John Burns Duynisveld

Are There Differences in How Lettuce Genotypes Respond to Light Sources?

Challenge: Resources
Category: Intermediate
Region: Chignecto East
City: Wallace, NS
School: Pugwash District High School

Abstract: The effect of lettuce genotype and lighting source was studied. Five genotypes of lettuce were planted under either LED or fluorescent lights. There were significant genotype by light source interactions noted in 25 day leaf counts and leaf size. There were significant colour differences in the leaves. There were interesting trends in chlorophyll levels. Lettuce genotypes perform differently under fluorescent and LED light sources.

Biography
I'm John Burns Duynisveld. I'm in grade 10 at Pugwash District High School, where my favorite subjects are math and science. This is my 3rd CWSF, and I am very much looking forward to CWSF 2015! In the winter, I curl and ski. In the summer, I golf and run. I enjoy music and video games year round. I have been a 4-H member for 7 years, taking a variety of projects, up to provincial level. After high school, I plan to study to be research scientist.

Awards

<table>
<thead>
<tr>
<th>Award</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellence Award - Intermediate - Bronze Medal</td>
<td></td>
</tr>
<tr>
<td>Sponsor: Youth Science Canada</td>
<td></td>
</tr>
<tr>
<td>Western University Scholarship</td>
<td>$1,000</td>
</tr>
<tr>
<td>Bronze Medallist - $1000 Entrance Scholarship</td>
<td></td>
</tr>
<tr>
<td>Sponsor: Western University</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$1,000</td>
</tr>
</tbody>
</table>

Youth Science Canada
1550 Kingston Road. Suite 213
Pickering ON L1V 1C3
www.youthscience.ca / info@youthscience.ca
416-341-0040
Caitlyn Sandluck

Can We Prepare? Altering Innate Behaviour & Preparing for Invasive Fish Species

**Challenge:** Environment  
**Category:** Senior  
**Region:** Chignecto East  
**City:** Thorburn, NS  
**School:** North Nova Education Centre  
**Abstract:** My project is based on my theory that a watershed could be prepared for the arrival of an invasive species. I over-stimulated the aggressive behaviours of male better fish to prove that innate behaviours can be altered to fit the circumstances that arise. By proving that these behaviours can be changed I have added more depth and potential to my theory that could save species.

**Awards**

<table>
<thead>
<tr>
<th>Awards</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellence Award - Senior - Bronze Medal</td>
<td></td>
</tr>
<tr>
<td>Sponsor: Youth Science Canada</td>
<td></td>
</tr>
<tr>
<td>University of Ottawa Entrance Scholarship</td>
<td>$1,000</td>
</tr>
<tr>
<td>Senior Bronze Medallist - $1000 Entrance Scholarship</td>
<td></td>
</tr>
<tr>
<td>Sponsor: University of Ottawa</td>
<td></td>
</tr>
<tr>
<td>Western University Scholarship</td>
<td>$1,000</td>
</tr>
<tr>
<td>Bronze Medallist - $1000 Entrance Scholarship</td>
<td></td>
</tr>
<tr>
<td>Sponsor: Western University</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$2,000</td>
</tr>
</tbody>
</table>

**Biography**

Hi, my name is Caitlyn Sandluck. I am a grade 12 student at North Nova Education Centre in New Glasgow, Nova Scotia. I am a hard working student athlete and I spending most of my time outdoors. I spend a lot of my time exercising, playing recreational sports and fishing around my home province; as I have a keen interest in aquatic environments and species. My career goal is to become a marine biologist and I will be continue in pursuit of my goal next year by attending the University of Guelph to take a Bsc in Marine and Freshwater Biology.
James Lees

Close Encounters of the Fourth Kind

Challenge: Discovery
Category: Senior
Region: Chignecto East
City: Merigomish, NS
School: Northumberland Regional High School

Abstract: The manipulation of an ionized plasma using electromagnetic fields is crucial to the creation of nuclear fusion in a man-made reactor. Electromagnetic fields manipulate charged particles within the plasma, making it electromagnetically susceptible. Using varying strengths of solenoids, the effect of magnetic fields on light intensity was determined. It was found that polarity of the solenoids had a major effect on the intensity of light.

