SEVENTH EDITION

OUR TIMES

Food and Hunger in the World

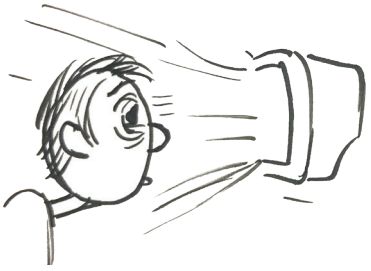
A PUBLICATION OF THE SHARON ACADEMY MIDDLE SCHOOL

Silly Rabbit, Ads are for Kids! How Advertising Influences Children

Beatrice Raiken

Imagine turning on the TV and seeing Bernie the Broccoli telling kids to eat healthy or Taylor Swift endorsing kiwi. Sounds crazy? Well, by today's standard it is; advertising geared towards children is all about getting them to pester their parents to buy soft drinks, chips and other snacks that are high in sugar, fat and salt. Most of these foods are produced by companies like Pepsico, Coca Cola, and Kellogg's big brands that own a large portion of the food industry. Few are whole grain or organic, and none are fruits or vegetables. Children as young as preschool age are influenced by ads, everywhere from the TV to the supermarket, and even in some public schools. Children are seeing a lot of advertising on television. Children ages two to twelve see 38 minutes of TV advertising a day and half of that time is food advertising, which means that children are seeing 19 minutes of food advertising per day (Encyclopedia on Early Childhood Development). This exposure to TV and advertisements is important because researchers have found that, "Obesity in children increases the more hours they watch television" (American Psychological Association). How does the way food is advertised to children influence their health?

Television is not the only way children are exposed to food ads. Junk food ads are also in many public schools. For instance, some school fund-raisers sell name brand chips and candies. Schools give out fast food coupons as a reward for reading, and ads are even put on buses and score boards. In 2009, advertisers spent $150 million dollars on ads in schools (Food Marketing Workgroup). While many see this as poor quality education since it surrounds kids with ads in school, there are people who think that schools create a motivation to learn with a reward like coupons, candy, or chips. Schools should use healthy rewards instead of junk food but since unhealthy food companies have most of the advertising money, that would be hard to do.



Celebrity endorsement also affects children and teens because they see these people as role models and they want to

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About This Newsletter

The students at The Sharon Academy Middle School have spent the last several months studying food and hunger on a local, national, and global level as a part of the school's integrated curriculum. Each student researched specific issues relating to food and hunger that interested them individually and compiled what they learned in this newsletter. This collection of articles is intended to educate our community about the intricacies of this important topic from different perspectives. Just as researching these articles has informed our students about food and hunger, and encouraged them to examine more deeply the choices they make about food, we hope this newsletter will help you to do the same.

To learn more about The Sharon Academy Middle School and its innovative integrated curriculum, *please see the back cover.*

This newsletter is dedicated in memory of Linda Blakeman, friend and parent of The Sharon Academy Middle School, and is produced with generous support by Dartmouth Printing.

Good Food Gone Bad?

Daygon Lashway and Donald Mabbott

Quite literally, GMO foods are changing the way the world eats. In 2002, the film, *Fed Up!* was made, looking at the downside of industrial farming. This documentary exposes the shocking consequences of increased pesticide use, Genetically Modified Foods, and the impact that this kind of farming has on other countries.

Fed Up!, directed by Angelo Sacerdote for Wholesome Goodness Productions, discusses the history of agriculture in the U.S. from the end of WWII to the present. It includes the Green Revolution during which the United States produced an excess of food to help feed third world countries. In order to do that, the United States introduced the use of pesticides, herbicides and fertilizers for farmers' use.

The industrialized farm industry uses toxic chemicals, which creates an unfair competition between large and small farms. Modern pesticides originated when World War II ended and there were a lot of chemical plants left over. Some of these factories produced nerve gas for the war, so when they transitioned to pesticides, they just changed the toxicity levels to kill insects instead of humans. These chemicals worked best on large-scale farms. For a small farm to be successful, it must have a wide variety of crops, which can be very expensive. In other words, this was not beneficial for small farms. Producing a large quantity of rice or wheat, for example, forces out other food crops and limits agricultural diversity. So, small (multi-culture) farms are pushed out by large monoculture farms because large farms grow one crop, and use pesticides. Pesticides are harmful to the environment and they remain in the soil for a very long time. As our science around farms has improved since WWII many of these chemicals have been banned. Without access to these chemicals and the necessary land, the battle between large and small-scale farms would not exist. "Large-scale, monoculture farms that have thousands of acres pay about $21.40 per acre to produce a crop, while a small, diversified farm of about ten acres cost about $1,960 an acre to produce a crop" (Sacerdote). Large agricultural businesses stay in the black and charge what they want, whereas small farms close because they can't keep their prices low. This competition between monoculture and multi-culture farms has escalated with the introduction of Genetically Modified Organisms into the farming industry.

> "In the 1990s, 60% of Canada's canola, 90% of Argentina's soybeans, 50% of the U.S.'s soybeans, and 33% of the U.S.'s corn was all genetically modified"

Genetically Modified Organisms (GMOs), are organisms in which the DNA has been changed so that it can either grow faster, produce more, or both. According to the documentary, GMO foods are bad for the environment, and lead to genetic pollution, chemical pesticide drift—usually between farms—allergies, and a loss of control of the organisms. GMOs make it cheaper for big organizations and companies to buy and to sell food. Their ability to grow more, faster, and have more money for distribution, give bigger, wealthier companies a financial edge. Other countries that don't pay their farmers well, force them to use their land to grow crops for these big corporations and organizations. Furthermore, the biotech companies that produce these strains, have no legal responsibility for the reduction of small farms, or what the big farms do. One strain of GMO corn kills monarch butterflies, their larva, and any other insect with an alkaline in their system. Now, there are even weeds that are resistant to herbicide and insects resistant to pesticide. Basically, when DNA is taken from one organism and attached to another, it changes it. "Genetic engineering is a term used to describe biotechnological methods used by scientists to directly manipulate an organism's genome" (Harvard University). Consumers have been concerned about GMO products being improperly labeled ever since the FDA substantially deregulated GMOs in 1992. If there is an outbreak of E. Coli or Salmonella, for example, labels can warn a consumer This new genetic engineering and a lack of regulation has impacted other countries as well.

The battle between major food corporations who use GMOs and pesticides is not fought just here in The States. Food is cheaper to produce in other countries because many cultures have more available land, and working farms that already produce cash crops. "Farmers in different countries, like India and Mexico are growing GMO foods for America" (Sacerdote). The citizens of these countries are often forced to take jobs picking crops for big corporations—instead of working their own land—just to make enough money for their families to survive. Corporate employment and cheap crops puts local farmers, land, and businesses at risk. Not only is this arrangement dangerous for the environment, the companies are only in it for the profit, and care very little about the welfare of the land or the people. Additionally, these companies do not pay their farmers a living wage. The farmers think that they're getting a good deal, but they're not. The film went on to suggest that in the end, these farmers barely get enough money, food, or water to keep their families alive—often just enough to hang n. The impact on wages, therefore, can be measured in harvesting percentages of cash crops, at home, and on foreign soil. "In the 1990s, 60% of

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Fair Trade vs Free Trade

Silvia Hale

Are consumers willing to pay a bit more money for their food, knowing that the workers have good working conditions and make a living wage? Or would they rather pay a bit less knowing that the workers are exposed to toxic chemicals and struggle to support their families with what they get paid? These are some of the central issues in the debate between fair trade versus free trade.

Fair trade is a social movement that promotes sustainable farming. By using fair-trade practices, farmers and workers in developing countries can make a living wage and work in a safe environment. Whereas, free trade is an economic policy that eliminates taxes on imports and exports to encourage trade between countries. "In the 19th century, trade was considered the engine of national economic growth" (Adams 3). Trade was really good because it encouraged different countries to interact with each other. The world did not embrace free trade until after 1945 because of the World Wars and the Great Depression (Adams 3). Fair-trade practices started about 60 years ago, when people saw some humanitarian and environmental issues arising from free trade. Fair-trade companies focus on providing good working conditions and reasonable pay. While most fair-trade companies started off small, over the last two decades they have become increasingly popular. Now many have grown into non-governmental and for-profit organizations, who lobby the government for fair-trade practices (Adams 3-4)

> **"Keep in mind that you can create change through your buying choices."**

Farmers all over the world prefer fair trade over free trade. This makes sense because they want to make enough money to support their families and use organic, sustainable farming practices. "National Farmers Union supports a fair trade system that protects the economic well-being, health and environmental concerns, working conditions, and labour rights of our country's producers as well as producers in other countries" (Stencel 1). In other words, as long as workers are treated well, earn fair wages, and are safe, then farmers in developing countries will be able to make a living providing the world with high quality products.

Some large corporations oppose fair trade. The reason for this is because companies don't care about their employees; they care about having the greatest profits possible. An example of a company that would not support fair-trade is Nestle. They have been involved in a child slavery lawsuit for many years because there are farmers in Africa who use child slave labor to make cocoa (Fisher). Since Nestle only cares about profits, they want to buy the least expensive cocoa and haven't bothered looking into how it was harvested. Nestle is also known for taking advantage of the water supply in rural U.S. towns and using it in bottled water, while paying the towns almost nothing for that water. Finally, many non fair-trade and non-organic farms might use pesticides that are toxic to the employees. Types of inorganic farms that use dangerous pesticides are flower and banana farms. Fair-trade practices support healthy working conditions, including protecting employees from being exposed to unhealthy chemicals on flower farms, banana farms and others.

Farmers and workers do not make a living wage under free-trade policies. The goal of free trade is to make products as cheap as possible for the consumer. Corporations do that by paying workers and farmers as little as possible -- which might not be enough to support their families. "In the race to become the world's least-cost producer, individual farmers and ranchers are left to fend for themselves while the processors and consumers enjoy the benefits of cheap commodities" (Stencel 1). Every large corporation wants to have their products be the best selling, and therefore they would need to be inexpensive, but of good quality. Employees and farmers working for those large corporations will only receive a small portion of what the corporation gains and the rest will most likely be spent on upgrading the corporations' equipment and factories.

Unlike free trade, farmers can earn a living wage with fair trade. The idea of fair trade is to help end poverty in developing countries by paying farmers and workers a fair price (Adams 1), and providing safe working conditions. "Oxfam, an influential non-governmental organization involved in development, defines fair trade as 'paying poor producers a fair wage and helping them gain the necessary skills and knowledge to develop their business and work their way out of poverty'" (Adams 1-2). If farmers and small business owners receive enough money and knowledge, then they can develop their business and produce more goods. By producing more goods they can get enough money to live on, but only if they are paid a reasonable wage. Fair-trade items tend to be more expensive than free-trade items. This happens because if workers are paid a livable wage, then the consumer will have to contribute more to the cost of producing the item. However, the trade off is that by purchasing fair-trade items consumers are assured there was no slave labor involved in making the items (Strange 8).

In the end, it is a matter of conscience

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GMOs: Yes or No?

John Cassell and Tori Foster

INTRODUCTION

Did you know that 70% of all produce is genetically modified (Smith)? Most everything you see in your local grocery contains many genetically modified ingredient (GM). A GMO (genetically modified organism) is the outcome of a process in which the DNA of a particular organism is manipulated with another organism's trait to create the desired result. One example of genetic modification was when scientists placed a fish gene into a tomato, lengthening the shelf life of the tomato (Plumer). Making a successful GMO is a difficult task that involves numerous steps, including and finding the desired gene, extracting it from the organism and then cloning the gene. Thus placing it in the organism to create the desired trait. If the organism has been successfully modified, it will show the desired result. Herbert Boyer and Stanley Cohen worked together to create the first successfully engineered organism in 1973 (Plumer). GMOs weren't released into the market until 1984 with the introduction of "Flavr Savr" tomatoes, modified to ripen slowly (Plumer). Some people think GMOs are beneficial and will increase the evolution of our food production businesses, but others think they are harmful to the environment, our health, and our lives.

THE ARGUMENT FOR GMOs

Genetic modification is just like selective breeding, which humans have done for thousands of years. Can you imagine a world where corn looked like wheat, bananas had seeds in them, and watermelons were tiny and filled with seeds? Well, in fact, these were all the case until humans started selectively breeding plants and animals. For centuries people have selectively bred plants and animals to achieve the most advantageous traits. GMOs are a more effective approach to selective breeding. recently, scientists in China have created low-fat pigs that produce "CRISPR" bacon. "CRISPR" is a gene editing technique that was used on pigs to creates pigs with "24% less fat" (Stein). The Chinese who conducted the study said: "They could maintain their body temperature much better, which means that they could survive better in the cold weather" (Stein), which in turn means they will be more comfortable in their environment by changing their temperature to suit their needs. With selective breeding, humans have many disgusting schemes to mate animals, such as using sperm injectors to impregnate females with the desired sperm. This can be painful for the animal, and some even consider this rape, but with GMOs this can be changed. Mark Tester, an Australian botanist, and professor of Plant Science at King Abdullah University of Science and Technology explains that with selective breeding before GMOs, "We naturally choose the organisms with the best desirable traits and breed them forcefully" (Tester). With GMOs, humans can achieve the desired outcome more accurately. Which means getting the desired trait is less hit or miss with GMOs rather than with selective breeding. We can very accurately modify a gene for the desired outcome (Tester). Thus, there is a better chance of getting the desired gene into a plant or animal with GMOs while making life better for the organism.

GMOs help save the environment by reducing the need for pesticides. With traditional agriculture, farmers have to spray tons of pesticides into the ground to get rid of sprouting weeds before the crops are planted. GM crops are modified to have herbicide resistance, so farmers can let weeds grow and then

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THE ARGUMENT AGAINST GMOs

A major problem with GM food is that there are no long term studies which demonstrate that these products are safe in regards to human health. This is because the amount of time scientists have been able to study GM food is limited. Michael Koch, a Monsanto employee said "For each potential GM product, in order to demonstrate safety, research teams conduct years of field trials and comprehensive testing to be scientifically certain the new trait and genetic modification have not changed the safety of the crop" (Veronica) But his use of the term "comprehensive testing" is not accurate. The average human lives about 79 years (Yau), but regulatory testing for GMO consumption and the safety in humans requires only 90 days (Saltmiras). We can't be sure GMOs are completely safe for our long term health and well-being because long term studies have not yet been done.

In addition some scientists are proposing that disease-resistant genetically engineered crops may make humans (and plants) more vulnerable to viruses (Genetic). "The virus-resistant crops already on the market may be increasing the susceptibility to viral infections and, ironically, even putting the crops at greater risk" (Disease). "Scientists still have no idea whether they will cause the evolution of new viruses by recombination "(which is the rearrangement of genetic material) or what will be the effect of putting viral proteins into plants" (Disease). This is just another potential side effect of consuming GM foods that could have negative health consequences.

Unreliable food labeling is another problem which can't be separated from the uncertain health effects of GM foods. Although the government and many people are striving to require companies to be transparent about the GMOs in their products, lobbyists for these companies are trying to stop this. In 2015 alone, food lobbyists spent $101 million dollars against labeling genetically modified ingredients on their products (Food). Well-known companies such as Coca Cola, Pepsico, General Mills and Kellogg's Co. spent over 10 million dollars combined trying to prevent the public awareness of genetically modified ingredients in their food (Food). Although consumers should be able to decide for themselves if they want to take a chance with their health, the way it currently stands,

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FOR GMO

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spray the pesticides on their fields without worrying about their crops. While this might sound like more pesticides are being used, in actuality the larger surface area of the weeds means farmers ultimately use fewer pesticides. The National Center for Biotechnology Information concluded that when growing GMO corn instead of regular corn farmers only sprayed "2 million pounds of pesticides - roughly 50% of previous years" (Gewin). On top of this, herbicide-resistant GMOs mean that farmers will use less fuel by only having to spray the weeds once (tester). GMOs are a great way to save the environment because of they lessen effects on farms and traditional agriculture.

It's not just wealthy people or farmers who benefit from Genetic Modification, developing countries benefit from it too. Scientists can genetically modify any type of organisms to have vitamins and minerals incorporated into the plant or animal. In the Philippines and Africa, two million people die each year due to vitamin A deficiencies (Golden). GM crops such as golden rice and provitamin A reinforced sweet potato are some examples of food that has been made to address this problem. GMOs can save the "life of 25 percent of those children [ten million children suffering from provitamin A deficiency] could be spared by providing them with diets that included crops biofortified with provitamin A (beta-carotene) and zinc" (Golden). GM crops can help millions of developing countries who struggle with food deficiencies.

Lastly, GM crops have no known negative effects on humans. Humans have been consuming GMOs for 20 years, yet researchers still have not seen links between GMO consumption and, or negative effects on general health. In one study done by the National Academies of Sciences, Engineering, and Medicine found that there was, "no evidence of differences among countries specific health problems after the introduction of GM foods" (Forbes). Numerous other studies concluded that "GM crops currently on the market pose no more of a health risk than conventional crops" (Plumer). There are hundreds of studies saying that GMOs have no harmful effects on humans, whereas there are only a few studies that say GMOs are unsafe to consume and most of these are biased studies (Tester). In conclusion, GMOs pose no more of a threat to humans than non GMO foods.

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AGAINST GMO

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consumers are blocked from knowing if they are eating genetically modified foods.

In addition to the potential health risks associated with GM food there are environmental concerns as well. Farmers are buying genetically engineered seeds designed to withstand pesticides and herbicides and planting them in their fields. For example, the amount of HT (herbicide tolerant) soybeans grown in the United States have increased by 5 % in the last 10 years (Adoption). This allows farmers to blanket spray more pesticides and herbicides on their fields without harming their crops. When natural occurrences present themselves such as rain storms, the pesticides and herbicides tend to runoff into nearby farmers' fields and kill the non-GM plants that aren't resistant to these chemicals. This causes more farmers to use GM seeds to protect their crops and starts this vicious cycle over again. The net result is that actually more, rather than less chemicals are being used to grow some crops and the environmental consequences of this could be far-reaching.

Another general problem with GMOs is that genetic engineering takes time, energy and funding away from other research areas such as organic farming. Wendelyn Jones, an expert at Global Regulatory Affairs, says that genetic engineering requires tremendous investment in both time and resources: "A survey completed in 2011 found the cost of discovery, development and authorization of a new plant biotechnology trait introduced between 2008 and 2012 was $136 million" (Veronica). The average time from initiation of a discovery project to commercial launch is about 13 years (Rickinreallife). Money put into public research of organic farming had fallen to under 30 percent in 2013 (Clancy). This drop-off was due to a decline in government spending on public agricultural research and development as well as a surge in research and development spending by the private sector. This means genetic engineering uses time, resources, money and workers, which could have been put towards organic farming, a more natural and tested way of growing food.

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Do You Know How Much Corn You Eat?

Zoe Bando and Phoebe Quackenbos

Did you know the average American consumes up to 42 lb. of corn syrup per year (Average American)? This is one of many forms of corn that is pervasive in the American diet. Our names are Zoe and Phoebe, seventh graders at The Sharon Academy Middle School. The subject of corn in our diet is of particular interest to Phoebe who has a stepmom with a corn allergy and cannot eat corn. We wondered what it would be like to live without corn like Phoebe's stepmom and other people with corn allergies. We decided to go for five days without eating any food containing corn. However, before we began our diet, we did some research to understand how so much corn came to be in our food.

