OUR TIMES

Food and Hunger in Our World

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Oink Oink: What's in Your Pork?

Sophie Roe and Kaila Skeet Browning

Out of all the antibiotics used in the U.S., 80% are given to livestock and only 20% to humans (Toro). Out of that 80%, ten million pounds of antibiotics are fed to healthy pigs each year (Leutwyler). In factory farms, pigs are usually fed a constant low dosage of antibiotics to prevent disease and improve growth rate and feed efficiency (Cromwell). This dosage of antibiotics eventually allows the pig's bacteria to build up a resistance to the antibiotics that they are being fed (The Meatrix One). While the antibiotics kill off most of the bacteria, there are always some bacteria that might have a random mutation and need a higher dosage of antibiotics in order for them to die out. Those few bacteria then survive and reproduce, passing on the resistance to the next generation of bacteria. This process is facilitated by plasmids that occur in select bacteria. Plasmids are small, circular double stranded DNA molecules able to replicate independently from the chromosomal DNA. Plasmids carry genes that can be beneficial to bacteria's survival, including antibiotic resistant genes. When a bacterium with a plasmid comes in contact with another bacterium that does not contain a plasmid, the plasmid can be transferred into that bacterium during a process called conjugation, but that doesn't mean it always will. The transferring of genetic material through plasmids makes the process of becoming a resistant bacterium easier (Plasmids). One possible consequence from the plasmids is that over time, some of the bacteria in pigs may build up a resistance, so when humans eat pork with the resistant bacteria, the microbiota in their bodies have the potential to become antibiotic resistant as well.

In the spring of 2013, we conducted an experiment to look at levels of antibiotic resistance within the bacteria found in three different brands of pork, Smithfield, Swift and Luna Bleu. Smithfield and Swift are large corporations that keep their pigs in gestation crates, where they lose their ability to move around or lie down (Life). Luna Bleu is a certified organic farm in South Royalton, Vermont that keeps their pigs in portable houses (Animals). Our hypothesis was that the Smithfield and Swift meats would have higher levels of antibiotic resistant bacteria than Luna Bleu because the close confinement of factory farm pigs promote the use of antibiotics in pigs, whereas Luna Bleu's pork don't get fed antibiotics (Antibiotics).

"One possible consequence... is that over time, some of the bacteria in pigs may build up a resistance, so when humans eat pork with the resistant bacteria, the microbiota in their bodies have the potential to become antibiotic resistant as well."

To test this hypothesis, we measured the bacteria levels and the antibiotic resistance in the pork. First, we took samples of bacteria from each brand of pork and grew them on control plates of media to record bacteria growth. Luna Bleu had the most bacteria and Smithfield and Swift had the least. Then, the bacteria samples were taken and transferred onto plates of different antibiotics. We then observed how much bacteria grew on each plate, and calculated the percent growth. The less the bacteria grew, the more antibiotic resistance the meat contained. For example, when we grew bacteria on the Tetracycline antibiotic plate, the sample of Swift meat had a 14% resistance, Smithfield had 65.2% and Luna Bleu had 1%. You can see from these results that the resistance levels in the factory-farmed meat were higher than in Luna Bleu's meat. Therefore, even though the latter had more bacteria, it is not antibiotic resistant and thus it cannot transfer the resistance to humans.

The most plausible reason that the overall bacteria levels were lower in the Swift and Smithfield meats is because they treat their meat with ammonia hydroxide before packaging and selling it (Smithfield). Ammonia hydroxide is ammonia combined with water and it kills food pathogens and bacteria such as E.Coli. It is a safe substance in food processing if used accordingly with good manufacturing practice (Questions).

Consumers should be aware of these facts when purchasing their pork at a supermarket or co-op. The treatment of the animals, the workers, and the packaging process differ in each brand, and they should be taken into consideration as well. However, if someone is indifferent about the treatment of the workers and the packaging of their pork, as long as they cook it properly, all the bacteria will be killed and so the type of meat they buy isn't important. When someone makes a mistake and doesn't cook their pork properly, the brand does become important because of the bacteria in the pork. If someone made a mistake cooking Smithfield or Swift

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How Does Poverty Relate To Obesity In America?

By Lance Crate

Did you know that in America 17% of the population is obese (FRAC)? Along with that, 15% of Americans live in poverty, and these rates are growing rapidly (Hargreaves). Poverty is "the state of being extremely poor and not having enough wealth to take care of basic needs"(Dictionary). Obesity is "the condition of being grossly fat or overweight"(Dictionary). Obesity used to be a rich man's problem, however, in modern day; it's most common within poor and impoverished families. It's confusing to think that one could be obese, hungry, and poor.

Many people still believe that eating too much causes obesity, but that is rarely the case. Obesity is usually enforced by poor dieting because an individual doesn't have enough money to purchase nutrient rich food. If an individual comes from a low-income household then they are twice as likely to be obese (HC). In America, a "poor man's" diet consists of foods containing lots of trans or saturated fats, sugar and sodium. Fast food also provides people with a cheap source of empty calories. An empty calorie is "a calorie from food that provides energy but is not nutritionally balanced"(WEBSTER). Junk food contains empty calories. If the choice was between buying a tomato or an order of fries with two dollars, one might choose fries because they're more satisfying, even though they aren't as nutritious. People who are food insecure (usually due to poverty) don't eat enough, but when they do, they eat the cheapest food which often lacks vitamins, minerals and protein. At the grocery store, a soda and chips would cost under five dollars, but a bottle of water and a pint of blackberries will cost over 5 dollars. Soda and chips are filling, but have no nutrition. A pint of blackberries, however, isn't as filling, but contains vitamins and minerals. Families in poverty are most likely going to buy what's cheapest, because that's all they can afford, and the cheapest food is unhealthy and lacks nutritional value. It's clear that only the people who are well off can eat balanced meals daily, and maintain a healthy weight. Food that lacks nutrition causes weight gain and that is the main cause of obesity within poor people.

"Families in poverty are most likely going to buy what's cheapest, because that's all they can afford, and the cheapest food is unhealthy and lacks nutritional value."

I put together a chart so I could really see the correlation between poverty and obesity and the results were fascinating. There are four lists that make up the charts. The lists include the poorest states, most obese states, most fast food consumption, and hungriest states. There is a clear correlation between the poorest and most obese states (PARADE). Vermont was not on any of the four lists, but it did not appear on the top ten richest states list either (PARADE).

