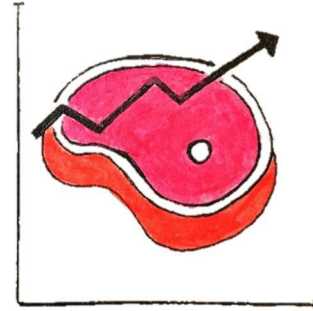


Change Your Diet, Change the Climate

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Abstract

Meat consumption contributes to climate change due to the high amount of greenhouse gases it produces as well as the large amount of land and resources it consumes. We decided to address this issue for our research-informed and negotiated action project by researching the environmental impacts of meat consumption, conducting a small study to learn about the dietary habits of Cawthra Park Secondary School students and educating our peers on our findings by providing them with accessible meat-free alternatives. Even though a minority of Cawthra students reported being

vegetarian, vegan or pescatarian, a substantial number of students said that they would be willing to reduce their meat consumption. We decided to encourage our peers to gradually reduce how much meat they eat. We did this by informing them on how eating meat impacts the environment, creating a vegetarian cookbook, preparing a meal plan filled with quick and easy recipes and proposing the concept of a Meatless Monday in our school's cafeteria as well as an increased selection of vegetarian/vegan lunch options.

Introduction

One possible solution we have in the fight against climate change lies in our dietary lifestyles. As mentioned earlier, meat consumption is one of the leading causes of climate change for a number of reasons including the amount of greenhouse gases an animal releases, and the large amount of resources and land used to produce meat. Firstly, raising livestock produces high amounts of greenhouse gases. The two most significant greenhouse gases that are emitted while raising livestock are carbon dioxide and methane. An abundance of these gases in the

atmosphere traps heat and increases global temperatures which leads to climate change. One kilogram of beef is equivalent to 27 kilograms of CO₂ emissions, which is the equivalent to driving a car for 101 km. In addition, cows produce 150 billion gallons of methane per day, which is a greenhouse gas that has 23 times more global warming potential than carbon dioxide over a 20-year time frame. Research lead by scientists at Oxford Martin School concluded that a widespread adoption of a vegetarian diet would cut greenhouse gas emissions by

63% (Harvey, 2016). Secondly, raising cows for consumption and corporate profit is one of the leading causes of deforestation, which is another issue related to meat consumption. For example, cattle ranching accounts for 80% of the rainforest deforestation in the Amazon (“Cattle ranching in the Amazon region”, 2018). This is a serious issue because forests act as a carbon sink which means they trap and store carbon dioxide. The world’s forests absorb 40% of all man-made carbon dioxide annually (Gray, 2011). However, when trees are cut down, this seriously compromises our carbon sinks, which enhances the greenhouse gas effect. Finally, raising animals for food

tends to be immensely resource intensive because animal feed requires a significant amount of water to produce. For example, cows eat a water intensive soy-based feed.

As a result, it takes approximately 2,498 litres of water to produce 1 hamburger (Hallock, 2014). That’s the equivalent of one month of daily showers. Ultimately, climate change is a serious issue that affects the entire planet. It has numerous consequences such as extreme weather, drought, flooding, species extinction, famine and economic instability. This is our planet and it is up to us to preserve it to the best of our ability.

Focus of the Study

The focus of our study was to determine how many students at Cawthra Park were already vegetarian/vegan or wanted to become vegetarians/vegans. Our sample size was 27 students who chose to participate in an online survey administered through Survey Monkey™. Our survey included various types of questions that would allow us to collect

data, analyze it and learn about our peers’ dietary habits. A particular question that we focused on was the number of students that were willing to become vegetarians/vegans.

The Results of our Study

Our data is analyzed in the following two Figures. Our sample size is 27 students, which we understand to be small and biased sample, and more students would

need to be surveyed to make our results more reliable. Please note that the Y-axis shows percentages, and not the actual number of students.

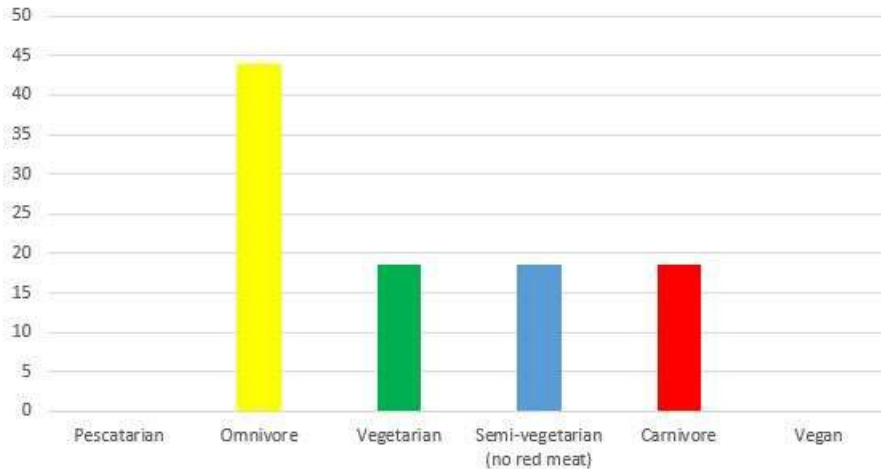


Figure 1: This graph describes the dietary lifestyles of students that were surveyed. Options included: pescatarian, omnivore, vegetarian, semi-vegetarian (no red mean), carnivore and vegan options.

