

CWSF 2016 - Montreal, Quebec



Rebecca Lewis

Enzymatic Hydrolysis by Decomposers

Challenge: Environment

Category: Senior

Region: Cape Breton

City: Sydney, NS

School: Riverview High School

Abstract: Cellulosic Ethanol can remedy declining fossil fuels; decreasing landfills can reduce GHG's. This project combined both aspects. However, instead of growing unnecessary cellulose feedstocks of switchgrass, landfill wastes (wood, compost, garden, paper) were utilized. Also, harmful industrial enzymes that hydrolyze cellulose were replaced with natural ones extracted from King Oyster mushrooms. The result was an ecological conversion of cellulose biomass to Cellulosic Ethanol using decomposers.

Biography

Last year I had the privilege of attending CWSF hosted in Fredericton, so I'm thrilled to get a second opportunity, especially because of this year's destination. After graduation, I'd like to attend McGill University and focus on studies that will eventually lead to my dream of becoming a cardiac surgeon. Being in Montreal, and on campus at McGill is very motivating and inspiring to me. Other interests include V-8 engines, volleyball, snowmobiling, singing and playing guitar with my band. The inspiration for my project came from noticing a "Flex Fuel System" symbol inside the trunk of my car. Not knowing what it meant, I researched the topic. The information on environmental biofuels was intriguing and I used it as my project's foundation. However, instead of using industry's Cellulase enzymes, I isolated and extracted my own proteins and enzymes from King Oyster mushrooms. It required a lot of time and hard work, but I'm proud of my end result, and for the opportunity to represent my home town of Sydney, Cape Breton. I hope to continue to evolve my project so that I may attend CWSF next year too. My advice to other students is build your projects around your interests.

Awards

Value

Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$2 000