One of the main reasons corn is in so much of our food is because it is cheap. This is because it's subsidized by the government. Corn subsidies are monies that are granted to farmers from the government to grow a certain crop so it can be sold to consumers for less money (Merriam Webster). Some crops that are subsidized in America are soy, rice, cotton, wheat and of course, corn. The main reason the government started subsidies, is because of the Great Depression. During the Great Depression, Franklin D. Roosevelt popularized the idea of subsidies so that the people affected by the Great Depression wouldn't starve (Origin). Today subsidizes continue to support the farming industry which keeps corn prices artificially low. The food industry has gotten good at using inexpensive corn products in processed food "many times in place of more expensive (and possibly healthier) ingredients." (Lacy)

Our five-day experience was designed to teach us just how true this statement is.

Phoebe's point of view

Day 1:

It was on Day 1 when the truth began to sink in. On this day I learned that corn is used as a sweetener and a binding agent in food. Every morning I usually eat a bagel with cream cheese for breakfast, but I couldn't do that this morning. It turns out bagels contain corn as an additive to yeast, sorbic acid, barley malt, salt, monosodium glutamate, xanthan gum, maltodextrin and citric acid. Bagels also contain cornstarch and cornmeal. So instead I had eggs. But before I could eat them I had to check to make sure that the chickens these came from were not fed corn. They weren't, so I ate them. I skipped lunch that day and just had a cup of tea with sugar instead. I couldn't have my usual honey because many honey brands add corn syrup as a filler. My dad and I went shopping for foods that were corn free. Naturally, we got food such as bread and chocolate that didn't have high fructose corn syrup. But when I got home I realized that most corn products don't actually use the word "corn." Some other names for corn are dextrin, dextrose and glucose. I was very frustrated that I couldn't eat any chocolate or bread because those are my favorite things to eat. That night I had some very bland salmon; I couldn't put many spices on it because many spices have a corn product called dextrose. This is what they put on the salt crystals to help the iodine stick to them.

Zoe's point of view

Day 2:

Since I didn't have time to make myself an egg or something unprocessed I had a quick cup of tea with sugar and milk. If it were a weekend, I would probably have made a pancake. However, since my Bisquick pancake mix has corn in the baking powder, that wouldn't have worked. For lunch I had packed salad, a carrot, a cucumber, and a bell pepper so I was pretty optimistic about my day. But after skiing I started to get hungry and I was more tired than usual. Since the granola bars, hot chocolate, candy and most of the beverages at the slope had corn in them, I couldn't eat them. I usually don't get too hungry during skiing, but since I hadn't had much food during the day it wore me out. We couldn't find any other foods except french fries which probably had salt, as which I have said could possibly contain corn. We could however, have water to stay hydrated. I was very tired of eating only vegetables and my parents had made Nachos for dinner, but unfortunately, the nachos were made with corn chips. So I ended up just eating a salad without dressing because my usual dressing is balsamic vinaigrette but that has vinegar which is made with corn. If it were a regular weekday then I would have probably had some Mac & Cheese. Mac & Cheese has corn in the form of salt, corn starch, yeast extract and the cheese contains salt.

Corn:	No Corn:
Skippy Peanut butter: $2.24	The Bee's Knees peanut butter: $5.24
Welch's jelly: $1.98	Bonne Maman jelly: $3.65
Wonder bread: $1.00	Food for Life bread: $12.49
Ramen: $2.68	Koyo Ramen: $7.50
Coca Cola (6 pk): $3.79	Poland Spring sparkling water (6 pack) $2.98
Kellogs cereal: $3.79	Coconut flakes: $7.49
Milk: $6.49	Milk: $6.49
(Walmart)	

Zoe's point of view

Day 3:

I looked at the ingredients in my instant oatmeal which was Quaker brown sugar and maple syrup and saw that it had corn products - brown sugar, caramel color, Natural and artificial flavorings, which all contain corn. No oatmeal for me this morning! Instead I had a small fried egg with pepper and sea salt, since sea salt does not contain corn. When I got to school I made myself a cup of peppermint tea but I couldn't add any honey or sweeteners, not that I usually use sweeteners. During

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How Much Corn

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math everything didn't really make sense to me probably because I was mostly focused on my hungry stomach. I was realizing how little food I was able to have except for vegetables and fruits since most of our everyday foods are processed and most processed foods have corn. For my lunch and snack I had packed a carrot, pepper and some more lettuce which satisfied me for the rest of school. My family had Chinese food for dinner. I figured that since most of Chinese food has monosodium glutamate (or MSG), which is a preservative it was likely that this Chinese food had corn. MSG was something that I found in many frozen meals since it is a very common preservative to use. If I need a quick meal to eat I usually just heat up some ramen with Better Than Bouillon chicken broth. Sadly, ramen contains vegetable oil, salt, MSG, yeast extract and hydrolyzed corn. One of the first three ingredients in the chicken broth is corn syrup. So instead of my favorite go-to meal I again had a salad.

Phoebe's point of view

Day 4:

This morning one of my classmates asked me an interesting question, "Would a person on food stamps have the income to afford a corn free diet?" This question made sense because there are plenty of people with corn allergies and food without corn is more expensive. I looked into it and a normal budget for an individual on food stamps is $29 a week (food stamps). That breaks down to $5.80 a day, which is not realistic. A more realistic figure for a day's worth of food is $21.97, but the corn free equivalent is $94.35 which is almost five times as much as the money people on food stamps have.

Zoe's point of view

Day 5:

Today was the day that we could finally eat corn. So I stuffed a bunch of Peeps and a candy bar into my mouth without thinking. I only had about three minutes to savor all the sugary goodness before I had regrets. My stomach started to hurt and I realized that I had only eaten vegetables and fruits all week. All of those foods didn't have added sugar or corn syrup so I wasn't used to a lot of sugar in my food which I guess my stomach didn't like. For dinner I had a sandwich, corn chips, salsa, yogurt and for dessert I had cookies. Although the salsa that my family uses - Newman's Own Pineapple - does not contain corn, we use corn chips which were not an option for me since the main ingredient in corn chips is well, corn.

This has been an eye opening experience in the sense we are more aware of foods we are eating and why there is so much corn in them. My personal opinion is that it would be beneficial to consumers' health if fewer corn products were put in everyday food and health items. Of course, corn has become a rather large industry and at this time would be difficult to shut down. Before this experiment neither of us had a clue how much corn we ate every day.

As our parting gift to our readers, we have designed a healthy and tasty alternate meal plan for a corn free dinner:

Grilled Salmon with Roasted Asparagus

Ingredients: Salmon, Olive Oil, Sea Salt, corn free spices, asparagus, garlic.

If you want, you can also cook brown rice as a side dish

Olive Oil and Sea Salt do not contain corn but make sure your spices are corn free!

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GMO YES OR NO

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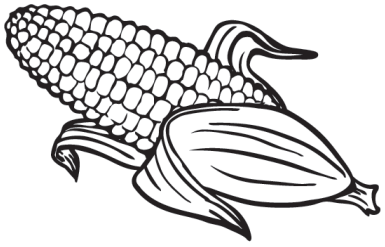
CONCLUSION

GMOs are everywhere, in breakfast food, in lunch and most likely in dinners too! For example, scientists have already developed a low fat alternative bacon made from pigs that are genetically modified to control their body temperature, thus burning more fat. This GM product is called "CRISPR" bacon, produced in China. Not only that, salt resistant plants, disease-resistant pappai and golden rice:rice infused with extra vitamins and minerals are all examples of recent GM discoveries. Do consumers want CRISPR bacon, or any of these other GM foods should be on the market? Are GMOs going to benefit the world or will they be harmful in the long term?

The Effect of High-Fructose Corn Syrup on People and the Environment

Sean Kelly

Did you know that most food, drinks and even salad dressings, have high amounts of high-fructose corn syrup (West)? Why is high-fructose corn syrup in so many foods and how does it affect the health of people and the Earth?



Nobody knows who created high-fructose corn syrup, but Richard Marshall and Earl Kooi claimed to introduce it in 1957 (White). One of the reasons why high-fructose corn syrup is so popular is because importing sugar cane is not very reliable. We import most of our sugar cane from equatorial regions where they tend to have a very unstable governments and climate, such as Brazil, India, China and Thailand (Sheth) . The price and reliability of sugar cane fluctuates depending upon their political or climatic troubles, making this an unstable and undependable import. This instability makes high-fructose corn syrup very popular. High-fructose corn syrup is a sweetener that replaces sucrose (sugar cane or white sugar) in many foods and beverages, such as low-fat yogurt, granola and sports drinks (West). High-fructose corn syrup is in pretty much everything we eat or drink in America (West). The main reason high-fructose corn syrup is in so many foods and drinks is because the government funds corn more than any other crop, which makes it very cheap (Charles). Food industries make high-fructose corn syrup by breaking the chains of molecules in corn starch down into smaller chains to form glucose. They then add enzymes to convert the glucose into fructose (White). There are several reasons why large food companies use high-fructose corn syrup.

One benefit of high-fructose corn syrup is its cost. The government subsidizes corn which makes it very affordable, so large food companies will most likely buy the cheap sweetener over the more expensive sucrose. The American government gives corn the highest amount of crop funding (Life-Cycles). The government put 23.9 billion dollars towards funds for corn in the year 2017 (Charles). Food companies prefer to use high-fructose corn syrup because it's cheap and it's easy to get.

Another benefit of high-fructose corn syrup is how sweet and functional it is (Litchfield). High-fructose corn syrup is just as sweet as sucrose, but it functions in both foods and liquid much better than plain table sugar. "As a liquid, it is easily incorporated into beverages and also stays in solution better- making a high quality product" (Litchfield). High-fructose corn syrup is also very functional in food because, as a syrup and not a solid, unwanted sugar crystals do not form (Litchfield). These are significant reasons why most food companies use high-fructose corn syrup in their food and drink products instead of regular sucrose.

One disadvantage of high-fructose corn syrup is that it leads to obesity (Litchfield). There is an excessive amount of it in many foods and drinks. Granola, iced tea, vitamin water, pre-made soup, and even baked beans are some products that surprisingly contain a high amount of high-fructose corn syrup (West). The average man should consume no more than 38 grams of sugar per day and women should have no more than 25 grams per day (How Much). However, the average American consumes around 82 grams of sugar every day (How Much). "Total sweetener intake also has increased more than 20 percent over the past 20 years, consequently, the increase in total calories has contributed to the energy imbalance leading to overweight and obesity" (Litchfield). While high-fructose corn syrup leads to obesity, it can also cause other health related problems.

A significant disadvantage of high-fructose corn syrup is that it can cause heart disease, which can ultimately lead to death (Added Sugar) . "High added sugar consumption may be related to high triglycerides, low HDL cholesterol, and high LDL cholesterol. These can raise risk of heart disease" (Added Sugar). Heart disease is the leading cause of death in America for both men and women (Heart disease). Clearly, lowering the consumption of high-fructose corn syrup would improve the health of Americans.

A third disadvantage of high-fructose corn syrup is how it affects the environment. Large conventional factory farms produce corn with the intent of making it into high-fructose corn syrup

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Fair Trade vs Free Trade

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about which type of trade is better. The trades both have their pros and cons. Keep in mind that you can create change through your buying choices. If you want to support the fair trade movement, the most common fair trade items to look for are tea, coffee, chocolate, and bananas. The blue, green and black symbol that signifies fair trade can help you identify fair trade products and shop according to your values.

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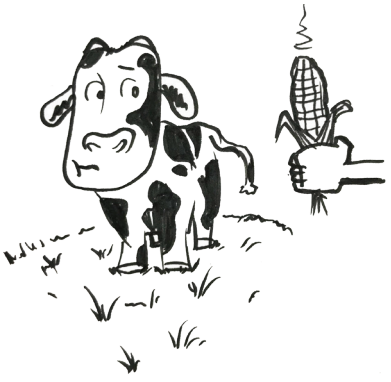
Grass-fed VS. Corn-fed: Which is the Better Burger?

Savanna Bragg

Did you know that cows' farts contribute more greenhouse gases than cars? This is because most U.S cows are corn-fed and their bodies were not designed to digest grain. Since grain is less nutritious than grass, industrial cows tend to release much more methane in their farts and burps. This is one of the many reasons why consumers debate whether we should eat corn-fed or grass-fed beef. Grass-fed cows live on non-industrial farms, grazing along the hillside and eating as much grass as desired. As a result, their meat tends to be less marbled and is much tougher (Aubrey). Corn-fed cows come from large factory farms that feed their cows grains, antibiotics, and GMOs to speed up the growth process. This process, called "cow fattening," originated as early as 1998 and has been growing in practice ever since (Lardy). Due to "cow fattening" practices, corn-fed beef is fattier and easier to chew (Aubrey). Many people prefer the taste of corn-fed beef, and as a result, industrial corn-feeding operations have spread to many states. Understanding the differences in how corn-fed and grass-fed practices impact the environment, the animals, and our health is important when making a choice about what to eat.

In industrial farm settings, cows are fed corn and grains, which make them more likely to get E.coli. Since cows didn't evolve to digest grains, feeding grain to cattle makes their digestive system extremely acidic. Overtime, E.coli, a bacteria found in cow manure often gets into the cows digestive system and becomes acclimatized to this acidic environment. This is problematic because the acid-resistant E.coli can then spread to other animals and humans. Normally, the acidic environment of a human stomach kills E.coli. However, since the E.coli in corn-fed cows has adapted to an acidic environment, humans are less able to fight it and thus more likely to get sick (Palmer). Since the meat of corn-fed cows contain so much E.coli, the large agriculture industries spray their meat with ammonia and antibiotics to prevent humans from getting E.coli. When humans consume these meat products, they are digesting the ammonia and antibiotics too. In the long run, consumption of antibiotic-treated meat will create antibiotic-resistant bacteria, resulting in there being fewer ways to cure an infection.



Grass-fed beef is also better for the food chain, because their manure is spread out among fields and fertilizing the soil. In contrast, corn-fed beef is raised in CAFOs (Concentrated Animal Feeding Operations), which usually capture their waste "in huge holding tanks or football field size deep pit 'lagoons'" (CAFO). Dealing with CAFO's waste has become a major problem. When CAFOs spray this manure on crops to fertilize them, it can spread viruses, bacterias, and antibiotics. Also, sometimes the waste storage units fail, causing nitrogen, phosphorus, and other compounds. When waste storage lagoons fail, " Millions of gallons of manure reach waterways and spread microbes that can cause gastroenteritis, fevers, kidney failure, and death. One bacteria, pfiesteria piscicida, produces a powerful toxin that has been responsible for massive fish kills in waters polluted by manure" (CAFO).

Although grain isn't the healthiest for cows, it's cheaper than feeding cows grass. Larger companies tend to choose grains over grass because of the price and how it's much easier it is to store. "We feed them corn because it's the cheapest thing we can give them. It cost about $2.25 for a bushel of corn which is like 50 pounds" (PBS). Many people prefer corn-fed beef due to the fact it is so affordable.

Although grass-fed beef is more expensive, the beef is also healthier because it is less fatty. Cows are one of the only animals that have a four-chambered stomach and regurgitate what they eat as cud before chewing and eating it again. They are one of the only animals that can actually digest grass because it is so hard to break down. But even for an animal that can digest grass, corn is exceptionally hard to process (Pradhan). Cows are not accustomed to digest grain, which therefore causes them to produce a large amount of Omega 6 fatty acids. These are not the kind of fats that the human body generally needs (Haspel).

Despite the differences between grass-beef and corn-fed beef they both have their benefits; corn-fed beef is cheaper and is easier to chew, but grass-fed beef is better for us, the environment, and the cows. Which one would you choose?

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Temple Grandin's Contribution to Animal Welfare

Isabella Crowe and Pam Ward

Can you think like a cow? If you can, you can work with Temple Grandin to make slaughterhouses more humane. Luckily for commercially raised cattle, Temple Grandin, an autistic, animal rights activist, could empathize with cows. She saw problems in the slaughter industry and figured out solutions to help cows have a better experience during their last moments. While Temple Grandin has had an important impact on the slaughter industry by making it more humane, there is still more that needs to be done.

> "Temple Grandin is most widely known for being an autistic person who succeeded in changing the slaughter industry."

Temple Grandin is most widely known for being an autistic person who succeeded in changing the slaughter industry. Born in in 1947 in Massachusetts, she was diagnosed with autism and couldn't talk until she was about four. From the time she was a young girl, Temple loved animals (Jackson), which explains why she connected with cattle. Temple Grandin is a highly educated person. She has bachelor's degree in psychology, a masters degree and a Phd. in Animal Science (Grandin). Temple has also earned multiple awards and honorary degrees in her field of animal science. She has written many books, given several lectures, and hosted two TED Talks about animal behavior, animal welfare, and autism. Currently, she is a professor of Animal Science at Colorado State University. She also consults for the meat industry in the areas of livestock handling equipment design, and animal welfare (Grandin).

One way Temple Grandin made the slaughter industry more humane, was with her invention of curved chutes. A chute is the pathway that cattle travel through on the way to slaughter. The old chutes were straight and the cattle could see what was coming up. This would cause them to panic, get scared, turn around, and fall, which caused many cows to get injured. Grandin realized that curved chutes would calm the cows, because they would think that they were going back to where they came from and wouldn't see what was coming up. As Temple Grandin explains, "Cattle move though curved races more easily because they have a natural tendency to go back where they came from" (Montgomery). Most slaughter plants in the U.S. now use the curved chutes (Bell).

Temple Grandin also changed the way cattle were being stunned before slaughter. Before Temple Grandin came to the slaughterhouses, the stunning process was inhumane intent. In the last seconds of a cow's life, the slaughterhouse workers would poke the cows with electric prods to force them into holding boxes, often making the cattle slip and break their legs.

This process is dangerous, for not only the cows, but also for the workers. Many of the employees wore football like helmets, because the cows were shocked at the height of the worker's heads and workers could be kicked. According to National Geographic Grandin says, "Nothing's worse than a botched attempt to kill an animal" (Bell). To fix this problem Grandin invented the center-rack restrainer which holds the animal in place on a conveyor belt-like piece of machinery that elevates the animal off the ground and hold them securely. This makes the cows calmer, easier to handle and the stunning process more humane and accurate (Bell).

Temple Grandin also changed the dip vat. The dip vat is a structure designed to immerse the animal in a water and chemical bath before they are stunned. Before Temple Grandin came in, the engineers of the structure had no idea that the cattle would become so scared. Temple saw that the cattle would go into the dip vat and slip into the water, and occasionally drown. She fixed the dip vat by putting deep grooves into the ramp, which made for excellent footing. The cattle felt safe because it felt like a natural path for them. Grandin said, "Oh I would hate that! If I had a calf's hooves, I wouldn't have liked a slippery metal ramp, either. Those cattle must have felt as if they were being forced to jump down an airplane escape slide into the ocean" (Montgomery). So Grandin's modifications made the cattle feel like they were on a tread path rather than sliding down a metal roof.