Awards

<table>
<thead>
<tr>
<th>Award</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellence Award - Senior - Bronze Medal</td>
<td></td>
</tr>
<tr>
<td>Sponsor: Youth Science Canada</td>
<td></td>
</tr>
<tr>
<td>University of Ottawa Entrance Scholarship</td>
<td>$1,000</td>
</tr>
<tr>
<td>Senior Bronze Medallist - $1000 Entrance Scholarship</td>
<td></td>
</tr>
<tr>
<td>Sponsor: University of Ottawa</td>
<td></td>
</tr>
<tr>
<td>Western University Scholarship</td>
<td>$1,000</td>
</tr>
<tr>
<td>Bronze Medallist - $1000 Entrance Scholarship</td>
<td></td>
</tr>
<tr>
<td>Sponsor: Western University</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$2,000</td>
</tr>
</tbody>
</table>

Biography

I’m James G. Lees, a long time participant in science fairs both regional and national, my projects having a particular interest with nuclear fusion. For the past three out of four years of my attendance at the CWSF my projects have included exploration of x-rays to create fusion, the design of a fusion reactor, and most recently the manipulation of a plasma with solenoids. I was inspired to research into this most intriguing field when I learned of the immense benefits of harnessing the energy of the sun, right here at home on planet Earth. Did you know that using fusion one 240mL glass of seawater can produce nearly 500,000 barrels of petroleum worth of energy? The usage creation of a nuclear fusion reactor would provide humanity with a completely clean, efficient, and sustainable means of creating energy, something of which we are in dire need. I hope that in the near future I might be able to construct a prototype of my fusion reactor, to better determine its feasibility, and possibly become one of the first sustainable fusion reactors in history.
Maria Duynisveld

Eggs-aming the Connection Between Foraging Behavior and Egg Characteristics

Challenge: Resources
Category: Junior
Region: Chignecto East
City: Wallace, NS
School: Pugwash District High School
Abstract: Does laying hen foraging behavior affect egg characteristics on pasture?
Foraging behavior and egg traits from two laying hen strains on pasture and indoors were studied. Different strains’ albumens reacted differently to environments. Foraging behaviors and environment affected yolk colour. Hen behaviors changed over a year. This shows a strain-diet interaction with albumens, learned foraging behavior, and that eggs are affected by grazing behavior.

Awards

<table>
<thead>
<tr>
<th>Awards</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-H Canada Award - Junior</td>
<td>$500</td>
</tr>
<tr>
<td>Excellence Award - Junior - Gold Medal</td>
<td>$250</td>
</tr>
<tr>
<td>Western University Scholarship</td>
<td>$4000</td>
</tr>
<tr>
<td>Gold Medallist - $4000 Entrance Scholarship</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$4750</td>
</tr>
</tbody>
</table>

Youth Science Canada
1550 Kingston Road. Suite 213
Pickering ON L1V 1C3
www.youthscience.ca / info@youthscience.ca
416-341-0040

Biography

My name is Maria Duynisveld. I am 14 years old and a Grade 8 student at Pugwash District High School in Pugwash, Nova Scotia. I am an editor on the Yearbook Committee, a member of 4-H, and am on the volleyball, basketball, cross-country running, curling, and track and field teams. I run on school and club track teams, and participate in 5Ks on my own. I enjoy reading and spending time on my family's farm. I also like to write, poetry especially. This year, I performed an experiment on the effects of laying hen foraging on egg characteristics. The previous year, I observed laying hen behaviour for differences between breeds, but I came short of making the Provincial team. I drew on the experience of my previous project for this year's, and hope to continue on this subject.
Every fall, Youth Science Canada calls on youth across the country to take up the challenge of doing a science project. More than half a million will do a project this school year and about 25,000 of these will compete in one of 100 regional science fairs held across Canada this winter and spring.