Poverty and obesity rates continue to rise (Health Central). Today, about one half of Americans are above their ideal weight, half of these people exceed their ideal weight by 20% or more; therefore they classify as obese (HC).

In researching this issue I was extremely interested to see what people knew about the links between poverty and obesity. I created a short online survey to assess what people knew about this. I hypothesized that few would be aware of this problem. I surveyed 76 people in three age groups: under 21, 21-65 and 65+. I found that 45% of participants surveyed scored one hundred percent. On the other hand, only 3% answered every question incorrect; 24% of people answered 75% of the questions correctly; 13% answered half of the questions right; and 16% only had one correct answer. I hypothesized incorrectly. I was glad to see that 45% of people were fully aware of this problem. It's also concerning that over half of participants were not fully aware of this problem, and 3% were not aware at all. There were trends within age and score. Only one-fifth of seniors answered the survey perfectly and 4 out of 11 who were under 21 answered correctly. That shows that the young adults are more educated about this problem than the seniors.

Obesity and poverty were not historically connected, but today they're closely linked. When one in five Americans is affected by either poverty, obesity or both; this gigantic problem can't be ignored.

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Pink Slime, Slimy Monstrosity, or Salubrious Goop?

By Aidan Boettcher and Carl W. Groppe with assistance from Pam Ward

Pink Slime on the surface may not be the first thing that you would want to eat, but underneath the controversy, the risk factors it may present to your health are not that clear. Read this article, and then you can decide on your opinion about this debatable meat product. At the end we have given you our opinion.

Pink Slime is a creamy meat filler posing under the name "Lean Finely Textured Beef"(LFTB). It is a low-cost ingredient commonly used as a filler in ground beef. LTFB is made by South Dakota-based Beef Products Inc (BPI). Made from leftover meat trimmings using cuts that would normally be discarded, these bits of meat are heated to 100 degrees Fahrenheit in a centrifuge, which spins them rapidly to separate the fat. Once the fat has been extracted from the rest of the meat, the LFTB is exposed to ammonium hydroxide gas (a compound of ammonia and water). The ammonium kills bacteria, such as strains of E. coli and salmonella. The slime is then compressed into blocks or pellets of meat that contain four to six percent fat. They are shipped around the country and turned into burgers and ground beef based beef products.

One controversy about LFTB is the quality of the nutrition. Because LFTB is made from fat trimmings the protein in it is much higher in collagen the main structural protein in animal connective tissue (Di Lullo) and lower in muscle-derived proteins than pure ground beef. Can this collagen-based protein be digested and absorbed by humans? Chemist See Arr Oh answered that question in a blog for Scientific American:

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The Real Deal About Veal

By Mazie Hayden

Have you ever eaten veal? If so, do you really know what it is? Veal is the meat of a calf (a baby cow) that is served as a delicacy in countries all over the world. The average American eats approximately a third of a pound of veal per year (FSIS). Today, most of the U. S. populace is against the veal industry, but it still persists (Veal).

There are different types of veal, "Bob" veal calves, "Milk fed" veal calves, "red" veal calves, and "free raised" veal calves. "Bob" veal calves are three weeks old, maximum, when slaughtered. Their meat is generally used for foods such as hot dogs, prepared sandwich meats, and frozen TV dinners. "Milk fed" veal calves are not fed plain old milk, but a milk replacer, and are slaughtered at 18 to 20 weeks of age. "Red" veal calves are fed milk replacer (which is partially derived from cow's blood) as well as hay and grain, which make them have healthier lives than "Milk fed" calves (Meatrix). "Free raised" veal calves get to stay with their mother until they naturally grow apart, and get to drink her milk and eat grass. The veal industry has expanded in sync with the dairy industry, due to the fact that many male calves serve no purpose on a dairy farm. This is because dairy companies only need a limited number of strong, healthy bulls with prime genetic material to impregnate the females.

> "The veal industry has expanded in sync with the dairy industry, due to the fact that many male calves serve no purpose on a dairy farm."

Every year, around 700,000 veal calves are slaughtered in the U. S. According to the USDA, "Veal calves are observed individually and are provided with special care, and fed a milk replacer diet that provides all of the 40 vitamins and minerals that they require." On the other hand, another source states that the milk substitute that veal calves are fed is deficient in iron and fiber to purposefully produce anemia, which creates the veal's favored pale pink flesh (Factory). They are usually separated from their mothers just three days after birth to prevent the spread of disease. Many of the cows raised to make veal are kept in small wooden crates that inhibit movement, as well as natural behaviors like sleeping, socializing, grooming, and digesting. This is due to the claustrophobia - inducing amount of space and the separation from other calves. The crates are so small that the young cows cannot even stretch their limbs, or in some cases, stand. They are tethered by their necks as well. The combination of these two things practically immobilizes the calves for most of their short lives. The CEO of the United States' largest veal producer said that veal crates, "Do nothing but subject a calf to stress, fear, physical harm, and pain." He proposes that the veal industry convert to a "group housing methodology" where veal calves are housed together (Veal). On the other hand, the USDA says the individual stalls are adequate because they provide maximum health and safety, with fresh air, natural light, and room to stretch, while making it easy and convenient for them to be monitored (FSIS).

If you'd like to stop eating veal or meat altogether, there are several meat replacements. They can be found at an everyday supermarket and include tofu, tempeh, textured vegetable protein and soy products. However, none of these items will possess the unique flavor of veal. If all of us reduce the consumption of animal products by only one meal a week around one million animals would not have to suffer in the hands of factory farms and the meat industry. (Factory)

Finally, not all veal is raised in poor conditions. The veal industry is basically necessary, as long as the dairy industry exists. However, if you do find yourself craving veal, think about the conditions that the different types of veal are raised in, from factory farms to open fields, and buy what you believe to be the most cruelty-free choice.

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Oink, Oink. Continued from page 1

pork, it could be a very different situation than a mistake made cooking Luna Bleu pork. Since in our experiment Smithfield and Swift have fewer bacteria, it would be less likely that any antibiotic resistance would be transferred into the person consuming the pork. But if there was a transfer, it could potentially be more dangerous because there was a stronger antibiotic resistance in Smithfield and Swifts bacteria. On the other hand Luna Bleu's pork had lots of bacteria, so there is a higher chance for it to be transferred, as the more bacteria that is ingested into the digestive system, the more likely chance it has of staying intact (Posada). However, since the resistance levels were so low in Luna Bleu bacteria, it is unlikely that the transfer would contain antibiotic resistance, so it isn't very problematic.

