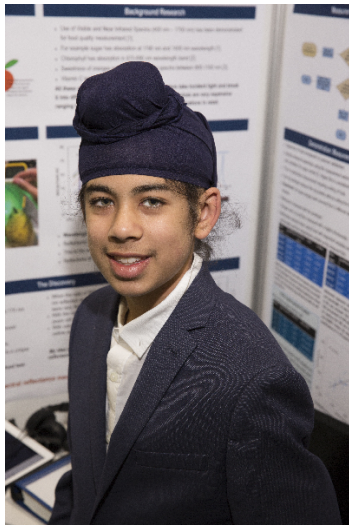


# CWSF 2019 - Fredericton, New Brunswick



## Hardit Singh

### FoodSpec ? A Multispectral Detector for Non-Destructive Testing of Food

**Challenge:** Innovation

**Category:** Junior

**Region:** Waterloo-Wellington

**City:** Waterloo, ON

**School:** Centennial P.S.

**Abstract:** Food waste is a major issue facing retailers today with over 30% of produce wasted due to spoilage and rot. This project proposed and developed an innovative low cost multi-spectral sensor using light absorption at different wavelengths to predict shelf life. This allows for quantitative non-destructive testing of produce allowing retailers to manage their inventory and reduce spoilage. The prototype costs 1/100th of commercial spectrometers.

#### Biography

My name is Hardit Singh and I am a grade 7 student from Centennial Public School, Waterloo, Ontario. My passions include programming, engineering, mathematics, sports and caring for the environment. I have attended University of Waterloo engineering design days for two years interacting with first year engineering students. I have learnt so much from the inspiring professors and students there. I enjoy playing squash, tennis, cricket, and soccer. In the winters, I love going out for cross country skiing with my family. Currently I am a Leader of the Science Council at my school and help teach students several stem lessons including use of Arduino. In this summer to extend my knowledge, I will be joining second year students in the University of Waterloo prototyping course and will use the knowledge to improve my prototype. While doing the project, I learned that patience is key in Science and you fail many times before you succeed. My advice to someone starting a project is that ten hours in library saves hundred hours in laboratory. If we look closely around us, there are many problems that need ingenious solutions waiting for our creativity and everything is interesting if you go deep enough.

#### Awards

#### Value

Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 000