> "Although Temple Grandin did a great deal to make slaughterhouses more humane for cattle, her work is only a start."

In the 90's, Temple Grandin partnered with McDonald's, which sells 70 million pounds of hamburgers a year. McDonald's hired Grandin to make their company look better, and to ensure that the meat they were buying at slaughterhouses were humanely treated. Audits designed by Grandin made sure that distributors that supply beef to McDonalds, were slaughterhouses they could trust. "The industry became serious about improving handling and stunning after McDonald's removed one large plant from the approved supplier list and suspended several others for varying lengths of time" (Grandin). The slaughter industry became more serious after Temple Grandin worked with McDonalds.

Temple Grandin has worked hard to make her ideas accessible to the slaughter industry. She has a website that provides a great number of resources. She has helped set up a program at Colorado State University (CSU) to reduce stress

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• MOVIE REVIEW •

That Bottle of Water You're Drinking May Have Just Killed a Pelican

AJ Aldrich, Jason Pratte and Donald Mabbott

Do you ever stop at a gas station and buy bottled water? To find out more about the process behind bottled water watch the film, "Tapped." The film makes a strong case that commercially produced bottled water has a negative impact on the environment, human health, and society.

In 2009, directors Stephanie Soechtig and Jason Lindsey made a documentary about the dangers of plastic bottles. They discovered that big corporations were taking water from small communities in different states throughout America, and selling it within state lines. The Food and Drug Administration only regulates and tests water that travels between states. By avoiding these regulations, consumers were unaware of the toxicity levels in the water. Soechtig and Lindsey also uncovered the environmental disaster being caused by the non-biodegradable plastics used in water bottles.

First, the directors explored the damage bottled water does to the environment. Most of the people in the small town of Fryeburg, Maine didn't know that Nestle Corporation was pumping water from the Charles River. In 2007 there were 35 states that suffered droughts because of Nestle and big water corporations like it. The people of Fryeburg were totally in the dark. "Everyone thought we were not going to have any more water" (Soechtig). Moreover, these corporations still pump water *during* a drought. Coke and Pepsi started bottling water because their soda sales started dropping. Water mining corporations did $11 billion in business in 2007. Since they started pumping water in Fryeburg, and towns like it, the fish population dwindled, plastic bottles were found in the river, and even more bottles made it to the ocean. For example, Camillo Beach in California, is basically a plastic beach. "Everything we throw away mostly ends up on Camillo Beach" (Soechtig). The sand on Camillo Beach is mostly broken, shredded, and degraded plastic. The water mining corporations are very greedy; they think that water is gold, and they just keep pumping. In their view, they are doing no harm to the earth, but all of the plastic pollution is mostly their fault. If consumers stop buying bottled water it could put them out of business. Scientists featured in the film found 26 pieces of plastic in the stomach of just one fish, and agreed that the damage is real and wide spread—literally from Maine to California. "If you eliminate the scourge of bottled water, you'll be eliminating one of the biggest problems facing our environment" (Soechtig). Did you know there's a giant floating island of plastic in our ocean that we just ignore? There is a "one mile trawl out in the middle of the ocean as far from land as you can get anywhere on earth, and instead of it being clear ocean water with ocean animals, it's a plastic soup, with more plastic than plankton" (Soechtig). Not only are these bottled water corporations damaging the environment, their products are damaging the health of Americans.

The second thing *Tapped* investigated was the impact plastic water bottles have on human health. The plastic used in making water bottles is made of Polyethylene Terephthalate (PET or PETE). PET is the most common thermoplastic polymer resin of the polyester family and is used in fibers for clothing, containers for liquids, and more. This chemical and others have been known to leech into the drinking water that people buy off the shelf every day. The scientists in *Tapped* tested some of the bottles and found unhealthy levels of styrene and benzene. Both of these chemicals are directly linked to an increased risk of getting cancer and reproductive system damage. Most water and sports drink bottles also contain phthalates, a commercial plasticizer that causes weight gain, causes insulin resistance, and leads to problems in the reproductive organs. Even more harmful is Bisphenol A or BPA, one of the most toxic chemicals known to mankind. "Thirty-eight internationally recognized scientists are extremely concerned about the impact of these bottles on human health" (Soechtig). BPA is found in five-gallon jugs and other hard plastic containers. This also leeches into our drinking water. It is in baby bottles, sports bottles, and coolers. "We find it relating to obesity, breast cancer, prostate cancer, diabetes, brain disorders like ADD and ADHD, liver disease, ovarian disease, disease of the uterus, and a low sperm count" (Soechtig). These are shocking revelations, but these plastic bottles also pose a threat to our society.

The third, and perhaps the most important impact the directors of *Tapped* brought to light, was on our society. Due in part to misleading ads downplaying the risks to our environment and our health, Americans brought home more than 29 billion bottles of water in 2007—and simply tossed them away. Some of these "water pirates" move into towns that are in need of a manufacturing plant, enticing some citizens to sell their homes and move closer to the factory. Nestle has moved into several towns across the U.S. and started pumping water. As long

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Poverty and Obesity

Aidan Gage

When you think of food insecurity what do you think of? Skinny people? This is a common assumption that is actually not the case at all. People in food insecure situations are actually thirty-two percent more likely to be obese than people in food secure situations (Relationship). This brings us to the question of, how are poverty and obesity related?

The first way that poverty and obesity are related is that minimum wage jobs definitely do not provide a lot of options for food. Minimum wage jobs which follow the federal government requirement of $7.85/hour pay just above fifteen thousand dollars annually, which is very little (Relationship). Even if someone lives in the cheapest possible situation (assuming they still have to pay rent) they would be paying about $8000 annually (Martin), which would leave them about $7000 for food, transportation, phone and internet bills. This would make it very hard to buy good healthy food even if they have a low cost of living. Luckily, a McDonald's cheeseburger is only a dollar. For some people this is the only option when they don't have money to buy healthy food.

The next way that poverty and obesity are related is that college graduates are less likely to be obese (Prevention). Graduates are generally more educated and can find jobs that pay more allowing them to buy healthier foods. Out of female college graduates, 76.6% are a healthy weight and 72.6% of men who are college graduates are a healthy weight (Charles). This compares to the 67.9% of healthy weight men who have less than a high school education, and the 57.9% of healthy weight women with less than a high school education (Charles). College graduates are less likely to work minimum wage jobs, therefore they have more money to spend for higher quality food.

Third, poverty and obesity are linked because corn subsidies make many unhealthy foods inexpensive and therefore people in poverty tend to eat foods that are high in corn products. Total subsidies to to farmers in the United States went up to 23.9 billion in 2017 (NPR). This means the government is giving money to farmers to keep their prices low and competitive. As a result corn products are very low in cost and foods that contain corn products are very affordable. "Corn is in everything we eat and drink, from soda to beef, and it's fueling the nation's obesity epidemic." (ABC) People that can't afford high protein foods and fresh vegetables tend to fill up on cheap corn products.

Next, there are way too many food deserts in the United States and they tend to be in poor areas of the country. Food deserts are places where not much healthy, unprocessed fresh food is available. Places such as in poor sections of inner cities have few grocery stores that sell fresh fruits, vegetables, lean meat and other healthy food items. Instead food deserts tend to have convenience stores which sell highly processed snack foods that are high in sugars and fats which are both high calorie nutrients. Food deserts also tend to have a lot of fast food restaurants. (The least ratio of fast food places to population is held by Vermont, with 1.62 fast food restaurants per 10,000 people.) Food deserts are more common than you would think. 23.5 million Americans live in food deserts (Spoon University). This means that poor people have less access to healthy lower calorie foods.

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Tapped! Movie Review

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as they sell it in the same state, there is no federal oversight. Nestle pays only .11 cents a gallon, and they're selling it for six dollars a gallon. Nestle simply obtained the permits to pump public water from Fryeburg, and did not pay a dime for it. Nestle also owns Poland Springs. "Nestle is paying $230 million to suck multi-millions of gallons of water from Florida through 2018" (Soechtig). The people in Fryeburg didn't have any water for a day and a half while Nestle was still pumping water. Nestle had consumed tons of water to sell back the citizens while the local nursing home patients had to get theirs from the Fire Department. In Nestle's world, consumers always come second to their profits. The people of Fryeburg are now protesting Nestle, requesting that they leave their town. Nestle and other big water corporations sell their water for 1,900 times more that it costs them to pump it out, bottle it, and distribute it. PepsiCo bottles 400,000 gallons of water a day. That's seven billion dollars a year. Additionally, plastic water bottle manufacturing uses 714 million gallons of oil every year. That's enough to fuel 100,000 cars. So, instead of American society cracking down on these water pirates, we're embracing them just so we can enjoy a little convenience in our lives.

The film, "Tapped" makes a strong case that commercially produced bottled water has a negative impact on the environment, human health, and society. Almost 10 years ago this important documentary exposed the dangers of plastic bottles, and how big corporations were taking water from small communities and selling it back to them. These corporations also dodged Food and Drug Administration regulations and their water went untested for years. American consumers were unaware of the toxicity levels in the bottled water, and unaware of the chemicals that could leech into the water, and into our rivers and oceans. So, the next time you pull over at the gas station to fill up your tank, leave the bottled water on the shelf.

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Paper Bags vs. Plastic Bags

Aliza Aldrich and Pam Ward

When shopping at a grocery store, customers have the choice of having a paper bag or a plastic bag when checking out. The paper bag was invented by Margaret E. Knight and Lydia Deubener in 1852 (Ament). The plastic bag was invented by Sten Gustaf Thulin in 1953 (Paper or Plastic? The Washington Post). Bags were invented to carry objects such as food, clothing and other needs. Both are often used in grocery stores, clothing shops and other stores. There are multiple environmental impacts that both, paper and plastic bags have on the Earth. This article tries to answer the question, which option is better for the environment?

> "If you are at all concerned about our environment, you should think about what bag you're going to choose next time you're at a store."

The first way I compared paper and plastic bags was by looking at the amount of air and water pollution that are produced during the life of each type of bag. The toxic chemicals released during the production of paper bags contributes to air pollution such as acid rain, and water pollution. Plastic bags also pollute because their production requires five toxic chemicals which the EPA ranks as amongst the most hazardous. Overall, the production of paper bags creates more pollution than the production of plastic bags, but the chemicals required to make the plastics are extremely hazardous. Also when plastic bags decompose, toxic chemicals such as bisphenol A (BPA) and PS oilgoner are released (McGrath). Therefore, one type of bag does not seem better than the other from this point of view (Paper or Plastic? - The Washington Post).

The second way I compared the bag's impact on the environment was to see how they contribute to climate change by affecting the amount of greenhouse gases in the atmosphere. When both types of bags are transported from where they're made to the stores, the transportation process burns fossil fuels and releases CO2 into the air. In this way they equally contribute to climate change. However, producing paper bags requires cutting down trees which remove CO2 from the atmosphere. In 2009 alone, 14 million trees were cut down to produce 10 million paper bags. (Czinski) Also, paper bag production uses four times the amount of energy than plastic bag production ("Paper or Plastic? - The Washington Post). Overall, eighty percent more greenhouse gases are released with the production of paper bags (How stuff works). Therefore, from the greenhouse perspective plastic bags are a better choice.

On the other hand, plastic bags contribute more than paper bags to solid waste pollution. Plastic bags take way longer to decompose than paper bags. It can take 5-15 years for a plastic bag to decompose (News) whereas a paper bag will decompose in a matter of days given moist and warm conditions. For this reason plastic bags create a big problem for wildlife. For example, when plastic bags end up in the ocean, they threaten marine life. Animals, such as turtles, mistake the bags for jellyfish and end up swallowing them. When an animal swallows the bag, it blocks their stomach leading to starvation. "In 2002 a minke whale that washed up on a beach at Normandy was found to have 800 grams of plastic and other packaging in its stomach" (Paper or Plastic? – The Environmental Literacy Council). Paper bags are not harmful to wildlife because they quickly decompose. When comparing the bags through the solid waste lense, paper is the winner.

The last way I compared paper and plastic bags was by looking at them from the standpoint of recycling. Used paper and plastic bags can both be transformed into useful objects. Recycled paper bags are usually made into corrugated cardboard (Paper or Plastic? - The Washington Post), and recycled plastic bags can be made into new plastic bags. Also "recycled plastic bags can be made into plastic lumber that is used to make park benches, backyard decks and fences-even playground equipment."(What).

The problem lies in that the average percent of plastic bags that are actually recycled per year is only 1-3% and the average percentage for paper bags is only 10-15%. This is because it is more expensive to recycle both kinds of bags than it is to make new ones. If recycling does take place it takes 98% less energy to recycle a pound of plastic bags than it does to recycle a pound of paper bags. (Paper or Plastic? - The Washington Post) When looking at it from this point of

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The Life of an Organic Strawberry

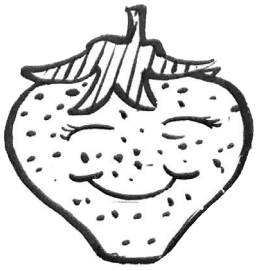
Shannon Hadlock

Hi, my name is Susie the Strawberry. I live on Cedar Circle Farm, in East Thetford, Vermont. I am a natural, non-GMO seed. Before I tell you my story about my life, let me tell you a little bit about my home.

Cedar Circle Farm is an organic farm with a social mission. On their website it states that their mission is to, " Engage the community to develop and share practices that promote regenerative agriculture, good health, and a resource-rich environment" (Vermont). Since they are an organic farm, they do not use any pesticides on their produce or use GMO seeds. Before my life as a strawberry at Cedar Circle, my siblings and I came from a strawberry company in Massachusetts called Nourse. Nourse has many different kinds of strawberry varieties. For example, I am an AC Valley Sunset Strawberry and my brother Albert is a Clery Strawberry. The farm has different varieties of strawberries. Cedar Circle came and picked us up from the factory and brought us back to Vermont. We were put into a fridge where we stayed fresh until early May when they were ready to plant us. The farm hands had to plow and cultivate the fields first. We strawberries grow and grow until early June when they let local people and CSA members come and pick us. This lasts for about three weeks, from June until July. Schools come and pick us too and learn how to make different foods with the organic produce Cedar Circle grows. My brother Scott read a sign when he was picked. The sign said, " PYO strawberries are priced by the pound: $4.00/lb up to 10lbs,, $3.75/lb 10-20lbs,, $3.50/lb 20-50lbs,, $3.25/lb over 50lbs" (Vermont)! Wow, I had no idea how much all us little strawberries were worth; who knew that someone would pick 10 to 20 pounds of strawberries on a given day and that they would be willing to pay $3.75 for every pound of us.

Cedar Circle has eleven farmhands and two cats that help catch the pesky mice. Some farmhands come from big colleges, the armed services or just local towns. I heard one person say,

"One farm hand has served in the Marines before coming to work for the Cedar Circle Farm" (Vermont). I was like, that's so awesome! The farm hands are paid $9-$15 an hour depending on the number of years they have worked there and their farming experience. The actual farm has 25,000 square feet of greenhouse space and 40 acres of farmland for many different kinds of produce.



I was excited to be picked; I wanted to be taken to a nice home and made into something like a strawberry shortcake or a fruit salad, but I wasn't picked. After customers left, the farm hands came and picked the rest of us. Some of us went to farmers markets and some of us went to the CSA. I was sent to the CSA, or Community Supported Agriculture. When I first got there, there was sign that said, "You pay $225 and you get a card with a starting balance of $250" (Vermont). So what is this CSA thing? In most cases, a CSA is where a farmer receives a bulk of money from a customer at the start of the season to help cover their expenses. Then the customer gets a weekly supply of fresh produce during the season. In the case of Cedar Circle, the customer gets a card worth $250 for their season's produce when they give Cedar Circle $225 at the start of the season. This allows consumers to get more strawberries or corn or whatever they want whereas in some CSA's the farmer gets to decide what goes into the consumer's box each week. Us strawberries like Cedar Circle's system better. People can take home more of us if they want to.

People came to our farm stand from local towns and bought many different kinds of produce. My sister Shelly went to a farmer's market. There, she saw a sign that said, "Thursday's Lebanon Farmers Market 4-7 on the green in Lebanon, NH, May through September" (Vermont). One family bought my friend Tony and made him into delicious strawberry shortcake.

I was taken home by a nice family with two children. The ride there was a little bumpy, but when we got home I was put into another fridge. I was thinking about all the things I could be made into. I could be made into a strawberry cheesecake, a banana and strawberry smoothie, or Cedar Circle Shortcakes! I was in the fridge for about a day when a little girl, around the age of five came and got me out of the fridge. She said, "Fresh strawberries on top of warm, fluffy pancakes are my favorite!"

I'm so glad I am a fresh strawberry from the farm and not a GMO strawberry covered in pesticides. Big companies like Driscoll's use GMO seeds and they have never been tested on humans to see if there is a long term effect on their brains and body. Scientist have said, "The possibility of unexpected, accidental changes in genetically engineered plants justifies a limited traditional toxicological study" (USRTK Staff). I wouldn't want to hurt a human. Another reason why I'm happy being an organic strawberry is that when humans have food with pesticides on it, they have to wash all their food before eating it which is a pain. Also Driscoll's is not alway fair to their workers while conditions at Cedar Circle are better. I heard about people boycotting Driscoll's and that there was an article about the workers at Driscoll's. One worker from Driscoll's that was interviewed said, "I remember a heavy bucket of tomatoes, sometimes of cucumbers, and I remember being on my hands and knees in the dirt picking strawberries. I remember seeing other children, too. But something that really changed my life is when I saw an elderly person and it struck me. I wonder if he had spent his entire life in the fields"

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Berry Nice or Not? -- How Is The Life Of a Driscoll's Strawberry Different than a Local Strawberry?

Jack Lloyd

Hi, my name is Sean the Strawberry. I am a Driscoll's strawberry. Driscoll's is a company that distributes all different kinds of berries. Driscoll's was founded by a man named Joseph "Ed" Reiter in 1904. In 1950 Driscoll's began national distribution of their berries (Driscoll's). In 2015, Driscoll's employed an average of 3,700 people in North America and up to 6,000 during the height of the strawberry-growing season. Driscoll's estimates that they employ 100,000 personnel world-wide (Morales). Driscoll's is the largest berry grower and seller in the world. The company primarily grows their strawberries in the United States, but also in many other countries around the world. "The U.S. produced 36 billion pounds of strawberries, accounting for 29% of the world's strawberry production. In addition, Spain accounts for 11%, Turkey 7%, Egypt 5%, and Mexico 5%" (Morales). As the largest berry grower in the world, Driscoll's has an annual revenue of more than 2 billion dollars (Morales). "The growers receive 82% of the revenue, while Driscoll's nets the outstanding 18%" (Morales). As a strawberry, it's exciting to think about what a large, global system I'm a part of!