Finally, it should be noted that when experimental results are used to guide consumers in their food choices, the experiments should be repeated multiple times to ensure the validity of the data. One shortcoming of our above conclusion is that it is based on only one experiment by only one group of scientists. Ideally, these trials should be repeated.

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The Meaty Truth

By Wright Frost

It is a normal day. You woke up, went to school, and came home. It is now time for dinner. You grab a few steaks, and begin to cook them. The appetizing smell wafts up to your nostrils. Meat is good for you, right? It has lots of protein, and not that many calories. However, many meats have a high content of unhealthy nutrients (Nutrition).

I examined the nutrition facts of four different meats: lamb, pork, beef, and chicken. It is common knowledge that red meat can be detrimental to health, and that poultry is healthier. I didn't doubt that, but I still thought that red meat was only a little worse than poultry or other meat options. I came to some very interesting conclusions after doing research.

Out of the four meats, the healthiest in many categories was chicken. For every serving of chicken, there are only 231 calories, whereas beef has 447 per serving, pork has 445, and lamb has 498 (Nutrition). In excess, calories can hurt you, but saturated fats are the real problem. They contain cholesterol, which causes high blood pressure, which can lead to heart and/or kidney failure (What). Chicken contains the lowest amount of saturated fats and cholesterol out of the four meats, with 7% and 40% of the recommended daily allowances (RDA), respectively. This may seem like a lot, but it is quite reasonable when compared to lamb, (72% Sat. Fat, 64% cholesterol) pork, (16% Sat. Fat, 502% cholesterol) and beef (21% Sat. Fat, 356% cholesterol) (Nutrition).

Although chicken is the healthiest when it comes to saturated fat and cholesterol, it is behind the rest of the meats in some other nutrients, like protein. Proteins carry out most of the bodily functions, and they are made up of amino acids. Essential amino acids are those that the human body can't produce, so they must be obtained through foods. All four of the meats are a complete protein source, which means that they contain all of the essential amino acids. Pork has the most protein, with 84 grams. Pork is followed closely by beef and lamb, with 77 grams and 52 grams, respectively. Finally, chicken contains 43 grams. (Nutrition) The RDA for men aged 19 and over is 56 grams (Protein). Although three of the four meats have more than the RDA for protein, this excess will do nothing except assist the body to function smoothly.

Two of the four meats are high in iron, with the exception of chicken and lamb. Pork has 369%, beef has 673%, whereas lamb has 21% and chicken has only 8% (Nutrition). Iron is very important because it produces hemoglobin, which helps red blood cells carry oxygen to the brain. This is important to know if you are someone whose only meat intake is chicken or lamb; you will need to find other sources of iron to include in your diet.

Beef has the most iron out of the four meats, but it also has the most Vitamin C. It contains 258% of the nutrient. Pork has 58%, and lamb and chicken have 0% (Nutrition).

Consistently we find that beef and pork are high in nutrients that chicken and lamb aren't, and phosphorus is no exception. Beef contains 94% of the RDA, then, pork, with 85%. Lamb has 35%, and chicken has only 32% (Nutrition). Phosphorus helps to produce ATP, which is a molecule used by the body to store energy.

> "My personal opinion is simple: chicken, lamb and beef will help the body function properly when consumed in the correct quantities."

Phosphorus also assists the body with kidney function and muscle contractions, among other things (Phosphorus).

Generally, large amounts of sodium are not good for the human body. Although it is needed in small amounts, in excess it can lead to heart and/or general health issues (Grogan). None of the four meats are high in this nutrient, however. Lamb contains 8%, pork has 13%, beef has 7%, and chicken has 4% (Nutrition).

Overall, it is hard to say which of the meats is the healthiest. Chicken has the lowest saturated fat and cholesterol content, but it is also the lowest in many of the other nutrients. Supplementing a meal of chicken with vegetables and other foods, that are high in those nutrients chicken is lower in, would balance things out without adding too much saturated fat or cholesterol. It is perfectly reasonable for one's health to eat chicken multiple times a week. It would be wise to be more conservative in one's intake of the other meats. Lamb is similar to chicken in many categories, and I would offer the same advice about supplementing meals of lamb with vegetables and other nutrient rich foods.

Overall, I would say beef seems to be the most nutrient rich meat, but should still be eaten sparingly due to its cholesterol and saturated fat content. It is not too high in unhealthy vitamins and minerals, and it has a high content of protein and iron. My personal opinion is simple: chicken, lamb and beef will help the body function properly when consumed in the correct quantities, but pork is excessive in many unhealthy nutrients, and should be avoided as a part of the regular diet.

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Sugar vs. High Fructose Corn Syrup: What's Really In Your Snack?

By Logan Plourde

Did you know that a single 20-ounce can of Coca Cola has 65 grams of sugar from high-fructose corn syrup? That's enough corn to make two small tortillas! High-fructose corn syrup, or HFCS, has many health risks and creates a large carbon footprint. Using pure cane sugar is a much better choice for sweetening food products because it's better for your health and more environmentally sustainable (Laidler).

The process of making HFCS is long and involves many chemical treatments. First, the corn is turned into cornstarch and then the cornstarch is turned into corn syrup. Next, chemicals are used to refine the corn syrup and fructose is added to make the HFCS. The corn plant fibers (husks, stalks and leaves) are not used; they are thrown away, creating excessive waste (Laidler).

In comparison, cane sugar is processed in a more environmentally friendly way. Sugar cane is grown in tropical climates where the entire plant is harvested. The canes, or stems, are crushed between large rollers, which releases the sugar cane juice. The juice is thickened into a syrup by boiling off the excess water. In the process, the leftover sugar cane fibers are burned to power the machine that processes the sugar. The leftover sugar cane juice is used to make molasses. The process of making cane sugar uses fewer chemicals than HFCS (Laidler).

The Coke bottling plants in Mexico uses real cane sugar, which is far more sustainable than HFCS. In the United States, Coke is made with HFCS, which makes it less expensive for the consumer. Coke with sugar costs up to two dollars more per bottle, so people are more likely to choose Coke with HFCS (Laidler). One question that should be asked is: do we find it better that Coca-Cola is cheaper. Generally, it might be better for our country's health if this unhealthy drink was more expensive. However, soda manufacturers want to make the most profit and reduce expenses, thus the rise of HFCS.