Along the way, these youth develop research, communication and presentation skills; they learn to ideate and innovate; and they learn how they can have an impact on the world. They do all of this while having fun engaging in hands-on science, challenging themselves and making amazing new friends.

As March is Youth Science Month, we invite schools, teachers, students, and families to join us in celebrating the imagination, initiative and innovation of Canada’s young scientists by visiting their local science fair. To find the fair closest to where you live visit youthscience.ca and click on Find Your Fair.

Come and be amazed by what the next generation is accomplishing!

Q. From your experience, why do you feel it is important for women to get involved with science and technology?

VP – It is important for women to get involved with science and technology to establish a scientific community of diverse thinkers. This will expand the way in which science is studied and applied. In my experience, I was initially hesitant to become a Public Health Inspector (PHI) because I wasn’t sure I could fit the “profile” of being one. I was worried I wouldn’t be able to keep up in a career that involved science, and law enforcement; two disciplines that you wouldn’t normally see women in. I got into this field to help change this view. Don’t be fearful of what you want to do in life, and know that there is no “profile” in doing a particular job, or career.

Q. What first drew you to your pursuit in the sciences?

AT – There were so many contributions that led to my pursuit of science – Owl Magazine’s Dr. Zed, my grade school class projects and science fairs, an excellent high school chemistry teacher and my grade 12 science fair experience. I still have a distinct memory of taking my HUGE trophy home on the Go Train the night I won. The thought never crossed my mind that I couldn’t pursue a career in the sciences.

Q. What are some of the best skills you developed through participating in science fairs?

VP – Science fairs taught me to not be afraid to ask the tough questions. Instead of just asking “why”, ask, “why not?”, one that I like to ask is, “Why should we care?”, being curious and asking questions. If you are able to articulate scientific research to someone who may not be in sciences, or is in a different research field, you will be surprised how far this can take you.

Q. Were there any challenges along the way?

AT – More scholarships were definitely needed in this area throughout my experience as a student. Securing lab time was an ongoing concern through my research. Having non-science parents didn’t stop me at all. Their appreciation of taking me to science centres along with other things we did together just made science normal for me.

Q. Do you have any advice for young women interested in science and technology?

VP – Don’t be afraid to find ways to follow your scientific passions. Keep an open mind, be persistent, and have confidence in yourself. Young women have the capacity to change the way science and technology is studied and applied in real life, but in order for this to happen, they have to pursue it.
Are your students learning Smarter Science?

Smarter Science is a framework for K-12 science teaching and learning and developing the skills of inquiry, creativity, and innovation in any curriculum unit. Students in Smarter Science classrooms learn to do science - not just talk about it - by questioning and investigating. Smarter Science is used by thousands of teachers in every grade, who are engaging their students in real science.

Smarter Science workshops prepare teachers to successfully implement scientific inquiry in their classroom. Our team has trained teachers from coast to coast - in English and French. We currently offer three full-day workshops.

To book a workshop, call our toll-free number: 866-341-0040

Youth Science Month - Serious Fun!

Youth Science Month is published each March by Youth Science Canada for Canadian educators. Youth Science Canada exists so Canadian youth are engaged through science in inquiry and critical thinking. To learn more about our programs, visit youthscience.ca

Canada-Wide Science Fair 2014 Platinum Award Winners

A week-long national event each May, the Canada-Wide Science Fair (CWSF) brings together 500 top young scientists from grades 7-12 (Secondary I and Cégep in Quebec) from across the country to compete for nearly $1 million in cash, scholarships and exclusive science opportunities. These finalists are selected at the 100 regional science fairs across the country, mostly in March and April, leading up to the national competition.