My own little strawberry life begins with being planted at a Sakuma Brothers Farm in Santa Maria, California (Driscoll's). My home at Sakuma Brothers Farm is close to the Driscoll's headquarters located in Watsonville, CA. Sakuma Brothers Farm is one of the main berry distributors for Driscoll's (Driscoll's). All of my strawberry siblings and I are first grown as seedlings in a massive greenhouse. Unlike most strawberries, we are grown throughout the whole year, except during January when it is too cold (Driscoll's). Here at Sakuma Brothers Farm we are planted and tended by migrant workers from Mexico. Migrant workers come to America because they don't have other jobs in Mexico. Also many of these workers are undocumented, indigenous Mexicans coming from the state of Oaxaca (Varner). When they come here, they are paid lower than minimum wage and the working conditions are very poor. For example, undocumented workers are more likely to be sexual abused or taken advantage of because they cannot go to the police for help without fear of being deported (Ahmad). These migrant workers are paid $0.50 per hour, and they work 12 hours per day. This amounts to only $6 a day (Ahmad). This income is not enough to support a family in the U.S., but most workers are sending their money back to family in Mexico, where the cost-of-living is cheaper. These migrant workers do all the work for us strawberries (Ahmad).

We strawberries have a very easy life, except we are a little different from traditional strawberries. Driscoll's is breeding different kinds of strawberries to make a superior breed of strawberries. My friends and I (and every single Driscoll's strawberry) have been modified so we are bigger, don't spoil as quickly and to some people, we even taste better. We also have been treated with pesticides. This means If a strawberry identical to me existed, it couldn't be grown in the wild. Pesticides are sprayed on various kinds of berries to protect them from insects and or other pests that could destroy or harm them. When GMO treated strawberries are on the shelf we look more appealing because we are bigger brighter and to some, and we taste sweeter.

After I am treated with pesticides and grown to adulthood as a GMO, I am brought to a facility and cleaned and shined so I look very appealing and people will want to buy me. My siblings and I are separated into groups for packaging and then sent away. We are packaged into containers. I have always wanted to be in one of these containers because of these green blankets that keep you warm if I go to a cold place. After I enjoy a little snuggle with the green blanket, we are loaded onto a truck to be driven to a Hannaford's facility. After a very long drive, we finally arrive at the Hannaford's facility. Then we are loaded onto a Hannaford's truck to be driven to grocery stores. Once we arrive at Hannaford's we are brought into the store and put on the shelf right next to all of the other berries. And who do I see in the next strawberry container to the right? None other than my brother! Well one of my three-hundred, thirty-four brothers and sisters, but at least I have someone to talk to. So for the next couple of days my brother and I just talk and sleep. Then on a Saturday morning, a elderly man comes in and snatches my brother's box. I yell, "Have a good life!" We both start laughing, but his laugh is getting fainter. Just then I realize I am all alone. Except for the 16 other strawberries in my container who are chatting quietly. For the next couple of days I am very lonely. But a few days later, a very small child about 10 or 12, like the ones in the strawberry fields, comes along and picks up my container! Once we are at my "home", we are put into the refrigerator. Good thing Driscoll's put a nice warm green blanket in our container to keep us warm. Soon I am sound asleep. Wait… am I asleep? No I'm not. I have been eaten. It's been a good life!

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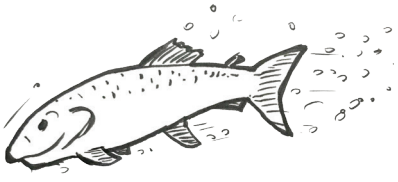
Is Something Fishy About Salmon Farming?

Jamie Potter

Did you know that the salmon you're eating is impacting the environment? Salmon farming is a thriving business in places like China, Canada, and The United Kingdom. There are also salmon farms in the U.S., but other countries surpass this amount substantially. About 69% of all salmon in grocery stores are fish-farmed salmon from the Atlantic seas (Chemical). Salmon are typically farmed using nets in the ocean to contain them, but the nets and the chemicals used on the salmon have negative effects on the environment.

Salmon fishing is an energy and money intensive process. One of the reasons for this is that salmon require a lot of food. Salmon feed is made of anchovies, herring and sardines. It takes about eight kilograms of these smaller fish to make one kilogram of salmon fish feed (Chemical). The population of these smaller fish is decreasing, due to the high demand for salmon feed. Although people might say that there are plenty to go around, scientists say that with the increasing number of fish farms, the small fish needed for feed will soon go extinct (Chemical). Creating the fish feed, including catching the fish and transporting them, requires a lot of energy. The world spends about 20 billion a year on subsidies that permit fish catching and farming (Chemical). Governments are spending a lot of tax money to make salmon fishing affordable, and many critics wonder if that money should be directed to more cost-effective food production.

Farmed salmon are also known to spread diseases. One disease is called Infectious Salmon Anaemia or ISA. This disease was first detected in Norway in 1984 and has now been detected in Scotland, Canada, and the US (Chemical). Also, because of its ability to accumulate in sediments, ISA could become toxic to other marine life. ISA's frequent occurrence on salmon farms could therefore jeopardize the livelihoods of coastal fishing communities reliant upon wild species. This isn't the only disease though; there is also Furunculosis. This is the most infectious disease found in salmon farms. "Furunculosis is caused by the bacterium Aeromonas salmonicida. Both Atlantic and Pacific salmon are susceptible to this disease at all stages of their life cycle" (Chemical). The disease causes the salmon to get boils on the surface of their bodies. "In 2005 Furunculosis killed 1.8 million Atlantic salmon smolts at a single commercial salmon hatchery on Vancouver Island" (Chemical). Both ISA and Furunculosis formed because of the small nets that the salmon are kept in. A significant amount of bacteria build up in the nets spreads out into the ocean. Salmon farming practices contribute to the spread of ISA and Furunculosis, and these diseases affect other fish and marine animals.



Another problematic impact of salmon farming is that the nets and farming techniques used can kill marine mammals. The farmers who work in the fish farms will sometimes do whatever it takes to keep animals away from their fish farms. In September 2011, the Department of Fisheries and Oceans in Canada posted statistics about the number of marine mammals shot or drowned at active salmon farms during the first quarter (Government) . "A total of 141 California sea lions were deliberately shot; 37 harbour seals were reported shot or drowned in the nets; and perhaps most worrisome, two Steller sea lions, a species listed under the federal Species at Risk Act (SARA) as 'of special concern', were shot by Mainstream at their West Side farm in the Clayoquot Sound Biosphere Reserve" (Chemical). Net-cages attract marine mammals who are natural predators of salmon. These marine mammals get stuck in the nets and die. Salmon farmers and their nets are killing mammals, some of which are endangered species.

> "About 69% of all salmon in grocery stores are fish-farmed salmon from the Atlantic seas "

Additionally, many salmon farmers have to use chemicals to combat pests like sea lice, and these chemicals affect the environment and fish. Sea lice are caused by having large groups of fish in a small space. They are destructive because they eat the blood and skin of the salmon. Farmers use a chemical marketed as SLICE, or Emamectin Benzoate, which is used to kill sea lice. While SLICE kill sea lice it also affects the skeletal build up of crustaceans—including prawns, crab, and shrimp. Due to its ability to accumulate in sediments, SLICE can become toxic to other marine life (Chemical). Its frequent use on salmon farms could therefore jeopardize the livelihoods of coastal fishing communities reliant on wild species. There is a limit on how much SLICE farms can use, which is every 61 days. However, a lot of farmers don't follow this rule (CAAR). Due to the use of SLICE, aquatic animals are dieing or being drawn out of their habitat.

Lost equipment from fish farms pollutes the environment. No matter how well prepared the fish farm is, they still end up losing wire netting and other equipment due to storms or human error. This causes debris to wash up on beaches and pollute the bottom of the ocean. When nets break, large amounts of salmon escape and take over local fish habitats. For example, about 305,000 salmon were accidently released because of machine error. These fish caused damage to the local fish habitat and the local beaches (Flatt).

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The Sugar Hidden Within

Kyanna Blodgett

Most Americans probably aren't aware of the incredible amount of added sugar that is consumed annually in this country and the health consequences which can result. Some sugar occurs naturally in foods such as fruits and milk; it is the added sugars that causes problems. When reading a product's label, it's often difficult for the consumer to tell how much sugar is added to a food. For one there are 60 different names for sugar including dextrose, sucrose, high fructose corn syrup, barley malt and many more. Also, "manufacturers are not required to say whether [the total amount of sugar listed] includes added sugar, which makes it difficult to know how much of the total comes from added sugar and how much is naturally occurring in ingredients" (Hidden).

> "..young people are not very aware of how much sugar they are taking into their bodies on a daily basis."

Why should we care? It tastes good, that's all that matters right? The American Heart Association warns us against thinking like this, "It's important to be aware of how much sugar you consume because our bodies don't need sugar to function properly. Added sugars contribute zero nutrients, but many added calories that can lead to extra pounds or even obesity, thereby reducing heart health" (Added). The American Heart Association recommends the following guidelines for sugar consumption, "Most American women, [need] no more than 100 calories per day, or about 6 teaspoons of sugar. For men, it's 150 calories per day, or about 9 teaspoons" (Added). However, "Americans consume 66 pounds of added sugar each year, on average" (Hidden). "The U.S. Centers for Disease Control and Prevention (CDC) reports that far too many Americans are consuming too many calories from added sugars. A report published in 2013 revealed that nearly 13 percent of adults' total caloric intake is coming from sources such as sugar and high fructose corn syrup" (Nordqvist).

Most, if not all, of our processed foods have hidden sugars in them. "The major sources of added sugars are regular soft drinks, sugars, candy, cakes, cookies, pies and fruit drinks (fruitades and fruit punch); dairy desserts and milk products (ice cream, sweetened yogurt and sweetened milk); and other grains (Cinnamon Toast and Honey-Nut waffles)"(Added). Foods that on the surface may seem healthy also contain high quantities of sugar. For example, "One brand of yogurt contains 29 grams of sugar per serving. Breakfast bars made with 'real fruit' and 'whole grains' list 15 grams of sugar. A single cup of bran cereal with raisins, in a box advertising 'no high-fructose corn syrup', contains 20 grams of sugar per serving" (Nordqvist).

I wondered what local students know about the amount of sugar in their foods so I designed my own study to investigate this question. I created a twelve question survey and gave it to 34 fifth and sixth graders at The Sharon Elementary School. The students were asked to guess how many teaspoons of sugar are needed daily.

They were also asked to estimate how many teaspoons of sugar are in a given amount of Coca Cola, M&Ms, Cinnamon Toast Crunch, a jam filled donut and blueberries. Finally, students were asked to compare the sugar content in yogurt versus Ice cream, Red Bull versus Mountain Dew and Cinnamon Toast Crunch versus Raisin Bran.

I found that only 23% of students answered half or more of the questions correctly. This suggests that young people are not very aware of how much sugar they are taking into their bodies on a daily basis.

The final question on the survey was "What are some of the ways people can avoid sugar?" One of the answers was, "You can avoid some of the sugars you eat by buying natural food and healthy food". Another answer was, "By eating healthy and eating a little less sugar each day." Even though the students didn't have a good idea of how much sugar is in their food, they knew that it would be "healthy" to avoid sugar.

Sugar is hidden in much of our food. To help people make more healthy choices companies should be required to clearly label the number of calories that are present in a food in a food from added sugar.

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Patents Aren't All Perfect

Cedar Souligny

Have you ever come up with a brilliant idea, only to find that someone else has stolen it from you? A patent protects your idea from being copied by anyone else for a certain amount of time. Many seed companies, like Monsanto, patent their genetically modified seeds. Genetically modified means, "an organism whose genome has been altered by the techniques of genetic engineering so that it's DNA contains one or more genes not normally found there (Benefits). Monsanto's patented seeds have affected agriculture both negatively and positively.

> "A patent protects your idea from being copied by anyone else for a certain amount of time."

When Monsanto created the famous Round Up seed in 1971, they patented the product. Monsanto's new seed was genetically modified to resist pests, and to survive high levels of chemical contact. The company decided to patent the seed, and the product became extremely popular. Because Monsanto patented their product they were able to insure that all the profits would be coming to Monsanto.

There are many benefits to using patented GMO seeds; there is a better chance that the crop will survive the season, produce a bigger crop, and be pest free. GMO seeds can be a more affordable option than gambling with growing organically (Kruf). "Genetically-modified (GM) seeds are a significant step forward in the production of agricultural crops" (Kruf).

However, patented seeds that are genetically modified threaten small organic farms. Monsanto's patented seeds are not saved by farmers. A certified organic farmer must prove that he or she is protecting natural resources, conserving biodiversity and using only certified substances on crops. When an organic farmer is located next to a neighbor using Monsanto patented seeds those patented seeds may spread onto the organic farmer's fields when the wind comes through. These crops can't be certified organic (Organic).

Seed patents are not only making it hard for small organic farmers to grow certified organic crops, some farmers are being sued for saving patented seeds. Patents allow large companies like Monsanto to sue farmers who are saving seeds that are patented, even though the farmers caught saving seeds are not always using Monsanto products. The Monsanto seed simply blew into their fields. Monsanto has filed 138 lawsuits publicly, and have gone to court with nine of those lawsuits ("What is Modern). Monsanto has won every court case they were involved in. Most farmers who start by going to court against Monsanto will eventually drop the charges because they do not have enough money to go up against a multi-billion dollar corporation. ("What is Modern). Monsanto usually proposes something along the lines of, "We will not take this to trial if you drop the case and start using our farming products." The Organic farmer will then have to forfeit their organic certification to make this deal ("What is Modern).

On the positive side, allowing companies like Monsanto to patent seeds encourages them to spend money on research to further understand the science of food growth. Investing in genetic modification means that scientists explore DNA and find more breakthroughs that make crops easier to grow or help food to last longer on the shelf. Monsanto's mission is to make the perfect crop, because doing so could potentially cure hunger (Benefits Of). Monsanto's science could end hunger in the United States. Their genetically modified crops could make a product that could supply food insecure citizens.

However, Monsanto's patents tend to be destructive towards small research companies. Large research institutions like Monsanto put small scientific research laboratories out of business, because small labs cannot compete. If one company controls all research into seeds, this will eliminate crop diversity and public access to free, unpatented seeds. Monsanto spent 1.5 billion dollars on seed and farming research in 2017 (AG Professional). In contrast the U.S. government has a budget of four billion dollars for food and agriculture in 2017, which they divide among thousands of small companies and organizations (Kruft). Monsanto has an economic advantage, which means they can make cheaper seeds and put smaller companies out of business. The research done by large companies like Monsanto also results in universities spending less time and money on developing public seed banks. A public seed bank is a depository where seeds developed by research institutions like universities are freely available to farmers (AG Professional). When only a few corporations are supplying the majority of farmers with seeds, small universities and small research companies don't receive as much funding, which limits research on seeds. Over time this can create a monopoly over seed production (Kruft).

> "It is not all black and white, and patents are not good or bad."

Monsanto negatively impacts small farms in many different ways. When creating a new product that must go through legal processes, Monsanto makes sure that the person making the decision will be on their side. This is unjust and hurts the growth of small farmers. For example, Clarence Thomas, a Supreme Court Justice was also an attorney for Monsanto (Food Inc) was involved in a case that concerned seed saving policies. The conclusion of the case found that farmers could not save their own seeds because of Monsanto's patents. There are many officials making decisions about have some form of bias, because

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Sugary Drink Tax, Yes or No

Beckett Lapp

Our government taxes products like cigarettes and alcohol; could sugary drinks be next. When people consume too much sugar, it can cause diabetes. A proposed solution to this problem would be to put a tax on soda and other high sugar beverages. The number of people diagnosed with diabetes as of 2014 was 30.3 million people (National). In November of 2014 Berkeley California became the first municipality to put a one cent tax on sugar sweetened beverages (Sifferlin). The tax effects sodas and sugar sweetened beverages, like energy drinks and Gatorade. However, diet sodas and unsweetened drinks, like V8 and Vitamin Water, avoid the tax. The money from these soda taxes go towards education and other public welfare initiatives. It is working sot that well other cities like Philadelphia, San Francisco, and Oakland California have also placed a tax on soda. These municipalities are taxing soda to try to lower the rate of obesity and the number of people who have diabetes. But might be the effect of doing this?

Drinking too much soda can lead to significant health problems, because soda is high in sugar. For example, a single 12 oz can of Coke has 40 grams of sugar which is more than the daily recommended amount of 25 to 37.5 grams (How). The high sugar in soda can lead diabetes. According to the CDC, the number of people who had diabetes in the U.S. from 2011 to 2014, was 12.6% and the number of people going to the ER for diabetes related illnesses was 14 million (National). Not only does soda have high levels of sugar, ¨Soft drink intake also was associated with lower intakes of milk, calcium, and other nutrients¨(Vartanian). Therefore, when people are drinking soda, they are less likely to beneficial nutrients found in healthy beverages. A tax on soda could positively affect people, because it might discourage people from buying soda, and instead select the untaxed, healthier options. After a soda tax was introduced in Berkeley, ¨Sales of sugar sweetened drinks fell by 10% and sales of water increased by 16%¨ (Sifferlin). Also, one year after the tax took effect the sales of other unsweetened drinks increased in Berkeley. Taxing sugary drinks can help address the health problems caused by soda consumption and because of this more cities are considering a soda tax.

Taxing soda has helped some cities generate revenue that goes toward wellness and community programs. In Berkeley, money from soda taxation ¨fund[ed] pre kindergarten programs and parks [and] some of the extra revenue [paid] for social services like disability benefits for workers and programs that help the homeless¨ (Dixon). In January of last year, Philadelphia generated 39.3 million dollars from their soda tax (Sifferlin).

Opponents of the soda tax argue that it would result in a loss of jobs in the beverage industry because these companies might lose profits. However, a study published by the American Public Health Association. showed while this did happen in Illinois and Californi, the losses were negated by other jobs that were created. A study of the impact of soda taxes showed, ¨Increased employment of 4,406 jobs in Illinois and 6,656 jobs in California, representing a respective 0.06% and 0.03% change in employment¨ (Powell). While some jobs were lost there were more jobs available in non-beverage industries.

So should people be allowed to pick what kind of drinks they want to consume? Or should the government tax sodas as a way to influence their drink choices?

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Temple Grandin's Contribution

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and losses at the slaughter plants. She has done presentations at CSU to farmers and others who want to learn about the slaughter industry. She has published several hundred industry publication chapter books and technical papers on animal handling plus 62 referenced journal articles in addition to ten books (Grandin).

Although Temple Grandin did a great deal to make slaughterhouses more humane for cattle, her work is only a start. For example, it isn't clear how many slaughterhouses in the U.S. use the techniques recommended by Temple Grandin. Some websites claim that about half of slaughterhouses use her designs, but it is not clear where this statistic is coming from. Also, even if it really is 50%, that is not good enough if you believe that all cattle should be treated humanely. Additionally, the broad, nonspecific guidelines of the USDA to protect animals in slaughterhouses could sidestep some of Grandin's recommendations (USDA). If people want humane conditions for all slaughter animals one way to start is to be more conscious about the conditions of the animals they eat. Consumers could demand accurate labeling information, more specific USDA guidelines that guarantee humane conditions by using Grandin's ideas, and easy access to information about slaughterhouses and their pratices.

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WHAT MILK DO YOU GOT? Raw or Naw?