If a person drank one 20-oz. soda a week they will have consumed 7.4 lbs. of sugar (from HFCS) in a year from soda alone (How Much Sugar in Sodas and Beverages?). Coke with HFCS has very few nutrients other than fructose, making it an "empty calorie" food. If only empty calories are consumed, the body will not get enough essential nutrients, causing obesity, and promoting a deficiency in many vitamins and minerals. People who consume excessive amounts of junk food will likely suffer many health consequences, including type-2 diabetes. Diabetes is when the body lacks insulin that it needs to process glucose, the body's main source of energy (Nelson). When the body can't process glucose a person can be massively overweight and still effectively starve to death.

HFCS, as manifest in soft drinks, is a major contributor to obesity. Eating more calories than you can use causes obesity. Obviously, as mentioned above, if one consumes soda which lacks any quality nutrients and contains only "empty calories", one will be ingesting more calories than one needs. Obesity can cause heart disease because of high blood pressure (the amount of blood pushing through the arteries) and can damage the heart if untreated. High cholesterol can build up in the arteries, also causing heart disease (What is). Obesity can also contribute to cancer. Cancer feeds off of sugar that other cells need, the way a weed in a garden drinks up all the water, killing the other plants.

> "In the process of harvesting, refining, and manufacturing this product, there are toxins dangerous to human health. It has been found that HFCS contains trace amounts of mercury...and sulfur dioxide"

In addition to these health problems that come from consuming too much HFCS, there are actually dangers in the syrup itself. In the process of harvesting, refining, and manufacturing this product, there are toxins dangerous to human health. It has been found that HFCS contains trace amounts of mercury (neurotoxin) and sulfur dioxide (can cause asthma and other lung problems) (Kalley). Clearly, HFCS is an unhealthy food choice.

In 2010, the U.S. farmed 39% of the world's corn, which is equivalent to 12.1 billion bushels (Mays). The third largest use for the corn was HFCS (Litchfield). Corn has vitamin A, vitamin B-6, Magnesium, Protein and Iron (USDA). Essentially, it's best to consume corn in its natural state. Corn loses all of the nutrients when it is made into HFCS. One tablespoon of HFCS (19 grams) has 14 grams of sugar, no fiber, fat, vitamins, minerals or any other nutrients. Corn, as an unprocessed vegetable, is healthier and cheaper than HFCS.

HFCS is not a healthy sweetener to consume, and should be eaten in moderation. Paying extra for a product that contains cane sugar instead of HFCS is worth the money because of the health risks and lack of nutrients. Buying food with natural cane sugar will help you to live to a ripe old age.

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Pink Slime. Continued from page 2

Consumers can certainly make valid arguments regarding [lean finely textured beef's] content: There's less overall 'functional' protein than that found in other meat products. An analysis conducted at Iowa State University () found two-and-a-half times more insoluble protein (77 percent vs. 30 percent) relative to soluble proteins in ordinary ground chuck. Nutritionally, our gut bacteria digest much of what we cannot, but there's a good bet that we can't get as much value from insoluble proteins (collagen and elastin, found largely in tendons, ligaments, and cartilage) as from their soluble siblings (myosin and actin, usually associated with muscle tissues).

On the other hand the blog also makes two counterpoints to this argument. One is that the USDA definition of meat includes parts of the

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Decoding "Food Inc."

By Jake Zuefle and Hunter LaHaye

Do you know where your food comes from? If not, watch the movie *Food Inc.* The way people eat has changed more in the last 50 years than in the prior 10,000 years. Food production has become a factory based process rather than a natural process. Most food production is controlled by a few multinational companies. In 1965, 25% of meat production in the U.S. was controlled by 5 big companies. In 2008, 80% of meat production was controlled by 4 companies. Farming practices have also become more industrialized conforming to a small number of companies' standards. The food industry still portrays that food comes from family farms when the reality is extremely different.

The movie *Food Inc.* tells us about the reality of our food and where it comes from, focusing on the industrialization of food production and processing. Because *Food Inc.* is a complicated movie with seemingly random shifts between various topics, the following summary will help the viewer better understand the film. Starting with a hamburger, the movie explores the industrialization of meat production. The rise of drive-in restaurants compartmentalized the work of preparing and serving food; in the same way, factories became industrialized. The increase in the numbers of and size of drive-in restaurants drove the development of large corporations (with hundreds of thousands of fast food restaurants), which demanded increasing amounts of meat and other foods. The new demand for meat forced changes in meat production, pushing the family farm into joining industrialized farms. *Food Inc.* shows this industrialization using the current practice of chicken farming and how it focuses on the increased number and size of chickens at the expense of the farmer and the chickens' health. The movie then shows the same industrialization in the farming of corn. Now that corn is really easy to get, it is now used to feed cows even though cows evolved to eat grass. This farming practice leads to acid resistant E. coli bacteria (which is toxic to humans) getting into the processed meat. The problem of E. coli in meat is demonstrated by the example of Kevin, a young boy who at the age of three got an E. coli infection and died, after eating three fast food burgers. A better alternative to industrialized food production is presented in the example of Polyface Farm, where the risk of infection is reduced and the farm connects consumers with the grower of their food.

Food Inc. then explores another downside to industrialization. The companies want to make as much money as possible. The movie shows the use of illegal immigrants in meat processing as a way to cheapen processing costs. At the same time as the companies decrease costs, they also have created new ways to increase revenue. This is shown by exploring patented plant genes, such as "Round Up" ready soybean seeds. Patents prevent farmers from using seed saved from a previous harvest, requiring farmers to buy new seed each year. Companies such as Monsanto can afford private detectives to investigate and enforce patent violations.

The industrialization of food production uses workers as if they were parts of a machine that are interchangeable and easily replaced. This is shown in the scene of a raid on a trailer park to arrest illegal immigrants. The police were tipped off by the food company who employed the illegals. The illegals had become troublesome for the company so they got rid of them. Later, new illegals would be brought in by the company. Even farmers are treated as interchangeable parts as shown with the chicken farmer. Their contracts are terminated if they don't buy or upgrade certain equipment including the houses.

> "The food industry still portrays that food comes from family farms when the reality is extremely different."

Until this year beef was the number one food eaten by Americans (this year it was out-eaten by chicken). Here's how it's made. A CAFO's purpose is to raise as many animals as possible and as quickly as possible. The animals are injected with growth hormones to make them grow faster. They are then sent to slaughtering facilities where even the sick animals are slaughtered and processed. The cows are fed corn because it is easy to find there's lots of it and it is very cheap. The companies don't care about quality very much because having higher quality foods will cost more. In order to make the meat safe to eat, there are so many chemicals that are added. Also the animals are fed so much corn that the meat starts to have outrageous amounts of E. coli in the product, therefore making you have a higher chance to get a E. coli infection.

