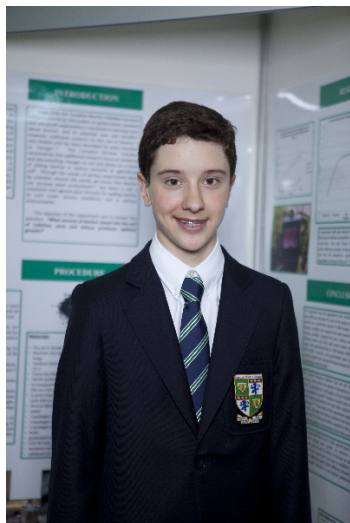


## CWSF 2013 - Lethbridge, Alberta



### Nathan Kuehne

#### Biochar Optimization for Plant Growth

**Challenge:** Resources

**Category:** Intermediate

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** Glenlyon Norfolk School

**Abstract:** Radishes, lettuce and peas were grown in varying proportions of biochar amended soil (0%, 10%, 30%, 50%) in order to determine the best growing conditions. Results indicated that radishes, lettuce and peas prefer 30%, 10% and 0% biochar, respectively. These results show that plant growth is dependent on pH, related to phosphorous availability in the soil. Implications for agricultural practice and commercialization are given.

#### Biography

I live in Victoria, British Columbia, and have attended Glenlyon Norfolk School since kindergarten. My interests include piano, Ukrainian dance, languages, tennis and basketball. I have received awards for academic achievement, public speaking and dance. My life-long interest is space and engineering, and I have attended summer camps in Europe, the United States and Canada that focused on language development and space. The inspiration for my project came from a conversation with my parents, both of whom are avid gardeners. Our family has used charcoal to amend soil used for growing fruits and vegetables, but with mixed results because the optimal proportions were unknown. Curious about this question, I pursued the scientific literature, and found no clear answer, so I decided to do my own study on the topic! I would definitely enjoy doing another science fair project to either expand on the findings of this experiment, or pursue another scientific unknown. My advice to students thinking about doing a project is: absolutely, go for it! Although it can be great deal of work, once you are done, and you have the opportunity to present your work, it is all worthwhile and you will have learned so much!

#### Awards

#### Value

Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	\$300
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$2 300</b>