Daniel Henderson and Chase Conway

Did you know the milk you drink could be lacking in important nutrients? This is because the milk that you buy in retail stores is pasteurized. Originally all milk was raw; it wasn't until 1864 that Louis Pasteur invented pasteurization. Pasteurization involves heating milk to kill harmful bacteria and organisms. However pasteurization destroys several beneficial enzymes and vitamins that are naturally found in milk (ProCon).

In Vermont, raw milk is prohibited from sale in retail grocery stores but is allowed to be sold on farms as long as it carries a written warning (ProCon). The question is which option is better, unpasteurized milk sold on local farms or pasteurized milk sold in grocery stores? This article tries to answer that question by comparing the health benefits, the profits to farmers, the cost to consumers and the effect on the environment of the two types of milk.

PRO

Raw Milk is Healthier than Conventional Milk

Raw milk is not pasteurized, which means it contains many important enzymes and nutrients. Some of these that are broken down by pasteurization include amylase, which breaks down starch, glycogen and other related carbohydrates. Another enzyme, destroyed by pasteurization is lipase, lipase breaks down fatty acids in the body. One of, if not the most important enzyme that is destroyed in the pasteurization process is lactase. Lactase deficiency can lead to lactose intolerance. Once the body matures it can't make lactase, and without taking supplements or eating foods containing it, the side effects can be unpleasant (More About Enzymes). Raw milk also carries helpful bacteria that can aid digestion. It also contains protein, carbs, good fats and important vitamins and minerals. Raw milk has both water and fat soluble vitamins, with both being great contributors to health. The biggest mineral in raw milk is calcium. There is calcium in both raw and pasteurized milk but there is a lot more in raw milk. Calcium builds high density in bones and strong teeth. "Enzymes are vital to all life, they help produce cells and help with digestion and metabolism. These enzymes are destroyed during pasteurization, making pasteurized milk harder to digest" (Is Raw).

Small Farms Benefit from Selling Raw Milk

Farms that sell raw milk are able to make more of a profit. These farms usually sell their raw milk for up to $10 per gallon. When a company pasteurizes milk, the farm can lose their profit from $.33 to a $.69 per gallon (Economics). This causes small dairy farms to go out of business. Pasteurized milk is usually made from the milk coming from large industrial dairy farms. These farms can produce milk more cheaply per gallon because of their high level of mechanization so they don't need the extra profits gained by selling raw milk. The downside of industrial farms is that cows on these large farms are treated less humanely than cows on small local dairy farms. (Food Inc). One way for small dairy farms to survive is when consumers buy raw milk.

Pasteurization Causes Pollution

In the process of pasteurization heat is needed. Fossil fuels are burned to create the heat (Greenhouse). Burning fossil fuel releases carbon dioxide and methane into the atmosphere. These gases in the atmosphere trap heat from the sun's rays which contribute to global warming (Dairy). In addition more transportation is involved with pasteurization. Trucks need to carry the milk to the pasteurization facilities and this again burns fuel to run the trucks and refrigerate the milk during transportation. So, pasteurizing milk is one more small way humans contribute to warming the atmosphere.

CONCLUSION

In summary, raw milk has more nutrients,beneficial bacteria and enzymes than pasteurized milk. Also the sale of raw milk helps support small local farmers. In addition it eliminates the pollution resulting from the process of pasteurization

CON

Raw Milk could have Unhealthy Bacteria in It

Pasteurizing milk takes away all the harmful bacteria to make it safer for human consumption. The menacing bacteria that raw milk could be holding are Salmonella, E. coli and Listeria. These bacterias are most commonly the causes of foodborne illness. Unpasteurized dairy products cause around 760 foodborne illness and 22 hospitalizations annually in the United States (Is Raw Milk More Harmful). The people who are struck hardest by these illnesses are those with weaker immune systems, such as older adults, pregnant women, teens and young children (Center).

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Is Pizza a Vegetable?

Kenneth Lyman, Marcy Innes, and Fallon Abel

Have you heard the news that pizza is actually a vegetable? On November 15, 2011, Congress declared that pizza is a vegetable. An earlier proposal by the USDA did not include tomato paste on pizza to be a vegetable. This law affects schools almost everywhere in the U.S. The law passed so pizza can mainly be sold in schools so food companies can make money. There are pros and cons to labeling pizza as a vegetable (Linkins).

One benefit of declaring pizza a vegetable is that the tomato sauce on it has many of the same nutrients as a tomato. Both have lycopene, which helps prevent the occurrence of cervical cancer and asthma, as well as reduce symptoms of depression in individuals. In fact, tomato paste on a pizza might be a better source of lycopene because, "A second study shows that lycopene from tomato paste is better absorbed by the body than lycopene from fresh tomatoes, suggesting that processed tomato products such as tomato paste, tomato sauce and ketchup is a better source of this antioxidant" (Jalonick).

Another benefit is that tomato paste is just as healthy as an apple. One eighth of a cup of tomato paste and a half-cup of apple have about the same percentage (5% and 6%) of the daily recommended amount of sugar and dietary fiber (kliff). Tomato paste has less sugar and higher dietary fiber than an apple. Tomato paste also has higher protein, calcium and potassium than an apple. So as you can see, there are some benefits to counting pizza as a vegetable (Kliff).

One of the downsides of considering pizza as containing a vegetable serving is that it has more cholesterol than other vegetables. Vegetables alone don't have cholesterol. However, one slice of Pizza Hut cheese pizza has 24 grams of cholesterol in it. "[Certain] foods are high in saturated and trans fat. That's a problem because these fats cause your liver to make more cholesterol than it otherwise would. For some people, this added production means they go from a normal cholesterol level to one that's unhealthy"(Cholesterol 101). By serving school children foods that are high in cholesterol we are setting them up for future health problems (Cholesterol 101).

Another downside is that the tomato sauce on pizza can have more sugar in it than it needs. Tomato sauce companies have been adding sugar to tomato sauce to enhance the flavor. One cup of tomato sauce has ten grams of sugar in it (Tomato). The average person needs 37.5 grams or 9 teaspoons of sugar per day (sugarscience). This means that pizza could have close to 27% of a person's recommended daily intake of sugar (sugarscience).

Another problem with considering pizza a vegetable is that most of the pizza toppings on school lunch pizzas are high in fat and made from processed foods. One ounce of pepperoni, for example, contains twelve grams of fat (Pepperoni). That is eighteen percent of an average daily amount of fat. An individual needs about sixty-seven grams of fat everyday, so a serving or two of pizza adds a significant amount of fat to a child's diet.

> **"On November 15, 2011, Congress declared that pizza is a vegetable."**

Children often throw out the fruits and vegetables provided in school lunches, but they would be more willing to eat pizza if it were a vegetable (Pawlowski). Because of this, pizza is a good way to get them to eat a serving of vegetables. Researchers went to elementary schools to find out what foods kids were throwing away. "[Researchers] recalled visiting one cafeteria where the school placed a basket of apples and asked kids to take one… [They] saw countless children just going to the disposal area and… immediately throwing it out without even proceeding to sit down and try to eat the apple" (Pawlowski). Such an action opens the door for more, unhealthier replacements in our School Lunch program (Drayer).

There are many pros and cons to labeling pizza as a vegetable. One benefit is that the tomato sauce on pizza has many of the same nutrients as a tomato. Another benefit is that tomato paste is just as healthy as an apple. However, there are some disadvantages. For example, a serving of pizza has more cholesterol than other vegetables, and the tomato sauce on pizza has more sugar in it than vegetables. There are many things to consider. So next time you eat pizza just remember that the tomato sauce is a vegetable.

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What Part of the Chicken is the Nugget? What Part of the Cow is the Burger?: Pink Slime in Our Food

Leah Foster

Did you know, 70% of all beef and poultry products as of 2012 contain Pink Slime? (Siegel). Pink Slime is an additive for beef and poultry products used in fast food chains and supermarkets (Engber). Pink Slime was created in the late 1980's by Eldon Roth (Pink). Roth found a way to make beef trimmings wholesome by separating the fat more fully. In 1991 the USDA approved the meat mash for wider use calling it lean finely textured beef (Yoquinto). Pink Slime uses actual beef or poultry as well as tendons, arteries, carcass, bones and parts of the animal that we wouldn't even think about eating by itself (Yoquinto). These are left over parts of the animal that would get thrown out otherwise. Since these parts are often exposed to manure, they can be loaded with harmful pathogens (Yoquinto). Thus, companies inject ammonium hydroxide gas -- which is also used as a cleaning product and in the manufacture of plastics, explosives, textiles, pesticides, dyes and other chemicals (Cherr). BPI, Cargill, Tyson Foods, and others, are all companies who use Pink Slime in their beef and chicken products (Cherr). They distribute them to food companies, who then sell it to the public through supermarkets, fast-food chains, and school cafeterias. So before you bite into your next chicken nugget or burger at that fast food place you love, consider these pros and cons of Pink Slime.

> "Our food has contained quantities of Pink Slime for the past 30 years."

Proponents of Pink Slime argue that it benefits the environment because it incorporates the 'whole animal', using parts that would otherwise be discarded. Pink Slime is "Made from the trimmings of the animal, lean bits derived from muscle and connective tissue" (Laskawy). Pink Slime also reduces demand for other meat products. Thus, the production of Pink Slime saves 1.5 billion cows from slaughter every year (Abraham).

Our food has contained quantities of Pink Slime for the past 30 years. When processed correctly, Pink Slime does not have a negative health effect (Cherr). The companies who make Pink Slime use ammonia to kill bacteria and harmful viruses (Siegel). Ammonia is safe in small amounts and it is a waste product that our bodies are good at getting rid of (Siegel). However, Pink Slime can become unsafe due to high levels of ammonia. There have been three documented cases of dangerous levels of ammonium hydroxide in foods, including one from a school whose lunch made some students sick (Dworkin). It was reported that the chicken smelled like chemicals and was undercooked (Dworkin). It was later discovered that the chicken tenders at the school had ammonia on them left over from a spill in a factory that went unchecked (Dworkin). While processing using ammonia generally has been safe, there have been cases of negative health impacts.

Pink Slime can contain harmful pathogens if processed incorrectly, since processing is not always 100% clean and effective. Pink Slime is processed meat that was "previously considered unfit for human consumption because of its high rate of pathogens" (Yoquinto). Pathogens are bacteria and viruses that can cause diseases. The use of the outer cow carcass makes the meat is more susceptible to E. Coli, Salmonella and other diseases. Even though the use of Pink Slime is USDA approved, "20 percent of ground meat obtained in supermarkets contains Salmonella" (Abraham), Pink Slime has been banned in the European Union, and ammonium hydroxide gas has been banned by the meat industry in Canada (Pink). Why is the use of Pink Slime approved in the US if other countries deem it unfit for consumption?

> "These companies prefer labeling their products 'lean finely textured beef'

Pink Slime will probably never be labeled as Pink Slime in a grocery store because of the stigma around the phrase. For years now the USDA has approved brands and big meat corporations to label their products differently to avoid using of the word "Pink Slime". These companies prefer labeling their products 'lean finely textured beef' (Engber). BPI, Tyson Foods, Cargill and others have refused to label products that contain Pink Slime. "If the product contains only 15% of actual beef it can be labeled as real beef "(North). When ABC News published a report that used the term Pink Slime, BPI sued ABC News for loss of profits. BPI claimed that the "sudden public awareness of something with such an unappetizing name [had] cost them business" (Siegel). The article about 'Pink Slime' lead them to close three plants and lay off more than 700 workers (Siegel).

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Salmon Farming

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Lastly, there is a lot of salmon waste and fish feed that gets through the nets, which affects the environment. The waste that gets through the nets contains chemicals and pesticides. Clam beaches used by First Nations in the Broughton Archipelago (the area with the highest concentration of salmon farms in BC) have been destroyed by the accumulation of black muck and sludge that has been attributed to salmon farm waste (Chemical). The black muck is what happens when fish feed and waste builds up on the ocean floor. The black muck destroys all of the wildlife and habitats of fish and marine mammals. Clearly salmon farming can be destructive to the natural environment.

There are not many ways to get salmon in the grocery stores without fish farming. The other alternatives would be not using nets, but using floating containers or moving salmon farming to land. Using pesticides and chemicals is not only impacting the wildlife, but the environment too. Nets that cause debris and aquatic animal deaths are having an enormous impact on the environment. The compact environment that the salmon are forced to live in causes diseases and bacteria to form, and these diseases can have decimating impacts on the salmon species. Salmon farming works only for short amounts of time, but in the long term, the effects are devastating to the environment and its wildlife.

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Life of an Organic Strawberry

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(Ahmad)? It was so sad to hear about those poor humans and how their working conditions are absolutely terrible.

So the next time you are deciding where to get your strawberries, come on down to Cedar Circle Farm and pick some of your own!

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Patents Aren't Perfect

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of their financial ties to the company. Another example is Wendell Murphy, a North Carolina State Senator who is on the board of directors for Smithfield, a company owned by Monsanto. When laws are being made about Monsanto's seeds in Carolina, Wendell could feel obligated to vote in Monsanto's favor. Margaret Miller was a chemical lab supervisor for Monsanto, and works for the FDA (food and drug administration). Margaret may not have the same professional opinion on Monsanto's products, because of her previous employment.

In addition, Linda Fisher was the vice president of Monsanto and also the EPA (environmental protection agency). Deputy Administrator. Michael Taylor King, a Spauldings graduate, is also the vice president of public services in the Monsanto corporation. These administrators and their decisions are all a conflict of interest. These people are most likely not thinking about the common good, but about how their decisions will benefit them, and Monsanto (Food Inc).

In conclusion, there are many factors to consider when debating patented seeds and Monsanto. I began my research on this topic strongly disagreeing with everything that Monsanto was doing involving patents and other GMO products, but after learning more, I am extremely conflicted about Monsanto and patented seeds. It is not all black and white, and patents are not good or bad. Monsanto has benefited our society by expanding our understanding of agricultural science and creating efficient methods for farmers to grow their food. However, it has also negatively impacted the nation by reducing the amount of diversity amongst seeds and crops, and taking business away from small organic farms. This debate boils down to one question: do you agree with genetically modifying and owning a part of nature? Or do you believe that food should be grown locally and not owned by corporations? I believe that patents are not destroying our agricultural community, but they are drastically changing it. This change could be beneficial if we became more educated on the matter and encourage companies to inform us about what they are doing.

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Are Vermont Slaughterhouses Superior to "Tyson Chicken" Slaughterhouses?

Metro Sedon

Are Vermont slaughterhouses superior to industrial slaughterhouses? Specifically, are the smaller slaughterhouses in Vermont more humane and safer for their workers than a large industrial slaughterhouse like those run by Tyson Chicken? The short answer appears to be yes, but actually it's more complicated. Tyson Chicken is a very large, well known company with lots of slaughterhouses headquartered in Springdale, Arkansas. There are many small, independent slaughterhouses in Vermont and each one is run differently. The main Vermont slaughterhouses researched for this article were: Vermont Packinghouse, Westminster Meats, and Braults Meat Market and Slaughterhouse. A lot of the slaughterhouses in Vermont are humane, but how do they compare to each other and to the larger industrial plants operated by a large corporation like Tyson Chicken?

> **"When purchasing meat, one has to consider not just the conditions at the slaughterhouse, but also those conditions the animal experienced up to its slaughter."**

A popular impression might be that all Vermont slaughterhouses are cruelty free. While it is true that generally speaking, smaller operations are less likely to create inhumane conditions, there have been some noteworthy exceptions. Vermont Packinghouse has been sued multiple times for animal cruelty and failure to stun animals before slaughter (Weiss). When an animal is slaughtered without being properly stunned, it becomes very stressed. (Shaheen). Tyson has also been accused of animal abuse many times. For example, People for the Ethical Treatment of Animals or (PETA), an animal rights organization, did an undercover investigation and obtained videos of animal abuse (Exposed). The video showed the chickens being hit, squeezed, and just abused while some of the butchers were urinating on the slaughter line. This is more extreme than what goes on in Vermont Packinghouse, but they are both examples of animal abuse and both need to be acted upon. So a question that remains is whether this abuse is just more significant because of the size of the plant or because of the guidance from the management of the specific slaughterhouse. If the worker feels less like a part in a giant machine, and more like a member of a company team, will they be less likely to abuse the animals?

In addition to animal abuse, a question that is often raised about slaughterhouses is the treatment of the workers at that plant. Are the workers safe? Do they get paid well to do their work? Is it possible that with better worker treatment, less animal cruelty would occur? Certainly something that is not different between Tyson and small Vermont slaughterhouses is that they both underpay their workers. A Vermont butcher usually makes about $13 an hour, which is an annual income of $28,000 a year (Wages). A Tyson butcher can be paid 12-14 dollars an hour (Tyson), which is also hardly a living wage. In Vermont, a lot of people live in rural areas and have low incomes, which means they have to drive longer to get to the supermarket, and spend more on gas, respectively. It seems logical that when workers are paid low wages, they are more likely to be stressed and angry and abuse the animals. However, when workers feel like they are part of a team, have a say in how they plant is run, and receive a livable wage, the likelihood that they will abuse the animals may go down.

A major part of quality working conditions is workplace safety. Copious research revealed that there are very few workplace related injuries at Vermont slaughterhouses. In addition to finding nothing in regional newspaper archives about this topic, there was also nothing recorded on the Occupational Safety and Health Administration(OSHA) website. This website records all workplace injuries which required an employee accessing workers compensation programs or created changes in the workplace insurance. This lack of data seems to indicate that there have been little or no significant workplace injuries at Vermont slaughterhouses in recent years.

Tyson has a very different story. Tyson Chicken was sued $263,000 for 15 different injuries, and according to OSHA, the workers were exposed to high levels of carbon dioxide, peracetic acid, and lots of amputation hazards, which ended in gruesome injuries (Department). Some of the injuries are obviously attributable to working in less than favorable conditions.

Something uniquely positive that Vermont slaughterhouse do is support the community. A lot of the meat slaughtered at these slaughterhouses is given to organizations like Farm to Table, which gives area schools and organizations good local foods. This is good because kids can eat a lot healthier at schools. Industrial slaughterhouses actually do the opposite. It might not be happening in our community, but Tyson does affect others. About 2.5 million Dayak indigenous people were displaced so that Tyson had could harvest palm oil (How). This is a great injustice, and just might be one of the biggest problems with Tyson chicken.

One significant difference between Vermont slaughterhouses and their larger industrial competitors is the way in which the animals are raised before they arrive at the plant. Most of the animals processed at Vermont slaughterhouses were raised in open fields and given ample space. They come from smaller farms where the farmer is less likely to treat the animal poorly. At industrial slaughterhouses, animals are stored in confined spaces and sometimes raised without ever experiencing a pasture. This is not directly related

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Advertising Influences Children

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be like them. Unfortunately, that can lead to unhealthy choices. In a study of 163 celebrities and 590 endorsements, none of the foods endorsed were fruits, vegetables, or whole grains (CNN). Only one food, pistachios promoted by a South Korean rapper named Psy, was healthy. In a Pepsi endorsement, Beyonce pushes a shopping cart full of Pepsi soda. In a single 12 ounce can of Pepsi there is 33 grams of sugar. That is eight grams more than children ages two to 18 should be consuming per day (American Heart Association). Another advertisement shows Justin Timberlake singing the McDonald's jingle, "I'm Lovin' It." In a small happy meal there are 1.6 grams of salt even though children aged one to eight should only have one gram of salt per day (livestrong.com). Other endorsed products were Dr. Pepper, Snapple, Pop Tarts and other sugary drinks and snacks. Many people think that celebrities should use their fame as a platform to promote healthy eating among fans, but others argue that they would not make enough, since unhealthy food has most of the advertising money.