The chicken industry only focuses on producing huge quantities of chicken. The chickens are engineered to grow twice as large as other chickens in half the time. The companies are the ones who set all of the regulations and determine the sizes of the chicken houses. The companies will often require the farmers to upgrade their equipment and chicken houses, or the company will terminate their contract. The worst part of it all is that the companies force all farmers to pay for the upgrades that are need to make better chicken houses.

This movie to us was revolting, disgusting, and just telling you the plain truth. There are many shocking details, which make you have a look of disgust, while getting important information about the reality of our food industries. It was also a sad movie, because of the deaths of young children, and the abuse to the workers as well as the animals. We thought it was just horrifying when Kevin died, because the company wasn't sorry about his death. They just wanted to get more money, which in our minds, doesn't make a good and healthy company. It also makes the owners of the companies not look like good people. Although this movie was made in 2008, it is still relevant to watch, while getting good facts that pertain to our lives. It is a great movie for teens as well as adults, and our advice would be to take it home with you and watch it alone or with your older kids so we can all make informed choices about what food to buy.

To conclude, industrialization has conquered the food market, especially in America. *Food Inc.* illustrates the problems of this system. All in all, *Food Inc.* shows the good and bad alike, sparing no company.

Nothing's Bigger Than Super Size

By Sydney Hooey and Amber Aldrich

Over one quarter of Americans are obese or overweight, leading to multiple health problems such as heart disease, colon cancer, gallbladder disease, and diabetes. Some of these people are overweight or obese because they eat at fast food restaurants. The documentary *Super Size Me* shows how eating at McDonald's contributes to the obesity problem. McDonald's feeds over 69 million people a day, making it one of the most popular fast food restaurants in the world. The funny thing is, if you go into a McDonald's, you will have to ask to see the nutrition sheet as hardly any of their restaurants have it on display. Many of their customers don't even know that this food is negatively affecting their health.

In 2004, Morgan Spurlock did an experiment to find out just how unhealthy it is for a human to eat McDonald's for an entire month. He weighed 184 lbs at the beginning of the month and a supersized 217 lbs by the end of the month! In addition, he developed multiple health problems through this experiment. Morgan Spurlock's documentary *Super Size Me* shows the dramatic effects of eating fast food.

The movie starts out with Morgan seeing three different doctors: a cardiologist, a gastroenterologist, and a general practitioner. He tells the doctors his plan: to fully consume three McDonald's meals per day: breakfast, lunch, and dinner, to eat every item on the McDonald's menu at least once over the course of the month, to only ingest items that are offered on the McDonald's menu, (including purchasing bottled water from the restaurant), to supersize the meal when offered, but only when offered. The doctors said this experiment was going to be dangerous for his health. He didn't care about the risks; he just wanted to prove a point.

His first meal was in Manhattan and he was asked if he would like to supersize his meal. He had to accept since this was one of his rules. It took Morgan thirty minutes to eat the supersized meal. After a few days, he started experiencing chest pains, headaches, and difficulty walking up the stairs due to shortness of breath. After a week he flew into Houston, Texas- "The fattest city in America." He was asked to supersize his meals five times while in Texas! A few days after his fourth weigh-in, he woke up and had difficulty breathing. He was very scared and knew something was wrong. His doctors all said that his health was deteriorating and recommended that he stop eating this food. Morgan did not want to stop.

At the end of 30 days, Morgan's health was in a pretty scary state! In total, he gained 33 lbs in the 30 days. Over the course of the month, he consumed over 30 lbs of sugar and 12 lbs of fat. If you think about it, that's pretty terrifying! Morgan definitely got his point across: FAST FOOD IS BAD FOR YOUR HEALTH!

This movie was entertaining but at the same time it was disturbing. Morgan is a down-to-earth kind of guy who continually makes us laugh. The disturbing part of this movie is the story behind the food of fast food restaurants which causes accumulation of fat in the body.

> "McDonald's feeds over 69 million people a day, making it one of the most popular fast food restaurants in the world."

The film highlighted a man who was overweight after drinking around two gallons of soda every day (Soda is the primary drink for some McDonald's customers). The documentary filmed the overweight man in surgery, which removed fat and shrank his stomach. This is called Liposuction and Gastric Bypass surgery.

An interesting part of this movie is when Morgan and the camera crew interviewed kids about McDonald's. They interview kids because they wanted to find out if the children could better identify the people like Ronald McDonald or George Washington by photo. This showed how kids growing up these days recognize Fast-Food characters more than historical figures. Another powerful part in the film was when Morgan ate his last meal. He was celebrating with his family and friends. He was finally ending this long-lasting, gruesome, weakening, experience.

We believe this documentary is a good eye opener for people who may not think about how fast- food affects their bodies. It affected Morgan's body so badly that his doctors said he shouldn't eat fast foods for whole year! It took Morgan five months to lose twenty pounds and another nine months to lose the last four pounds. His girlfriend, Alexandra, began supervising his recovery with her "detox diet." It took quite awhile to lose that twelve pounds of fat! We hope that our article will make you think twice before going to fast food restaurants! It sure makes us think twice!

(Amber's opinion) My opinion on this documentary is, "Wow, fast food is really bad for you" and Americans need to realize that this food is life threatening and very dangerous. I don't eat Fast Food very often, as it has never really been appealing to me. When I was little, my family used to go to McDonald's a lot and I always ordered the chicken nuggets. Now I know how they are made. I regret liking the food. These days my family NEVER goes to Fast-Food places. I am happy that after Morgan made this documentary, McDonald's took away supersizing the meals!! I think McDonald's realized that supersizing the meals was kind of an unhealthy idea that was negatively affecting humans. If people watch this documentary they will find out how bad Fast Food is for their health.

(Sydney's opinion) After I finished watching this movie, I was thinking, " Jeez, I really should stop eating McDonald's as much as I do." I eat McDonald's close to once a week, maybe every other week. I rarely get a whole meal, but I still eat the food. After viewing the movie, I felt sick to my stomach. I felt like I ate a whole bowl of grease. I felt like I have let myself down by eating McDonald's more than I should. The reason I feel this way is because I shouldn't be eating as much fast food as I do. I really should be eating healthier or be more cautious of my eating decisions. Morgan succeeded in his goal. I'm surely not eating as much fast foods I normally do!

Super Size Me shows how fast food restaurants all relate to obesity. By doing the experiment, Morgan exposes the reality of the negative aspects of McDonald's. We think you should watch the movie to realize how fast food choices affect your body.