Below are profiles of the three Platinum Award winners at CWSF 2014 held in Windsor, Ontario.

For more information on CWSF 2015 in Fredericton, New Brunswick, May 11-16, visit cwsf.youthscience.ca.

Au rythme de l’haptique

Thomas Imbeault-Nepton is a 13-year-old from St-Honore, QC whose project aimed to improve the quality of life for individuals suffering from Parkinson’s disease. Thomas made this possible through a vibration system, similar to the common auditory system but with less constraints.

Thomas won a gold medal and the Platinum Award for Best Junior Project at the 2014 Canada-Wide Science Fair in Windsor. He also won the Junior Health – Challenge Award and an entrance scholarship to Western University and the University of Windsor.

The Time-Integral of Distance: Uncovering A New Property of Fundamental Physics

The Time-Integral of Distance: Uncovering A New Property of Fundamental Physics

Dan McInnis, a 16-year-old from Ottawa, ON, developed a low-budget 3D scanner that is a valid option for making comfortable prosthetic limbs that are aesthetically accurate for the users wearing them.

In 2011, Dan won a Gold Medal and a Platinum Award for Best Junior Project at the Canada-Wide Science Fair. For this project, Dan won his second Gold Excellence Medal and the Best Project Award along with the Manning Innovation Achievement Award, the senior level Innovation - Challenge Award and entrance scholarships to Dalhouse University, the University of British Columbia, the University of Manitoba, the University of Ottawa, Western University and the University of Windsor.

Maya Burhanpurkar is a 15-year-old from Oro-Medonte, ON. Her project marks the discovery of a new fundamental property of physics, specifically the time-integral of distance.

Maya was already a Canada-Wide Science Fair Platinum Award winner, for her project at the CWSF 2012 in Charlottetown. She won her second gold medal and Platinum Award for Best Intermediate Project in Windsor along with The Actuarial Foundation of Canada Award and the Discover – Challenge Award at the intermediate level. Maya also won an entrance scholarship to Western University and the University of Windsor.

Picture This!: A Novel Approach to Limb Donor Identification & Prosthetic Design

Daniel McInnis, a 16-year-old from Ottawa, ON, developed a low-budget 3D scanner that is a valid option for making comfortable prosthetic limbs that are aesthetically accurate for the users wearing them.

In 2011, Daniel won a Gold Medal and a Platinum Award for Best Junior Project at the Canada-Wide Science Fair. For this project, Daniel won his second Gold Excellence Medal and the Best Project Award along with the Manning Innovation Achievement Award, the senior level Innovation - Challenge Award and entrance scholarships to Dalhouse University, the University of British Columbia, the University of Manitoba, the University of Ottawa, Western University and the University of Windsor.

Maya Burhanpurkar is a 15-year-old from Oro-Medonte, ON. Her project marks the discovery of a new fundamental property of physics, specifically the time-integral of distance.

Maya was already a Canada-Wide Science Fair Platinum Award winner, for her project at the CWSF 2012 in Charlottetown. She won her second gold medal and Platinum Award for Best Intermediate Project in Windsor along with The Actuarial Foundation of Canada Award and the Discover – Challenge Award at the intermediate level. Maya also won an entrance scholarship to Western University and the University of Windsor.

Canada-Wide Science Fair 2014 Platinum Award Winners

A week-long national event each May, the Canada-Wide Science Fair (CWSF) brings together 500 top young scientists from grades 7-12 (Secondary I and Cégep in Quebec) from across the country to compete for nearly $1 million in cash, scholarships and exclusive science opportunities. These finalists are selected at the 100 regional science fairs across the country, mostly in March and April, leading up to the national competition.

Below are profiles of the three Platinum Award winners at CWSF 2014 held in Windsor, Ontario.

For more information on CWSF 2015 in Fredericton, New Brunswick, May 11-16, visit cwsf.youthscience.ca.