Children are also exposed to food ads in the supermarket where they see fun, bright packaging and prizes like toys for buying and eating it all. A study done by the University of Bonn had 179 children choose between three yogurt snack bars identical in taste. The first had ordinary generic packaging, the second had packaging that showed all the health benefits, and the third had fun packaging with bright colors, cartoon characters, and a catchy name. The overwhelming majority of children wanted the third just because of how it looked on the outside. "The results show that the children's motivation was greatest for the snack in the packaging with the enticing cartoon characters" (Science Daily). This experiment demonstrates that the same techniques used on unhealthy food can also be used to make healthy food more appealing to children.

> **"In a study of 163 celebrities and 590 endorsements, none of the foods endorsed were fruits, vegetables, or whole grains."**

Another concern with gearing ads towards children is that it contributes to childhood obesity. Children begin to pester their parents to buy the foods they see in ads even if they have never eaten it before. And although not all parents give in to the child's "pester power", many parents do. "Pester power" is actually something companies discuss when designing advertisements (American Psychological Association). Children should to be taught how to recognize ads from actual content. In one study, children went on a website embedded with ads and only a quarter of the six year-olds in the study could distinguish ads from content (American Psychological Association). Clearly, parents and educators have a role to play in helping children recognize healthy and nutritious foods.

Considering how advertisements affect children, should there be rules or restrictions about what types of food can be marketed to kids? Some argue that children's channels, kid's products, and schools should be prevented from advertising unhealthy foods. Others think that parents need to be responsible for teaching their children about healthy food choices. What should be done to improve the health and well-being of impressionable children?

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Good Food Gone Bad

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Canada's canola, 90% of Argentina's soybeans, 50% of the U.S.'s soybeans, and 33% of the U.S.'s corn was all genetically modified" (Sacerdote). Particularly in the U.S., the food supply is controlled by big international farming corporations. "We Americans get 6 million pounds of corn from Mexico" (Sacerdote). There is no way that a small, independent Mexican farmer can compete with that kind of production, earn livable wages, or meet their opponent's distribution power. However it is transported—by truck, plane, or boat—all this shipping of crops is causing a lot of air pollution, and that's terrible for our environment as well.

The film, *Fed Up!* is a great documentary about the downside of industrial farming. It exposes the shocking increase in the use of pesticides, Genetically Modified Foods, and the impact this kind of farming has on other countries. It has been sixteen years since this film was made, and the number of GMO foods has skyrocketed as has the amount of pollution created by the corporate farming industry. Why does our culture try to dominate nature—as opposed to living alongside it—naturally? When you bite into that apple, you might ask: "What pesticides am I ingesting?" "Do I know what GMOs went into making this food?" "Do I know if another culture has been impacted the price here in America will be less?" Yes. Quite literally, pesticides, GMOs, and Americanized industrial farming are changing the way the world eats.

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Just Drink it? Hydration for Optimal Athletic Performance.

Beth Dobrich

Is what you're drinking affecting your sports game? Does Gatorade give athletes the right balance of electrolytes, sodium, and carbohydrates? Or would they be better off sticking to water? At sporting events, players are flooded with sports drink advertisements. These drinks are everywhere, they're sold in vending machines, at concession stands, and in convenience and grocery stores. These drinks are highly visible, but are they effective in hydrating athletes?

Sports drinks didn't exist until a chemist named William Owen from England created the first sports drink in 1927. He made it by mixing glucose and water. It took about 40 years for the American market to embrace the idea of sports drinks. Gatorade was the first sports drink; it was designed for the University of Florida football team in 1965 (A History) .The purpose of sports drinks is to provide "carbohydrates for energy plus minerals to replace lost electrolytes in your sweat" (Zelman). Electrolytes are chemicals that manage electricity when mixed with water. They control muscle and nerve function and hydrate the body (Felman).

Athletes expect that sports drinks will improve their performance because the companies claim it will. The companies use professional athletes to endorse their products. These companies believe if people see a popular athlete use their product then they will too. People argue about the best method of hydration for an athlete. Which is better? Gatorade, Powerade, Smart Water, protein shakes or plain water? None of these are necessarily wrong, but some are better than others.

> "Electrolytes are chemicals that manage electricity when mixed with water."

While Gatorade has been shown to hydrate athletes, it also has some downsides. Gatorade contains sugar and electrolytes, like potassium and sodium. It replaces what athletes lose when exercising or being active. "Gatorade was developed to replace crucial electrolytes and carbohydrates while hydrating you at the same time" (Gatorade). There are about 450 milligrams per liter of sodium in Gatorade. When working out the average person loses about 900 to 1400 milligrams of sodium per liter of sweat (Crowther). It is important to replace sodium because sodium is an important component of blood, without which your blood would not be able to retain the water you drink (Crowther). Gatorade also contains 6% sugar which is the right amount of of sugar an athlete needs while working out. The recommended amount of sugar an athlete should have is 4-8% (Crowther).

Powerade has 8% sugar which is just barely the recommended amount (Crowther). As a matter of fact, Powerade has more vitamins and minerals than Gatorade does (Crowther). Powerade has B3 and B6 in it which helps keep the body running smoothly (Bogas). B3 helps the body improve circulation and suppresses inflammation. Powerade also has 225 mg of sodium. This means, if athletes are drinking a lot it could cause problems. Powerade has high fructose corn syrup where as, Gatorade doesn't. High fructose corn syrup is an alternative to table sugar, and both can cause health problems. High fructose corn syrup can lead to obesity, type 2 diabetes, high blood pressure, and heart disease. Powerade overall has more sugar than recommended but it has vitamins that Gatorade doesn't.

> "As a general rule, if a workout lasts longer than an hour, then a sports drink is a good way to replace electrolytes and carbohydrates."

Water is "the go" to drink for many athletes, but is it really the best? All sports drinks have sugar, where water doesn't have any. Sports drinks give an athlete unnecessary calories too. Some contain so much sugar it is equivalent to 10 tablespoons of sugar (Gatorade). Dr. Clare MacCarthy thinks that children should not have sports drinks and water is better for them. Athletes can burn 100 to 550 calories in an hour depending on what they are doing. If a workout lasts less than a hour, water would be best because what they loss in a hour workout can be put back in either later in the day or through drinking water during your workout.

Smart Water has the electrolytes that an athlete needs but it is healthier than a normal sports drink. Smart Water doesn't have any calories and contains

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Cabot Versus Kraft Cheese

Blair Locke and Pam Ward

What are you supporting the next time you buy cheese? I decided to look into the differences between Cabot extra sharp cheddar cheese and Kraft extra sharp cheddar cheese to answer this question for myself. These are two choices that are available to me in my local grocery stores. I wanted to figure out which one I should buy when I want cheddar cheese. I compared the cheeses by looking at nutritional value, ingredients, the cost, the taste, working conditions, animal conditions and environmental impact. This helped me decide which one to buy.

> "A comparison between the nutritional value and ingredients for both cheeses shows that Cabot cheddar is only slightly different than Kraft cheddar."

A comparison between the nutritional value and ingredients for both cheeses shows that Cabot cheddar is only slightly different than Kraft cheddar. Cabot has 10 milligrams more salt and 1 gram more of protein and 1 gram less of fat per serving (Sharp). The ingredients are also similar except that Kraft cheddar has a natural mold inhibitor, natamycin, which is not in Cabot cheddar (Cracker).

The cost of the cheeses depends on where the cheese is purchased. This is because the farther away from the manufacturer, the higher the cost, in part because of transportation costs (Frequently). In New England the cost between the two cheeses is not that different.

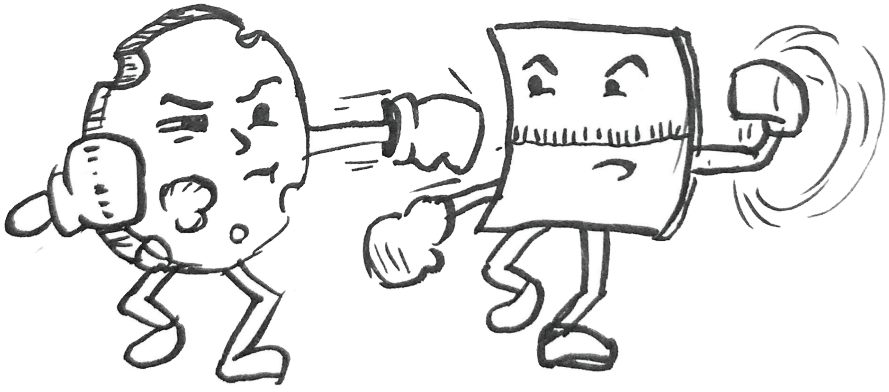
Sampling a few grocery stores in the West Lebanon NH area, shows Kraft Cheddar to be about 20 to 50 cents more than Cabot for an 8 ounce block (Walmart). This is not surprising in New Hampshire because Cabot cheese is made in the New England and New York area and Kraft is made mostly in the midwest (The Kraft).

One way I compared the conditions for workers between the two companies producing the cheese is by looking at the overall business structure of the two companies. Cabot is a cooperative which means everyone has equal ownership and gets a say in what goes on and shares profits equally (B Corporation Cabot). Cabot is run by about 1,100 farms across New England and New York (Cheddar). Kraft, on the other hand, is a large multinational corporation which means it's owed by shareholders and the owner of the business (Great). The people who receive the profit are the shareholders and owner. "The purpose of a corporation is to produce goods and services to a market and the purpose of a cooperative is to provide needs and services for its members" (Difference). Employees of Cabot are working in a more democratically run business where they have say and share profits (B Corporation Cabot).

Another way I compared working conditions was by looking at the wages for the lowest paid workers. According to the human resources team at Cabot Creamery they pay their production workers $14. - $17. An hour or more. According to the Kraft website, Kraft pays their production workers an average of $12.90 per hour (The range is $7.25 to $30.50 per hour in general) (Cheddar). The lowest wage workers at Kraft are paid almost half of the lowest wage Cabot workers.

A third way to evaluate workers' conditions is to understand the significance of Cabot's B-corporation membership. According to the Cabot website a B corporation is a company with a "...commitment to the highest standards of social and environmental excellence [which] returns meaningful benefits to all stakeholders and measures not only sound profitability, but impact on the communities they serve, and on the natural environment in which they live and work"(The Kraft). Cabot is one of 2000 members of B Corporations and 130 industries across 42 countries (The Kraft). In order to be certified as a B Corporation, companies must "meet rigorous standards of social and environmental performance" (B Corporation). This means worker conditions at Cabot must meet a high standard. Kraft is not B Corporation certified and therefore it's uncertain that the worker conditions meet the same standards.

I compared the animal conditions of the two companies by looking at the farms from where the milk comes from. Kraft has large industrial farms and Cabot has many small farms (The Kraft). There are fewer cows in the Cabot farms which means they can graze in the fields which means they have a lot of freedom (Email). Kraft has large farms where the cows don't have as much freedom (Email). Cabot farms are located in the communities where the local people can see what is happening to the cows and are



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Horsemeat In America

Maddie Johnson and Pam Ward

How would you feel if horse meat was an option at the grocery store? Horse meat, also called "chevaline", looks very similar to beef and tastes almost the same (Forrest) . With 149 calories and 24 grams of protein per 3 ounces and high in Omega 3s, fatty acids and iron, it is a legitimate alternative to beef (Forrest). In spite of this, the history of the use of horses in the US for human consumption is complicated. At various points in US history horse meat has indeed been available for consumption, however on ethical and legal grounds it mostly has been out of favor. Currently it is illegal in the US to sell or distribute horse meat for human food (Forrest) . However, horse advocates should be aware that Congress has recently proposed changes to several laws and regulations that protect horses, which could put horse meat back on the menu (Forrest). Stopping this will require people to understand this complex issue and take action.

Horse meat used as human food over the last hundred years has undergone fluxuations in popularity in the consumer market. Before the early 1900's horse meat was shunned in America (Forest) . Immigrants coming from Europe thought it was wrong to eat horse meat, and this idea followed them to the New World (Forrest) . Much later when street cars were invented and there was an abundance of unwanted horses, which drove down the price of house meat, it was still not desirable to eat horses . However in the early 1900's beef prices rose drastically when World War I broke out . Inexpensive horse steak was discovered and people turned to horse meat for cheap food. After World War I horse meat went back out of fashion when beef prices went down . Then during World War II horse meat was again used for human food, but again, after the war there was was huge political backlash and the market went back down (Forrest) .

By the 1970's work horses were replaced by tractors, and wild horses were under Federal protection making these horse populations less available for cheap meat (Forrest) . Still, the unwanted horse population grew because leisure horses were becoming more popular. When owners didn't want their old or hurt horses anymore it led to another surge in horse slaughter. At the same time beef prices were rising making horse meat comparably cheap and available on the consumer market . But by the 1980's beef prices crashed again so even poor Americans did not need to eat horse meat. Politicians began to pressure the horse meat industry, and horse packing plants dwindled in number. This meant that sick and injured horses had to travel long distances for slaughter. Also, the few slaughterhouses that existed were unregulated and had cruel conditions (Forrest).

In the late 1990's pressure from the public started to change the legality of horse slaughter (Forrest). Slaughter houses were being burned and there was much outrage around horse meat . In 2006 the Horse Slaughter Prevention Act passed the US House . Republican John Sweeney called the horse meat business "one of the most inhumane, brutal and shady practices going on in the United States today." However, this law still didn't directly outlaw horse slaughter for human meat. Instead it stopped federal funding for inspections of slaughterhouses effectively shutting-down the business because without inspections it was illegal to sell or distribute the meat. This lack of funding for inspection is still in effect today and as a result unwanted horses are being shipped to Canada and Mexico. Horses are vulnerable to abuse and inhumane conditions during the long trips to foreign countries and there is no oversight of what happens in foreign slaughterhouses (Forrest).

This complicated history shows that throughout US history, horse meat as human food has fluctuated in its legality and acceptability. It has been dependent on the price of beef, the number of unwanted horses and the laws regulating horse slaughter houses. Today is no exception to this complicated picture. Legislation is being considered that may once again change the availability of horse meat for human consumption.

In July 12, 2017 The House Appropriations Committee approved ending a ban on the USDA funding of inspections of slaughterhouses which would make it possible for meat inspectors to visit facilities where horses are slaughtered (Fact Check). This still has to be voted on by the House of Representatives according to a horse slaughter watchdog group (Humane Society).

Another bill proposed in January, 2017 (H.R. 113, a.k.a. the Safeguard American Food Exports Act of 2017) proposed amending the Federal Food, Drug and Cosmetic Act to "to deem equine (horses and other members of the equidae family) parts to be an unsafe food additive or animal drug" (Fact Check). The proposed bill also prohibited the knowing sale or transport of equines or equine parts for human consumption. In August, 2017, Sen. Bob Menendez (D-New Jersey) introduced a companion to this bill which would permanently ban the slaughter of horses for human consumption in the United States and the export of horse meat and the transport of horses to slaughterhouses in other countries (Fact Check). A year later these bills have not been voted on and are still in committee. The way it currently stands, at the end of January, 2017 the government could be allowing inspections of horse slaughter houses, while legislation that outlaws horse meat for human consumption is stuck in committee (Fact Check).

Wild horses add another variable to the horse slaughter picture. The Bureau of Land Management (BLM) spends about $50 million a year to house and feed more than 46,000 wild horses and burros in corrals (Brulliard). Another 73,000 of the animals roam freely across the western states, producing foals and grazing on public lands that conservationists and

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Got Beef With Your Burger?

Margot Frost

Ever criticized your mom's cooking, or complained about eating your greens at dinner? Well, be careful, because in some states criticizing food products could get you in trouble with the law. Food disparagement laws, loosely known as "veggie libel laws," are laws that make it so that food producers can sue their critics for libel. Libel is a published false statement that damages a person or company's reputation. "These food disparagement laws have come to be known as 'veggie libel laws' because they have often been used against animal rights and vegetarian activists working to expose the harmful consequences of meat consumption" (Published). These laws are enacted in thirteen US states, including Alabama, Arizona, Georgia, Idaho, Louisiana, Mississippi, North Dakota, Ohio, Oklahoma, and Texas. The first state to enact one of these laws was Louisiana in 1991 (Matt.). "These laws are designed to protect the agriculture industry from profit losses that arise from false claims" (Entertainment, Legal). The American Feed Industry Association was

> **"Libel is a published false statement that damages a person or company's reputation."**

greatly responsible for the creation of veggie libel laws. Food lobbying groups like American Feed Industry Association raise money to send representatives to convince lawmakers to make or change laws to benefit their interests. This is beneficial to these states in particular, because agriculture is their main industry. Proponents of disparagement laws say that workers also benefit from these laws, because the laws help to maintain and provide more jobs for the workers. By providing more jobs, the laws also provide more money for the workers, since the laws prohibit consumers from spreading false information, therefore not taking money away from the company. How have veggie libel laws impacted the nation, and what avenues exist for those who want to voice concerns about food products?

One way that veggie libel laws have impacted the nation is by preventing people from spreading false information about food. Libel laws in Colorado prevent and criminalize "knowingly to making any materially false statement" in a way that could potentially cause damage or unfair advantage within the food industry (Matt.). Another example of this is the Arizona law. That law prohibits "Malicious public dissemination of false information" concerning food (Matt.). From the food companies' perspective, such laws simply protect people from hearing and spreading lies.

Some consumers argue that veggie libel laws violate the First Amendment of the Constitution, which clearly states "Congress shall make no law… abridging the freedom of speech." The veggie libel laws directly violate this right, because consumers can no longer speak their minds about the food that they eat, therefore taking away from their freedom of speech. In the early 1990s, Oprah Winfrey, a famous talk show host and celebrity was sued by Texas Cattle Ranchers. She was accused of food libel based on a comment she made on her talk show, about so called 'Mad Cow Disease'. She said "The majority of cows are rounded up, ground up, fed back to other cows. If only one cow has mad cow disease, (it) has the potential to infect thousands...today, (in) the United States-14 percent of all cows by volume are ground up, turned into feed, and fed back to other animals" (Goetz). One of the reasons she won the case was because the judge ruled that she was exercising her freedom of speech. Our Constitution promises citizens the right to the freedom of speech. Consumers argue that by speaking our mind about the food that they eat, they are simply exercising that right.