Do You Know About Your Coffee?

By Kyle Pratson

In the US, 100 million people drink a cup of coffee every day (Mexican). But do people actually think about how their coffee came to their cup? Or how many chemicals go into producing their coffee? The modern way of making coffee is to put coffee plants in a field with the sun beating down on the plants, which causes them to wilt. To fix this problem, pesticides and herbicides are sprayed in great quantities, onto the plants. Shade grown coffee is the old fashion way of growing coffee, but it is starting to be forgotten. Since the large corporations are using this new method, it is hard to keep shade grown coffee in business. Shade grown coffee is planted under a canopy of trees. The shade from the canopy provides the shade and prevents the coffee plants from wilting and dying. The trees that provide the shade for the coffee create a habitat for bird (Mexican). Since the shade grown coffee matures slower in the shade, it allows the natural sugars to increase and give the coffee a better flavor. But this also means there is less profit for the growers because it doesn't grow as fast. Only 1% of the coffee sales in the U.S are shade grown (Eartheasy). There are other certifications and labels that provide an alternative to sun grown coffee. The way that you spend your money on coffee can determine how coffee will be grown in the future.

By spending your money on sun grown coffee you are supporting conventional coffee and brands such as Folgers. Sun grown coffee is the modern way to produce coffee on a big scale. In order to get the wide-open fields to plant their crops, the industrial coffee companies are deforesting the rain forests. The term shade grown coffee is used by farmers, and its label is hard to regulate. Because there is no certification for shade grown coffee, there are no regulations. You can call your coffee shade grown by putting your coffee plants under a banana tree, which sparsely covers the plants. A better alterative to the shade grown label is Bird Friendly Coffee. There are strict regulations that Bird Friendly Coffee has to meet in order to be called Bird Friendly Coffee. These restrictions are very difficult to meet, so not very many farmers can call their coffee Bird Friendly. The Smithsonian Migratory Bird Center regulates and certifies this label. This coffee has to have specific types of trees that provide a certain amount of shade for the coffee plants. Making coffee this way creates its own habit around the coffee plants (Eartheasy). Bird Friendly coffee is hard to find on the shelves in grocery stores. When buying Bird Friendly coffee you are definitely helping the environment and bird habitats.

Everyone knows what organic means, and some will spend the extra money to buy organic over the conventionally grown coffee. People buy this because they are trying to help the earth. Certified Organic coffee is coffee grown without any chemically derived pesticides or fertilizers. Compared to sun grown coffee it's a good alternative, because even though the pesticides used on sun grown coffee aren't necessarily harmful to humans, they are horrible for the environment (All About). If you buy Organic or Bird Friendly coffee you are helping the environment, but often in different ways.

You can also spend your money to benefit the farmer that grows coffee in a developing country. This is called Fair Trade coffee. This label started when people became worried that the farmers in the poorer countries, who were producing and doing the work to make the coffee, were not getting paid fairly. Fair Trade coffee is sold at higher prices then regular coffee to provide workers with proper salaries. The Fair Trade label does not mean the coffee is organic (All About). If you buy Fair Trade coffee, you are supporting the farmers that are doing the work to make the coffee you are drinking, but not necessarily helping the environment.

> "Sun grown coffee is the modern way to produce coffee on a big scale. In order to get the wide-open fields to plant their crops, the industrial coffee companies are deforesting the rain forests."

The "Rainforest Alliance" label is another earth friendly coffee certification. This certification can be popular with farmers because only 30% of the coffee has to be grown by their standards to be able use this label. The other 70% of the coffee beans that don't meet this standard can still be sold under the "Rainforest Alliance" certification, which boosts earnings. The only caveat is that they must state the percent of certified coffee on the package (All About). You can still use chemical pesticides and get the "Rainforest Alliance" certification because their standards do not require their growers to be organic. The standards for their coffee is not demanding enough to be called organic but is better then the conventional companies. If you want to buy this type of coffee you aren't supporting organic growing, but it's still better for the planet than buying sun grown coffee.

The way that you spend your money on coffee can control the market of coffee in the future. Shade grown, Organic, Bird Friendly, Fair Trade and "Rainforest Alliance" coffee are all alternatives to sun grown coffee. If you buy Bird Friendly or Organic coffee, you support the growers that take the extra time to not use pesticides and fertilizers, and keep their environmental footprint low. If you support human rights, then buy Fair Trade coffee to ensure that the money you spend goes to the farmer that put the time into making it. If low cost is more important to you than environmentally friendly products, or giving money to the workers that produce the coffee you are drinking, or if you cant afford the more expensive labels, get the sun grown industrial coffee. Just by thinking about how you are spending coffee dollars at the store can make a difference in the coffee market.

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Pink Slime. Continued from page 5

animal that normally are accompanying the muscle tissue. Another is that while pink slime may contain less usable protein, it also contains less fat. So the two may balance each other in terms of health.

Another controversy surrounding LFTB is the use of ammonium hydroxide. Ammonium hydroxide is a compound composed of water and ammonium, which is sprayed on pink slime to reduce bacteria such as E Coli or Salmonella.

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Starbucks: Good Coffee But At What Cost?

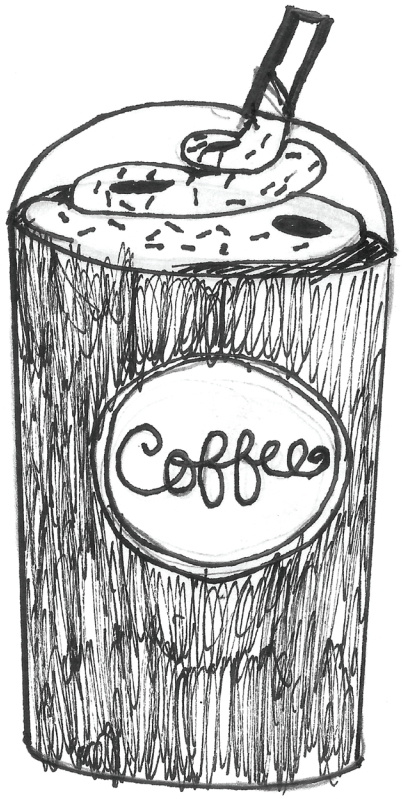
By Taylor Lyman and Eva Huntley

Starbucks is one of the most popular coffee retailers in the world, serving drinks each day in 55 countries (Lozanova). Approximately one new shop is opened every day around the world (Starbucks), and while many people love their products, this love does not come without costs. Paper cups, water consumption, and drinks high in fat and sugar are characteristics of the successful Starbucks company. There are numerous environmental and health challenges that come with the operation of a large multi-national coffee corporation like Starbucks.