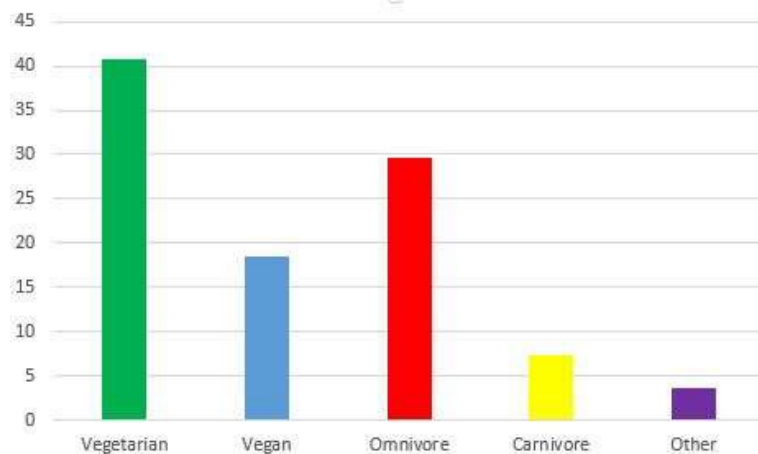


Figure 2: This graph describes the number of students that are willing to change their dietary habits. For example, about 40% of students said they are willing to become vegetarian.

Summary and Interpretation of Results

The data revealed that the majority of Cawthra Park students surveyed eat meat on a regular basis with only 18% percent of students reporting that they eat a vegetarian/vegan diet. This was not surprising because meat forms a large part of the diet of many Canadians, however we

did find it concerning due to the detrimental environmental impacts of the animal agriculture industry on climate change. The reason for these statistics could be due to the fact that vegetarian/vegan food options may not be as accessible as standard omnivorous

meals and they tend to be more expensive. In our school's cafeteria for example, hamburgers and chicken tenders are featured as a lunch special whereas vegetarian/vegan options are rarely advertised. However, we found it encouraging that over half of students

surveyed (about 58%) were willing to switch to a vegetarian or vegan diet. This means that many students are aware that eating meat has negative consequences on the wellbeing of individuals, societies and the environment and they are open to changing their dietary habits.

Take Action

After conducting our study, we found that even though a minority of Cawthra Park students reported being vegetarian or vegan, many students said that they were willing to reduce their meat consumption. For our action, we educated our classmates and peers on the environmental impacts of their dietary habits and made meat free alternatives more accessible. First, we created eye-catching, informative posters about how eating meat impacts the environment so that students would think twice about the dietary choices they make. Knowledge is power, so by making students aware of how eating meat impacts the environment, they are more likely to change their dietary habits in order to better the health of the planet and their own well-being. Second, in order to make meatless meals

more accessible for our peers, we created a vegetarian/vegan cookbook filled with delicious recipes that are quick and easy to make. We also created a 7-day vegetarian meal plan to help them to get started. Additionally, we proposed the concept of a Meatless Monday in Cawthra's cafeteria where vegetarian/vegan lunch specials would be advertised and students would be encouraged to bring a meatless lunch to school. The event would be advertised through the use of posters and announcements. Overall, our take action was successful because we were able to educate our peers on how their diet impacts the environment and provide them with practical steps they could take to reduce their meat consumption in order to better the health of the planet

Conclusion

In conclusion, we are pleased with our researched-informed and negotiated action project because we were able to expand our knowledge in regard to how our diets contribute to climate change, share our findings with our peers and provide them with accessible meat-free alternatives in order to make a positive impact on the well-being of the

environment. In comparison to other science projects that we have completed in the past, this one stood out because in addition to doing research about climate change, we were empowered with the opportunity to make a tangible difference in the health of our planet.



Figure 3: This is a photo of our poster board that we created to share our learning during a carousel-style in-class presentation.

References

Fiala, N. (2009, February). How Meat Contributes to Global Warming. Retrieved April 16, 2018, from <https://www.scientificamerican.com/article/the-greenhouse-hamburger/>

Gray, L. (2011, August 18). World's forests absorb almost 40 per cent of man made CO₂. Retrieved April 21, 2018, from <https://www.telegraph.co.uk/news/earth/earthnews/8708979/Worlds-forests-absorb-almost-40-per-cent-of-man-made-CO2.html>

Hallock, B. (2014, January 27). To make a burger, first you need 660 gallons of water ... Retrieved April 29, 2018, from <http://www.latimes.com/food/dailydish/la-dd-gallons-of-water-to-make-a-burger-20140124-story.html>

Harvey, F. (2016, March 21). Eat less meat to avoid dangerous global warming, scientists say. Retrieved April 16, 2018, from <https://www.theguardian.com/environment/2016/mar/21/eat-less-meat-vegetarianism-dangerous-global-warming>

Magill, B. (2016, April 20). Studies Show Link Between Red Meat and Climate Change. Retrieved April 16, 2018, from <http://www.climatecentral.org/news/studies-link-red-meat-and-climate-change-20264>

Matthews, C. (2006, November 29). Livestock a major threat to environment. Retrieved April 16, 2018, from <http://www.fao.org/newsroom/en/news/2006/1000448/index.html>

Cattleranching in the Amazon Region. Yale School of Forestry and Environmental Studies (2018). Retrieved April 16, 2018 from: <https://globalforestatlas.yale.edu/amazon/land-use/cattle-ranching>