> **"Even though veggie libel laws are meant to stop the spread of false information, in many cases, what people say about the food is true."**

Consumers argue that veggie libel laws violate their right to know what's really in their food. The Civil Liberties Defense Center argues that "Food Disparagement Laws completely contradict the Supreme Court's wisdom that the public should be allowed to participate without fear of reprisal, in debates about matters of social and political concern, even if they are controversial or potentially defamatory" (Published). Even though veggie libel laws are meant to stop the spread of false information, in many cases, what people say about the food is true. They simply don't have the resources or the money to prove the truth of their statements in a court battle against a large corporation. Since consumers don't have the financial resources to prove the truth about their claims, others can't learn the sometimes disturbing, yet true facts about the food they eat. The importance of being able to criticize the food consumers eat was stressed by the judge who ruled in Oprah Winfrey's court trial. He stated "It would be difficult to conceive of any topic of discussion that would be of greater concern and interest to all Americans than

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Pros and Cons of Raw Milk

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Important Nutrients are Still in the Milk

Pasteurization destroys the harmful bacteria and some nutrients, but the most important health benefits remain. Pasteurized milk is loaded with vitamins, just one glass of milk provides vitamin B2, riboflavin, thiamin and small doses of niacin, folate, vitamin C and vitamin B6(Milk facts). Pasteurised milk isn't just a good source of vitamins but also minerals such as magnesium, phosphorus, potassium and most importantly calcium (Milk Facts). Conventional milk's other crucial nutrients are protein, fiber and saturated fats. "Pasteurization does not impair the nutritional quality of milk fat, calcium, and phosphorus (Beddows). Pasteurization temperature does not affect fat-soluble vitamins (A, D and E), as well as the B-complex vitamins riboflavin, pantothenic acid, biotin, and niacin" (Ohio) . Pasteurized milk, unlike raw milk, is fortified with vitamins, like Vitamin A and Vitamin D (Milk Facts). Vitamin A is essential to a person's vision, their immune system and their reproductive system. Finally, Vitamin D helps the body absorb calcium, and a Vitamin D deficiency can lead to bone softening.

Pasteurized Milk is Cheaper

Pasteurized milk isn't just healthier, but it's also cheaper for the consumer. A gallon of pasteurized milk's average cost is about three to four dollars, while the cost of a gallon of raw milk is about ten dollars (Economics). Pasteurized milk isn't just cheaper for the consumer though, it also saves money for the farmers. Since raw milk isn't pasteurized, the cows have to be clean and free of harmful bacteria -- a process which costs money. There are many pre milking hygienics before the process begins. The farmers have to clean their own hands and the udders prior to milking. They have to clip the udders and tails, and dry the udder. The barn also has to be sanitary, the manure, soil and water cannot be contaminated. Also many farms do not encourage the automatic milking systems, because it can result in deterioration of udder health (S, Sarkar). With these extra precautions raw milk farms have to raise the cost of milk.

Lower Income Families can Afford Pasteurized Milk

In January of 2016 there were 45.4 million people using food stamps (SNAP). "In 2015, the average SNAP client received a monthly benefit of $126.39, and the average household of four received $256.11 monthly" (SNAP). This means an individual receives $31.50 dollar/week and $1.50 per meal. Since a gallon of raw milk can be up to ten dollars, choosing to buy a gallon of raw milk would be about one third of a SNAP individual's weekly allowance (SNAP). One the other hand, pasteurized milk is less expensive, only costing up to four dollars a gallon. Therefore, low-income families have to choose between buying expensive raw milk and not having enough money to buy other foods, or buying cheap pasteurized milk and having more money to buy other healthy foods. If raw milk is the only milk being sold in stores, then low-income families or people on food stamps might not be able to get the nutrients milk provides because they can't afford the expensive raw milk. Pasteurized milk is a nutritious food more accessible to everyone regardless of income.

CONCLUSION

Do you want to drink safe, nutritious, and affordable milk? Then pasteurized milk is the way to go. Pasteurization kills dangerous bacteria in milk. The process does eliminate some of the nutrients in milk, but it is still a very nutritious beverage. The cost of pasteurized milk is substantially lower than raw milk and can be afforded by most people.

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Cabot vs Kraft Cheese

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more likely know what happens to their milk and what they consume (Email). Kraft farms are located away from many communities they serve and not as many people see what happens and don't know what happens to the milk and what they consume (Email).

I analyzed environmental conditions of the two companies in several ways. First I looked at how far the companies are from my home and the grocery stores that sell cheese. When you buy cheese that is produced far away from the manufacturers, not only does the price go up for transportation, but the shipping also affects the environment (Frequently). This is because a vehicle uses petroleum which when burned produces carbon dioxide which goes into the atmosphere and increases the carbon footprint of producing the cheese (Frequently). It makes sense for people to eat cheese produced closer to their homes. Next I looked at both cheeses from the point of view of GMOs. Milk free from GMOs means that the animal is not fed with genetically modified soy or corn (Kraft). This is not easy to guarantee because most of the corn and soy grown in the U.S is genetically modified (Kraft). Therefore, the cows producing both cheeses are exposed to GMO feed and neither cheese can be identified as GMO free. The third way I compared the environmental impact of producing these cheeses is through Cabot's B corporation status. Since Kraft is not certified as a B Corporation it's not clear that it's living up to the same environmental standards as Cabot (B Corporation).

To find out which cheese I liked better, I did a blind taste test and I prefer Cabot cheese. Next I did a blind taste test of the cheeses with 26, 7th and 8th graders and 2 adults. To prevent bias, people were not allowed to see the cheese and they also didn't know which companies were involved. The results concluded that 11 people preferred Kraft and 17 preferred Cabot. Both adults preferred Cabot cheese.

I evaluated Cabot and Kraft extra sharp cheddar cheese on a variety of attributes to figure out which one I prefer. The nutritional value is almost the same with Cabot having slightly less fat and more protein and sodium per serving (Price Chopper). I don't really care about this because it is such a small difference and I'm not worried about health issues. The ingredients are also almost identical and I don't care about the natural mold inhibitor in Kraft cheese. For me in New England Cabot cheese is less expensive than Kraft which is positive, but someone in another part of the country might have a different experience. I found that the worker conditions are better for Cabot workers based on three indicators, the business structures the wages for the lowest paid workers, and Cabot's status as a B Corporation member. Animal conditions were also better on the small Cabot farms versus the large industrial Kraft farms (Email). Environmental conditions also were better for Cabot based on distance from my home and Cabots B Corporation certification. This would change for people who live in the midwest and other parts of the country which are closer to Kraft farms. Although taste is subjective I preferred Cabot as well as the majority of the people I tested. Overall, Cabot is my first choice considering all of the above variables. I hope you also take all of this information into consideration when you decide which cheese to buy.

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Paper vs Plastic

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view, neither paper nor plastic stand out as a better option. Plastic bags take way less energy to recycle, but the chances of a plastic bag being recycled is overall very low and also lower than paper bags.

If you are at all concerned about our environment, you should think about what bag you're going to choose next time you're at a store. If you're concerned about air and water pollution, both bags equally contribute to these problems. If you care about climate change and greenhouse gases, plastic is a better choice. If wildlife is your concern, then paper is the way to go. If you believe that recycling is important, neither bag stands out to be a better choice. Overall, I've learned that the best bag for the planet is bringing your own reusable bags.

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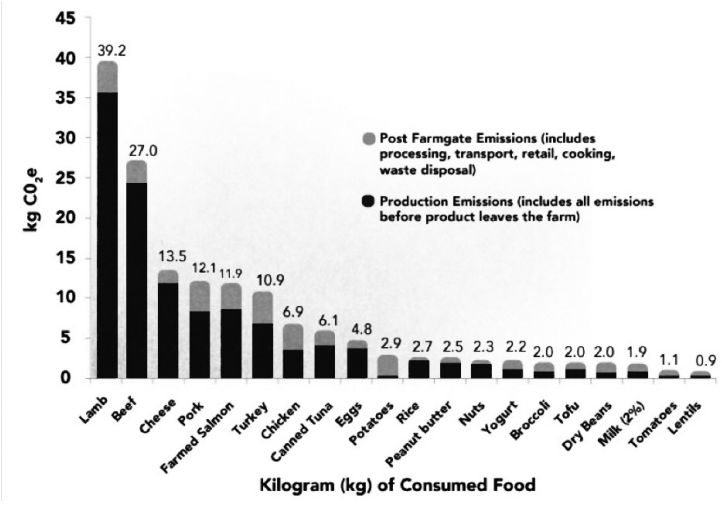
Fuel to Food: an Energy Conundrum

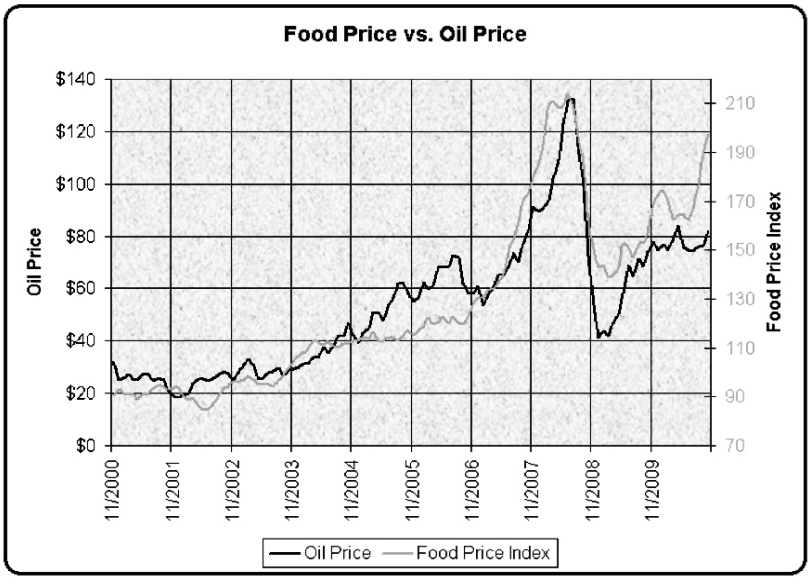
Elliot Tonks

How big do you think your carbon footprint is? The term "carbon footprint" refers to how many resources and how many emissions were used to create an item. Many people try to limit their impact on the earth by recycling, taking public transport, composting, or buying low emission cars. However, did you know that producing a single pound of beef takes over a thousand gallons of water and produces hundreds of pounds of greenhouse gases (Kunzig)? Not many people realize that their food has such an impact on the earth. Food production takes oil and energy equivalents for transport, processing, preparation, and packaging. Oil is in limited supply, and drilling takes a toll on the environment. The modern food system of importing food from foreign countries began in the mid 1900's with the rise of factory farms, trucking, imported food, and other methods of food industrialization. So my question: what is the cleanest diet for the earth, while still maintaining nutrition?



Food production, especially red meat, uses up fossil fuels and natural resources. Transportation, slaughter, feed production, pesticides, and fertilization, all require oil (Chefurka). The above graph shows the correlation of food prices and oil prices over ten years. The relationship of this data shows a clear parallel between food and oil supply and demand. Another number on the matter of food production: Beef alone accounts for over 6% of all carbon dioxide on the planet (Kunzig)! This is because of the industrialization of the beef industry, and because of the resources needed to produce one cow. Cows need more water, land, and feed than any other animal that we have domesticated to eat (Kunzig).

> "Food production, especially red meat, uses up fossil fuels and natural resources."



If all food is this impactive, then what should we focus on? Efficiency. The more efficient food is, the better it is for the Earth. No food is perfect, but some are better than others, in terms of requiring fewer resources to produce higher levels of nutrition, or having a high calorie/energy ratio. For example, one kilogram of lamb emits 39.2 kilograms of CO2 during production (Garza). Not only are these foods releasing greenhouse gases into the atmosphere, but also taking up water resources, causing drought. And water, in turn, takes oil. To purify, transport, pump, and collect water from the ground can take a city 52 billion Kilowatt hours of oil-sourced electricity per year (Murphy). (Adamkiewicz)

> "The more efficient food is, the better it is for the Earth."

Since this is so problematic, we need to solve it, and I believe that the best way to do this is actually to eat more vegetables. I know this is pretty standard advice, but hear me out; most vegetables take less water to grow than an animal, because the animal not only eats the vegetables, but also needs water to drink, and needing

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The Impact of Concentrated Animal Feeding Operations

Leah Holmes

Picture where you think the beef at the supermarket comes from. Is it rolling green fields and big red barns? If it is, you couldn't be more wrong. Most of the meat in the American beef industry comes from cattle who grow up on CAFOs. CAFO stands for "concentrated animal feeding operation." In 2012 there were more than 2 million cattle on feedlots in Texas, Kansas and Nebraska (Factory). From 1997 to 2012 there was a massive shift from small spread out cattle farms to big concentrated feedlots (Factory). Some of the biggest factory farm company owners include Tyson, Cargill, JBS and National Beef. (Emilene) CAFOs produce large amounts of uniform beef quickly and cheaply, but how is this system really impacting the world around us?

> "Raising cattle in America has become a race to raise the biggest beef. "

Feedlots

In order to raise millions of cows using the least amount of space possible, CAFOs keep cows in tight quarters. A large herd of cows will get one lot. One cow will get around 40 square feet (Beef). Factory farms are made up of hundreds soon to be thousands of these lots, all filled with cows. "Feedlots are getting larger in order to sell into an increasingly consolidated meat-packaging industry" (Factory). The crowding in CAFOs can lead to hygiene problems. Cows are never moved around the lots, so they are always standing in their own manure. Feedlots also reek of ammonia because of all the waste from the animals living there. Disease can spread very quickly in such confined spaces (CAFO). The cattle industry designed the close quarters of CAFOs to efficiently produce large amounts of uniform beef cheaply.

Weaning

For their first six months calves live on fields of green grass and drink their mother's milk. They are pulled away from their mom as soon as they have started to eat mostly grass. This is scary for both mother and calf. A young calf will often cry for days on end. Their throats get raw and they become exhausted. This step of separating mother from calf is necessary for them to get up to slaughter weight to keep up with the demand of beef. They are put on a diet of corn and hay made up of local grasses. They start to fatten up and when they reach around 750 to 800 pounds they are shipped off to the feedlots (CAFO). This system is not only unnatural in diet but does not follow the natural chronological order of a cow's life.

Corn

Raising cattle in America has become a race to raise the biggest beef. It all depends on one thing: corn. Cows are fed corn to fatten them up as fast as possible to get the most profit. An average CAFO raised cow will reach a slaughter weight of 1,200+ pounds in as little as 14 to 16 months (CAFO). This is compared to a generation ago when it took 2 to 3 years, and a generation before that when it took 4 to 5 years to bring a cow up to slaughter weight. In past generations cows ate a diet of grass. A diet of grass was not as carbohydrate heavy as corn. Carbs have the ability to put weight on an animal very quickly. (CAFO). Corn is incredibly fattening and each cow in a feedlot consumes up to 25 pounds of corn a day (CAFO). This abnormal diet of corn can have many negative effects.

Methane

Cows are meant to eat a diet of grasses, and when they are fed corn, it throws off their digestion. Corn is a carbohydrate and cows have a very specific digestive system to process it. This digestive process is called enteric fermentation. Enteric fermentation produces methane. This is not a problem when cows eat grass because it does not require this digestive process. However, a constant diet of corn causes a cow's body to produce more methane than normal. Methane produced from cows is a significant contributor to global warming. In the U.S., cattle release 5.5 metric tons of methane gas per year (Grist). Cows on factory farms produce more methane than cars (Grist). Not only do CAFOs negatively affect cows, but they also impact the environment.

> "...the CAFO environment causes health problems in cattle, affects the envirement and can cause illness in humans."

E-coli

Different kinds of bacteria can survive in different environments. A diet of corn off-balances a cow's stomach making it more acidic with a PH much closer to a human's (CAFO). This can cause bacteria to adapt to an acidic environment. When all cows ate grass the E-coli bacteria could survive in their stomach. When humans ate the meat with the E-coli, our acidic stomachs would kill it off. However, due to the increased PH in corn-fed cow's stomachs, E-coli has a chance to adapt to this environment. Now when humans eat the meat infected with E-coli, it can survive our stomachs, causing serious illness or even death. (CAFO). There are an estimated 96,000 illnesses caused from E-coli. 67% of those are from beef (CDC). CAFO beef that is infected with E-coli bacteria is a health hazard to humans.

Antibiotics

To deal with the problem of E-coli and a manure filled environment, cattle are fed antibiotics in their food as a daily supplement. If a factory farm stopped feeding the antibiotics a large percentage of the cattle would die of disease and digestive problems (CAFO). The daily

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Veggie Libel

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the safety of the food we eat" (Published). Many people say that veggie libel laws directly violate a consumer's right to know the full truth about what is in the food that they eat.

From a company's perspective, veggie libel laws are beneficial. They help to protect workers jobs, because people can't say things that take money or business away from workers. ABC news published an article about "'Pink Slime", a meat byproduct used as a food additive. Later, BPI, a multinational corporation standing for Beef Processing Incorporated took ABC to court for libel. However ABC's article definitely raised awareness on the subject of pink slime. "Public awareness of something with such an unappetizing name cost it business, leading... (BPI) to close three plants, and lay off more than 700 workers." (Entertainment, Legal). If one news story can result in the the layoff of over 700 workers, imagine the impact on company money and employment other cases of that size could cause. That is one example of a veggie libel case that has resulted in the layoff of workers, and/or decreased employment. However, veggie libel laws help to protect the jobs of workers, because consumers can't spread false information that would take business away from companies, or jobs away from workers. That is why the companies might argue that veggie libel laws are necessary.

Some of these court cases, however, illustrate how money is a large contributing factor to the victory of many food libel cases; money for the best lawyers, and to keep up with these large, wealthy corporations over court battle. The 'pink slime' lawsuit involving ABC News cost over $177,000, and it cost BPI $5.7 billion (News, ABC). Money plays an important role in determining who can criticize these large corporations. Money wasn't the only thing that helped ABC News. It prevailed in the pink slime case because it proved that it didn't use malice or say that products made with pink slime are unsafe to eat. The judge ruled that the article published wasn't a gross exaggeration of the subject at hand (Verhovek). Even though in Oprah's court case, the freedom of speech was what really helped her win, money still played an important role in her victory. The defense cost Oprah between $500,000 and one million dollars (Presley). However, while money and publicity play important roles in food libel cases, so too does a deep and thorough understanding of the laws at hand.

Whether we realize it or not, veggie libel laws are influencing our nation's conversation and knowledge about food. Do these laws benefit the nation, or just the corporations? Do food companies only target large news corporations and celebrities, or have others been sued, but been unable to make their cases public due to settlement gag orders? What ways exist for us to voice our concerns about food products without violating Veggie Libel Laws?

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Fuel to Food

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to be washed and processed. They emit no CO2 during growth, because plants actually "breathe in" CO2 and "breathe out" oxygen, using the carbon to create sugar and other carbohydrates. These carbohydrates have a high caloric content, so plants can provide sustainable energy throughout the day. The downside to eating primarily fruits and veggies is a deficiency in some vitamins and minerals, like B12 and protein.

So if you do eat meat, be sure that the beef, pork, or chicken was fed primarily grass and bugs and scraps as opposed to corn and protein supplements, thoughtfully slaughtered, and minimally transported or processed. "For the climate, your dinner might increase your carbon footprint more than your driving" (Adamkiewicz).

While eating less processed meat may be one solution, it discounts many problems. One must consider other factors, such as what fruits and vegetables one is eating, different meat producers, and food expenses. As consumers and customers, people can make a big difference by voting with their money. But don't just listen to me, let the facts speak for themselves.