Starbucks' stores use hundreds of millions of paper cups annually which eventually end up in landfills. They offer disposable cups to all customers, whether or not the beverage is consumed in the shop. Paper cups require enormous quantities of natural resources and energy before finding their way to landfills. Starbucks does, however, use cups that contain 10 percent post-consumer recycled content (Sowden), which helps to reduce some of the environmental impacts on paper waste. How could Starbucks change? For starters, they could increase the amount of recycled material in their cups to 100%, and that would significantly reduce the negative environmental impact. Additionally, they could welcome (perhaps with a discounted price) people bringing their own travel mugs to the store to be filled. These improvements might cost something to implement, but would make Starbucks a far better company for the environment.

> "Caffeine is even worse for consumers who have anxiety, bipolar disorder, osteoporosis, and heart conditions."

In 2008, Starbucks was under strong criticism because of wasteful water practices. Water ran continuously on dipper wells, which are used to wash utensils. This added up to an estimated 6.2 million gallons of water wasted each day



(Sowden). They fixed this problem in 2009 by installing water saving devices, but there is so much more they could do to reduce excessive water consumption, like turning off the water when they are not washing the dishes.

Starbucks is not only bad for the environment; their products can also cause health problems. One Starbucks Grande (16 oz.) contains 320 milligrams of caffeine, while a regular 16 oz. cup of coffee contains 190 milligrams of caffeine (Ekran). At four times the amount of one can of Red Bull, Starbucks is clearly detrimental to the public's health (Ekran). Their products are very high in sugar and caffeine.

Humans evolved to crave sugar. This is because it is our main energy source. In excess, sugar can cause collagen and elastin damage or destruction. Collagen and elastin are the fibers in your skin that gives it structure, so damaging these fibers can lead to wrinkles (Sawyer). Sugar is also linked to cancer. Cancer feeds on sugar and spreads faster if it is fed a high sugar diet. Sugar excess is not only deleterious to your health, it is also contributes to early aging.

Many of us know that caffeine is poor for our health, but why? This is because caffeine can lead to insomnia and other health problems. When caffeine is consumed regularly, the brain develops a dependence, and without it, migraines can result (Brooks). Caffeine is even worse for consumers who have anxiety, bipolar disorder, osteoporosis, and heart conditions. People who consume caffeine and have anxiety can worsen their condition. Some people who have caffeine often and who also have bipolar disorder have been hospitalized. Caffeine drinkers who have osteoporosis have weaker bones because calcium is flushed out in urine. People with heart conditions should limit caffeine because it causes the heart to work harder (Web MD).

Clearly, Starbucks is detrimental to consumers' health. But it is not just the consumers who reap the negative consequences. The farmers who are growing the coffee beans for Starbucks are not being compensated enough for their work. If you choose to buy coffee from Starbucks you may be contributing to low wages for a family in another country. Only a small portion of Starbucks coffee is Fair Trade (Ekran). They could serve more Fair Trade coffee to improve the living conditions of their manufacturing partners as well, but this issue is one that applies to all coffee producers, not just Starbucks.

While it is clear that Starbucks is responding to criticism and improving their environmental record, the consumer still needs to be worried about their waist line if they visit the store too often. Excessive sugar consumption can contribute to obesity.

These are only a few of the challenges that Starbucks creates for our planet and our health. Hopefully, this retailer of coffee can make some changes so consumers will have fewer concerns as they enjoy a warm mug of coffee.

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The Dark Side of Chocolate

By Cal Hale

Wouldn't it be terrible if one of America's favorite desserts was widely produced with the labor of trafficked children and slaves? The average American consumes 11.7 pounds of chocolate per year (Chanthavong), and up to forty percent of it is produced with child slave labor. As Americans, we like to think that we are socially responsible people, however, we are constantly hurting impoverished laborers in other countries with our chocolate buying decisions.

Nearly all slave labor and child trafficking in chocolate production occurs in West Africa; most of it in Cote d'Iviore (Mallan). The International Labour Organization (ILO) estimates that 284,000 children are working in hazardous conditions in Cote d'Ivoire, Ghana, Cameroon and Nigeria. Many of these children (200,000 of whom are in Cote d'Ivoire) are slaves (ILO). Oftentimes, children are abducted from Burkina Faso with false promises of a better life. Instead, they are forced to labor ten hours a day with no school in dangerous conditions while only their traffickers get paid (Mallan). The ILO defines situations where children under twelve are working or where children's work interferes with their school as, "The worst forms of child labor" (ILO). While most major companies claim to have implemented processes to insure that child labor was not used in the manufacturing of their chocolate, the trading in West Africa is so unregulated that it is very hard for the companies to be sure (Mallan).

There have been efforts to stop slavery and trafficking. The Harkin-Engel Protocol, which was proposed in 2001, was created with the teamwork of both the chocolate industry leaders and Congressmen Eliot Engel and Tom Harkin (Responsible Cocoa). Archer Daniels Midland, Barry Callebaut, Cargill, Ferrero, The Hershey Company, Kraft Foods, Mars Incorporated, and Nestlé all participate in the protocol (Responsible Cocoa). The Harkin-Engel Protocol focuses on Cote d'Ivoire and Ghana, its goal being to reduce the worst forms of child labor in those countries by 70 percent total by 2020 (Responsible Cocoa). On September 13th 2013, Senator Harkin, Representative Engel, The United States Department of Labor and the governments of Cote d'Ivoire and Ghana signed a joint declaration intended to assist in the execution of the protocol (Responsible Cocoa). Nestlé announced a partnership with the Fair Labor Association in November 2011 in an effort to improve their working conditions in Cote d'Ivoire (Pachino).

Despite these apparent efforts to curb irresponsible labor practices, lawsuits have been filed against Nestlé and Hershey (Hals) for their use of child slavery and they appear to have had some influence. Nestlé has released some Fair Trade products in the United Kingdom (Mallan) and Hershey has pledged to be completely Fair Trade by 2020 (Ryan). In an email with Nestlé, a company representative, said "Nestlé believes child labor has no place in our supply chain, and we are firmly committed to actions to eradicate unacceptable practices in line with our commitments in the Nestlé Corporate Business Principles and the Nestlé Supplier Code" (Pachino). While talking about Hershey's devotion to social responsibility, John P. Bilbry, the president and CEO of Hershey says, "The new goals we have set for ourselves are fundamental to our business strategy and linked to how we will grow our business around the world" (Hershey). In other words, while the chocolate industry has issues with its use of irresponsible practices, consumers have pushed many companies into working (or at least claiming to be working) towards better social responsibility.

