

CWSF 2010 - Peterborough, Ontario



Zach Elgood

Methane Production and Removal in a Denitrifying Streambed

Division: Health Sciences

Category: Intermediate

Region: Waterloo-Wellington

City: New Hamburg, ON

School: Cameron Heights C.I.

Abstract: Denitrifying bioreactors are efficient methods of removing surface water nitrate in agricultural areas. Possible side effects include greenhouse gas production. This study demonstrates a method for limiting methane emissions (up to 73%) from a stream-bed bioreactor. Additional research is required to optimize reactor design and determine the microbial processes occurring. Increasing usage of bioreactors requires technologies to minimize greenhouse gas emissions.

Biography

Zach Elgood is a 16 year old, grade 10, student attending Cameron Heights Colligate Institute. He is enrolled in the International Baccalaureate program and enjoys all types of scientific inquiry, while also having a passion for ancient history. He participates in a variety of school activities, including debate, math and science clubs, DECA (a business club) and a variety of music ensembles. In 2007 and 2008, he attended the Canada Wide Science and Engineering Fair, where he won awards in physical and environmental science. In 2009, Zach was a member of Team Canada at the International Science and Engineering Fair where he was awarded a third place grand award in Environmental Management. Most recently, he was awarded a gold medal at ISWEEP 2010. In his spare time, he enjoys reading and writing, traveling, karate, nature walks and the trampoline.

Awards

Value

The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
Bronze Medal - Earth & Environmental Sciences - Intermediate Sponsor: Suncor Energy Inc.	\$300
Total	\$1 300