systems increase the rate of tannin degradation. If so, this would suggest that bacteria capable of breaking down tannins are present in the water. We tested this by examining the change in water tannin concentration and dissolved oxygen over a two-week period for five different treatments: tap water, unfiltered pond water, and water filtered with glass fiber filters with different pore sizes, including 2.7, 1.6, and 0.7 microns. Microbial cells can range from 0.2 to 10 microns in size which is why we chose various pore sizes for our treatments. This variance in pore size will allow us to control of the proportions and size of bacteria that are in the solutions. All treatments were replicated four times. We added dissolved tannic acid to achieve an initial concentration of 8mg/L tannins in each replicate. We also included two tap water replicates with no tannic acid added to serve as controls. Water samples and dissolved oxygen measurements were taken every 2-3 days for two weeks, and tannin levels were measured in each water sample using a spectrophotometer.