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The Affect of Corn Syrup

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(Monocultures). These farms promote monoculture. Monoculture is when someone focuses on growing one type of crop on a large-scale. Monoculture is destroying the environment (Monocultures). Different plants require different nutrients from the soil. However, by repeatedly planting the same crop, monoculture farmers deplete the soil of particular nutrients (Monocultures). "Growing so many homogeneous plants in one area requires a lot of artificial chemical and mineral input" (Monocultures). All these chemicals and minerals deteriorate the soil and flow into the water polluting them both (Monocultures). High-fructose corn syrups demand for monoculture is polluting the planet.

One final disadvantage of high-fructose corn syrup is that it contributes to climate change (Life-Cycle). Climate change is destroying our world and the production of high-fructose corn syrup is a major contributor (Life-Cycle). It takes a lot of gasoline during the production and transportation of corn which pollutes the air causing climate change (Life-Cycle). "Author Michael Pollan estimates that between one-quarter and one-third gallons (about 1.0 to 1.25 liters) of oil are needed per bushel of corn to create the pesticides, fertilizers, and tractor gasoline, and to harvest, dry, and transport the corn. The U.S. high-fructose corn syrup industry used about 490 million bushels of corn last year, according to USDA" (Life-Cycle). Because the high-fructose corn syrup industry uses so much corn they also use a very large quantity of gasoline which pollutes and destroys the Earth.

Beware of foods that look healthy, but are not. Most lowfat yogurt has more high-fructose corn syrup in it than a bowl of ice cream (West). While high-fructose corn syrup is sweet, it is also dangerous. Is the convenience of this cheap, sweetener worth the impact it has on you and the environment?

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Hydration

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potassium, calcium, and magnesium which help manage the body's blood pressure (Bogas). When an athlete drinks only water after a workout, they aren't getting any electrolytes so the water an athlete drinks will not be retained by their bodies (Bogas). By drinking Smart Water in place of plain water, athletes will be getting the electrolytes and the rest of what they need to help their bodies retain water.

Protein shakes fill up an athlete and help to keep them full during their workout. Creatine, which is in a protein shake, can help boost physical performance and promote muscle growth (Protein). Protein shakes are best if consumed after a workout. However, protein drinks don't provide sodium, carbohydrates, or the sugar that athletes need (Protein). If they start or continue drinking water with a shake they should be fine but a shake by itself doesn't give them hydration an athlete needs during a workout. So protein shakes would not be recommended for hydration during a workout.

Sports drinks are advertised all around the US, so people think they are the best way to hydrate. About 850 million dollars a year is spent on advertising sports drinks (University). Athletes should be, encouraged to think about what they are drinking. The balance of electrolytes, carbohydrates, and sodium keeps an athlete healthy. As a general rule, if a workout lasts longer than an hour, then a sports drink is a good way to replace electrolytes and carbohydrates. However, if the workout is less than an hour, water is the best way to rehydrate (Zelman), because sports drinks have more sugar than an athlete actually needs.

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An Omnivore's Dilemma

Jaxon Nichols

As modern-day omnivores, we have a huge selection of plants and meats available for us to eat. However, in his book, *The Omnivore's Dilemma,* Michael Pollan tells us how having too many choices in our modern diets ironically has made our nutrition and health worse. This book, written in 2007, explores America's eating habits, trying to answer the question, *What should we have for dinner?* The story traces our food from the fields to our plates.

Michael Pollan explains how in the U.S., we have no stable culinary traditions to guide our eating habits because we are made of multi-ethnic populations. For example, he explains that people who live in Japan probably eat sushi. Most Japanese traditionally eat wasabi with sushi. Although the people who created the tradition of eating sushi with wasabi didn't realize this, wasabi kills bacteria often found in raw fish (Pollan). Their culinary tradition keeps them healthier. Michael Pollan also adds an example of how Central Americans traditionally cook corn with lime and serve it with beans. There's an important reason for this: corn contains the vitamin Niacin, which can only be activated by an alkali like lime (Pollan). The corn and beans together supply all the amino acids the body needs to make proteins. Because Americans eat many different types of foods, it does not always result in the pairings needed for proper digestion.

Another issue the book examines is that most food in the U.S. is made from corn. If we took all the corn away, many Americans wouldn't be able to survive considering most foods have some trace of corn in them. The U.S. has created new food inventions that use corn to replace other foods that are more expensive. For example, sugar was replaced with High Fructose Corn Syrup (HFCS). Large food companies started buying HFCS instead of real cane sugar because corn-based sweeteners are cheaper than sugar (Pollan). The reason why these sweeteners are so much cheaper is because corn farmers receive subsidies. The government gives them money so they can sell corn at a lower price. Subsides were first created so that the farmers could make money. If the subsidies were not used then the farmers would have to sell their corn for more and most likely would not make enough money. Now farmers are producing only corn, a monoculture, which is depleting soil nutrients and destroying the soil overtime.

The Omnivore's Dilemma has changed the way I choose the food I eat. In the book's conclusion, Pollan gives a couple of tips on what people can do to improve their diet. He suggests avoiding anything with HFCS, which means cutting down on most sodas and candies. So, to answer the question, *what should we have for dinner?* Michael Pollan recommends eating mainly foods that have less than five ingredients with names you can pronounce. He also encourages cooking more, because cooking gives people a chance to think more about the ingredients and where they came from.

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VT vs Tyson Chicken

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to the slaughterhouse itself, but rather to the system that "leads the animal to slaughter". When purchasing meat, one has to consider not just the conditions at the slaughterhouse, but also those conditions the animal experienced up to its slaughter.

Not all Vermont slaughterhouses are created equal. Some might do a great job of providing a livable wage while another treats its workers likes cogs in a machine. However, because all of them operate on a smaller scale than large industrial plants, like those run by Tyson Chicken, they can do a better job of preventing animal cruelty because their systems are reasonably sized. The Vermont slaughterhouses source their animals from smaller scale farms where animals have better lives leading up to slaughter. Again, this is the result of the size of the system. If a plant hopes to slaughter 10,000 animals in a day, they inherently have systems that reduce the quality of living for the animals being brought to slaughter. It seems as though size is the determining factor in quality slaughterhouses rather than whether the slaughterhouse is owned by a large company or located in Vermont.

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Pink Slime in Our Food

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On the other side, consumers are worried because they are not being informed about the contents of their food products.

Beware of ground beef and poultry products that may look appetizing but contain animal parts other than muscle. 70% of all beef and poultry products in America contain quantities of Pink Slime which is ground up animal by-products. Pink Slime is generally safe to eat and prevents animal waste. Its production also uses ammonium hydroxide which is safe in small quantities. However, customers in the U.S. aren't aware they are eating Pink Slime, and this seems like something people would want to know. If food companies were required to clearly label their products consumers could make their own choice.

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Horsemeat in America

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federal officials say are quickly deteriorating because of overpopulation of the wild horses (Brulliard). Restrictions added to the budget for the BLM in 1988, 2004 and 2010 prevented destruction of these wild horses and the sale of horses to companies that slaughter them for food

(Spillman). However, significant changes are being made which effect the fate of wild horses and which could in turn impact the horse slaughter industry.

On July 18, 2017, Rep. Chris Stewart (R-Utah) proposed that language be changed in the 1971 Wild Free-Roaming horse and Burro Act (Fact Check). This amendment removed language which has banned "the destruction of healthy, unadopted wild horses and burros" on the part of the Bureau of Land Management or its contractors (Fact Check)." The Amendment states that you could kill wild horse but not for sale for human consumption or human products (Post). Also, through the budget process, the Trump administration hopes to save money on managing the equine problem in the United States (Press). The budget cuts funding by $10 million to management of wild horses in the corals, the rounding up of the wild horses and birth control practices (Press). These two changes: removing the ban on destroying wild horses and reducing funding for managing the herds open the door for legal slaughtering of the wild horse population. It is unclear what will happen to the slaughtered horses (Press).

In summary the following legislative and budgetary changes could possibly happen in the near future.

1. Funding for the inspection of horse slaughter houses could be legalized opening the door for selling horse meat for human consumption.
2. The budget could be cut for managing wild horse populations.
3. Wild horses slaughter could be legalized.
4. Legislation banning horse for human consumption and transportation to other countries has been proposed but, after a year later has been not passed out of committee).

Each of these changes, should they happen, could have an impact on numbers of unwanted horses and what happens to them. This could lead to horse meat being once again being cheap and available for human food. There are many variables at play, but we owe it to horses to keep our eyes open and figure out how to protect these beautiful animals from cruelty and the dinner table.

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Impact of CAFOs

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feed consists of several additives aside from corn, including liquid fat, protein supplement, liquid vitamins, and Rumensin and Tylosin both of which are antibiotics (CAFO). "Approximately 80 percent of the antibiotics sold in the United States are used in meat and poultry production. The vast majority is used on healthy animals to promote growth, or prevent disease in crowded or unsanitary conditions" (The Overuse). Cows live in close quarters where disease can spread easily and antibiotics keep this from happening. The Federal Interagency Task Force on Antimicrobial Resistance says, "[t]he extensive use of antimicrobial drugs has resulted in drug resistance that threatens to reverse the medical advances of the last seventy years"(The Overuse). The benefit of using antibiotics could start to have negative effects. Factory farms rely on antibiotics to keep cows alive and farms running smoothly.

"In 2012 Americans consumed 52.2 billion pounds of beef."

Travel

Calves are not born on factory farms but they have to get there somehow. This is often stressful and dangerous for the calves. "They are trucked off to feedlots an often arduous journey…"(CAFO 146). It is very dangerous to trailer large numbers of large animals such as horses or cows. Herd animals have a certain pecking order and fights can break out inside the trailer causing the trailer to tip and cows to be hurt or killed. If cows just stayed in one place and grew up where they were born this could be avoided.

Manure

CAFO farms house up to two million animals and each one produces significant amounts of manure. When a herd of cattle is shipped off to the slaughterhouse, the lot is cleaned out and all the manure is either sprayed over farmer's fields or stored in man made lakes of cow poop. These lakes are incredibly dangerous for many reasons. First, all this manure emits dangerous air pollutants such as ammonia and hydrogen sulfate into the atmosphere (Factory). This can cause major health problems to the surrounding citizens. Composting manure emits hydrogen sulfate gases and ammonia in amounts that can be harmful to people residing in the nearby area. Too much exposure to these air pollutants can cause dizziness, nausea, headaches and respiratory failure (Factory). These manure lakes are also prone to leaks and spills. Toxic animal waste can leak into waterways and wells, this contaminates drinking water. In 2006, E-coli was found in over a hundred wells surrounding a factory farm that was storing leftover manure in one of these manure lakes (Factory).

Conclusion

Why do we have these big factory farms if they have so many negative effects? With the increasing popularity of fast food in the 1950s and 60s, these factory farms were created to meet the demand of cheap consistent beef (Fast). In 2012 Americans consumed 52.2 billion pounds of beef (The Salt). CAFOs met this demand by creating farms that produce vast numbers of cattle in a factory style environment. However, the CAFO environment causes health problems in cattle, affects the envirement and can cause illness in humans. The next time you get a hamburger at McDonald's, ask yourself; how was this cow raised?

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Poverty and Obesity

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The last way that poverty and obesity are related, is that fast food places such as McDonalds, have very cheap foods with too much fat and sugar. First of all, the Big Mac, the most popular menu item, has nearly half of the recommended fat intake for the day. In addition, one large fry has half the fat as well, meaning the six dollar Big Mac meal has all of the fat a person needs for the whole day (McDonalds nutrition calculator). Also, a small chocolate milkshake contains five hundred and thirty calories, which is more than a quarter of the amount of calories a person needs in a day.

There are the many ways that poverty and obesity are connected. Income, education level, government corn subsidies and food access are issues that contribute to the obesity epidemic by putting low income consumers at high risk for eating a high calorie diet.

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The Dark Side of Hershey

Samuel Simone, Marcy Innes, & Fallon Abel

Have you ever eaten a Kit Kat bar and thought of all the child labor that went into making it? Most people don't realize that the chocolate industry has a dark history of slavery and child labor. One company that has been accused of using children to harvest cocoa is the Hershey Company, the makers of Kit Kats, Reese's Pieces, Twizzlers, and Jolly Ranchers. Hershey's sources most of their cocoa from the Ivory Coast. "The multinational chocolate makers are heavily dependent on West Africa. More than 70% of the world's cocoa is grown in the region, and the vast majority of that supply comes from two countries: Ivory Coast and Ghana, which together produce 60% of the global total" (O'Keefe). In the Ivory Coast, children are often used as labor on cocoa plantations. "Approximately 286,000 children between the ages of nine and twelve have been reported to work on cocoa farms on the Ivory Coast alone, with as many as 12,000 likely to have arrived in their situation as a result of child trafficking" (CropWatch). Child trafficking means that poor children are taken from their homes and families, and forced to work on cocoa plantations as slaves. The cocoa plantations have the children grow and harvest cocoa. This work is dangerous because the children must swing machetes to cut the pods off of trees, and they have to carry heavy sacks weighing 100 pounds (O'Keefe). Why are people willing to buy chocolate that is being made with child labor?

The demand for cheap chocolate leads to child labor. Companies like Hershey and Nestle encourage farmers to use cheap labor to increase profits. "On average, these growers are paid less than 80 cents a day" (Harper), and children are paid even less. The growers earn an income well below the poverty line, which means that farmers need to employ a work source that can help them can break even. "As a result they often resort to the use of child labor to keep their prices competitive" (Child Labor). Children are the cheapest labor source they can hire. Cocoa farmers can pay children less than adults so they can keep the prices competitive so they can make a living. Children are the cheapest labor source they can hire. "[Growers] often resort to the use of child labor to keep their prices competitive" (Child Labor).

Children in the Ivory Coast are put in unsafe conditions for the sake of growing cocoa for chocolate companies. They swing machetes and spray pesticides, which are dangerous chemicals. "Children with high levels of pesticides known as organophosphates are twice as likely to develop Attention-Deficit Disorder (ADD) or Attention-Deficit Hyperactivity-Disorder(ADHD)" (Child Slavery). The children carry 50-100 pound burlap bags of the cocoa on their backs. If they are too slow, they get whipped. This is bad for children's backs and can cause permanent damage. "Some of the children use chainsaws to clear the forests. Other children climb the cocoa trees to cut bean pods using a machete. These large, heavy, dangerous knives are the standard tools for children on the cocoa farms, which violates international labor laws and a UN convention on eliminating the worst forms of child labor" (Child Labor). These working conditions are obviously dangerous for children as they can cut off their fingers or toes, or fall out of trees.

Children are taken from their families and they cannot go to school, because they are working on the cocoa plantations. "Most of the children laboring on cocoa farms are between the ages of 12 and 16, but reporters have found children as young as 5. In addition, 40% of these children are girls, and some stay for a few months, while others end up working on the cocoa farms through adulthood" (O'Keefe). Children this young should be going to school so they can get good jobs when they are adults. Not being able to live with their families could be stressful for children, and usually families are the ones who protect a child's welfare. Adult farmers on the plantations could take advantage of the children or neglect them.

Hershey and many of the major chocolate manufacturers aren't doing enough to prevent child labor. "Hershey's, the largest chocolate manufacturer in North America, has not thoroughly addressed accusations of child labor in its supply chain and refuses to release any information about where it sources its cocoa" (Child Labor). In 2010, a groups of Democrats tried to pass a bill, the Harkin Engel Protocol, that would stop child labor in the chocolate industry. However, due to opposition, the bill was never made into law (O'Keefe).

Every time you go to the store to buy chocolate, think about which chocolate brands do not use child labor. Instead of choosing based on what tastes the best or is cheapest, try to buy from companies that tell consumers about where they source their cocoa from. One way to know this is when chocolate has a fair trade label. Fair trade means the company buys their cocoa from sustainable farmers that pay their workers a livable wage. Some popular fair trade chocolate companies are Lake Champlain Chocolates, Divine, Endangered Species, TCHO, Theo and Alter Eco. Being a conscious consumer can help others while you enjoy some guilt-free chocolate.

Life of a Driscoll's Strawberry

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The Sharon Academy Middle School

Known. Valued. Challenged.

The Sharon Academy Middle School's character is defined by three fundamental attributes: a safe and supportive learning environment, rigorous academics achieved through our integrated curriculum and high expectations for all students; and a dedicated faculty that makes it all possible.

Through a variety of offerings and opportunities, TSA students graduate from our middle school confident of their own abilities, articulate in the communication of their knowledge and their needs, and effective as team members who are empowered to take responsibility and leadership within their communities.

Safe TSA strives to be a physically, socially, and emotionally safe environment for all students. Developing respect, compassion, and cooperation is an important focus of every school day.

Integrated Curriculum A central philosophical underpinning of the middle school curriculum is that information is best learned when it is connected and reinforced through relevant holistic themes. During the middle school's two-year curriculum cycle, students participate in an in-depth exploration of six units. Each unit is examined through the lenses of science, language arts and social studies. Students are encouraged to find and explore connections between the disciplines in each topic. This newsletter is the result of the Food and Hunger unit.

Rigorous Academics Our curriculum offers students many opportunities to learn how to work in teams, practice presentation and communication skills, and complete independent research. These skills form a strong foundation for future success - academic, social, and professional.

Individualized and/or leveled assignments are an example of one way we assist students to work to their potential. Most school assignments are available to all students at three different levels, each representing a different level of subject mastery. Students choose the assignment level that best challenges them - and are often encouraged by the teacher to reach to the next level.

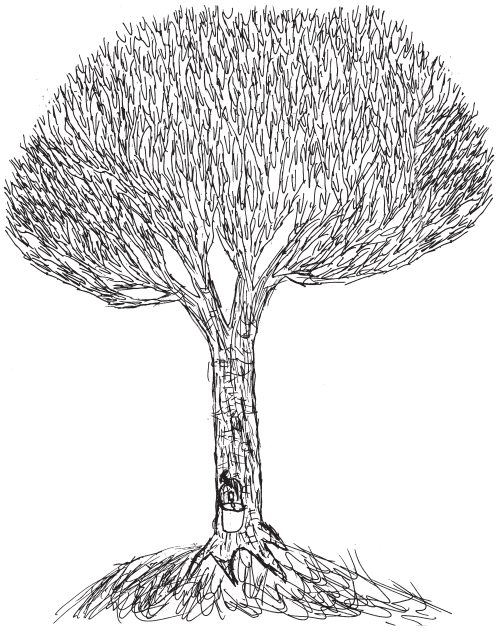
Community

Classes Our classes are small: 9-15 students in each class.

Strong Relationships Supported by small class sizes, teachers are able to know each student as a whole person. Additionally, each student is assigned an advisor who is their advocate for academic, social, and emotional growth

Mixed Groupings Our program is structured so that the students interact as a whole community. Class groupings are reshuffled every six weeks and whole school projects are common.

Community Service To foster the value of hard work and service, all students are required to complete 20 hours of community service every year as a graduation requirement.



Art by Barnhart

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OUR TIMES

Food and Hunger in Our World

Seventh Edition

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