> "Buying Fair Trade certified products is the only way to be positive that your chocolate is slave free..."

Many smaller Fair Trade companies are beginning to have an influence on the chocolate market. Endangered Species, Rapunzel, Equal Exchange, AlterEco, Divine, Theo, Shaman, Terra Nostra, Sjaak's, Green & Black's and Dagoba are all 100 percent slave free and some are even starting to become well known companies. While their products are slightly more expensive, the price difference is not too big and they are able to make Fair Trade, yet high quality, chocolate.

Equal Exchange is one of the most influential of these small companies. Founded in 1986, it is worker owned and has a rule that the highest paid employee makes only four times what the lowest paid worker or supplier earns. 100 percent of its products have been Fair Trade Certified (Equal Exchange). Equal Exchange has a direct connection with its farmers which means that it is able to offer products at a price lower than what many people would expect for Fair Trade because there does not need to be a price raising middleman in their transactions (Equal Exchange).

Ben & Jerry's, known for being a progressive "hippie" ice cream start-up, is probably the biggest company making significant ground in the Fair Trade movement. It is owned by Unilever but is run by an independent board of directors that give it more freedom than most Unilever sub-brands. Ben & Jerry's became the world's first ice cream company to use some Fair Trade ingredients in 2005 and their five biggest commodities (sugar, cocoa, coffee, vanilla and bananas) were all Fair Trade Certified by the end of 2011. At the end of 2013, all Ben & Jerry's flavors, most of which contain cocoa, qualified for Fair Trade certification (Unilever).

If a product is Fair Trade certified, it is guaranteed that the farmer received a fair price for their product and that no slaves were used in its production. Buying Fair Trade certified products is the only way to be positive that your chocolate is slave free and has become easier in the past few years. At first, Fair Trade products were carried mainly only by co-ops, but they are now available in many major grocery stores. Green & Black's, Equal Exchange and Ben & Jerry's are all high quality Fair Trade companies that are turning up frequently on the shelves of major stores. There are two most frequently used symbols that appear on packaging that signify if a product is Fair Trade; a black and white silhouette of a person holding two scales and a more modern logo with blue and green graphics surrounding a black silhouette of a person with one arm waving. These symbols make it easy to see which products are Fair Trade certified and make it easy to find them in your favorite store.

Slavery and child trafficking are a major problem in the chocolate industry with up to 40 percent of chocolate being made with some element of child slave labor and 284,000 children working in hazardous conditions in West Africa (ILO). Many companies, although claiming to not have the worst forms of child labor in their production, are really unable to track the production of their chocolate (Mallan). The Fair

Continued on page 23

What Breed Is Right For You?

Selecting the Right Chicken or Cattle Breeds for Your Farm

By Alexxy Kendall

"I walk into the poultry barn at the Tunbridge World's Fair, a curious five year-old, heart pounding with awe as I gaze upon the dazzling array of chicken breeds. From tiny balls of fluff to massive crowing roosters, it was all there. I continue to the cattle barn to see what new and exciting animals await me, from Jersey cattle to monstrous oxen, it was all there."

Ever since I was a young child, I have possessed an ardent passion for animals. These experiences at the fair I had when I was a child inspired me to dig deep into the world of agricultural animals. I started researching scores of breeds of many different species of farm animals and helping new farmers select the right breed for their farm or home.

With so many breeds and varieties to choose from, it can be a mind boggling endeavor to select the breed that is right for your farm. Not every breed is for every person. In fact, farm animals are classified into multiple categories depending on their purpose. I will focus on the following:

Meat
Animals that are raised to be killed and used for consumption.

Animal Products
(Such as eggs and milk)- Used to be consumed or sold for a profit.

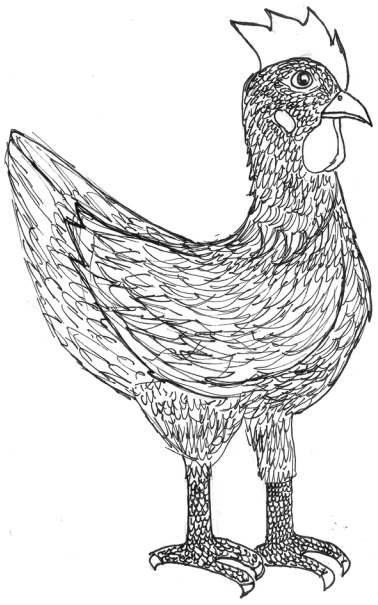
Dual Purpose
Animals that are raised for more than one purpose, for example a chicken raised for both eggs and meat is a dual purpose chicken.

Ornamental
Animals to be used for exhibit and show purposes.

Chickens

There are many reasons to keep chickens. They provide fresh eggs, don't take up much space, are generally inexpensive when compared to other livestock, and are good for foraging. Chickens are also readily available. They can be obtained from online hatcheries as chicks or from local farmers as pouletts (chickens almost at the laying age). Some people even keep them as pets, because of their individual personalities and silly demeanor. With over 200 breeds of chickens to choose from, it can be hard to select the perfect breed for your farm.

One of the main reasons people like chickens is for their delicious fresh eggs. Eggs are a great source of protein and provide a wealth of vitamins and minerals, such as Vitamin A, Potassium and Vitamin B. (Discovery Health)



The Leghorn takes the prize for being one of the most prolific laying chickens of all time. Some leghorns can lay up to 300 eggs per year! (Chickscope) Most of the eggs served in restaurants and sold in grocery stores come from this breed. Leghorns are handsome birds that come in several color varieties but are mostly known for their snow white coloration. They are small to medium sized birds, coming in at 4.5 pounds for hens and around 6 pounds for roosters. Leghorns arrived in America from Italy in the early 1830's (American Livestock). They are lively, hardy and active birds and are fantastic foragers. They are also popular because of their early maturity when compared to most breeds.

The Rhode Island Red (RIR) is a fantastic dual-purpose breed of chicken for several reasons. RIR's were first developed in Massachusetts and Rhode Island in the mid 1800's. They are known for their distinct reddish brown coloring and average about 6.5 pounds in weight (Dohner). They are excellent layers of large brown eggs and are very hardy birds. RIR's can also make good meat birds because of their larger size and relatively early maturity. RIR's can even be shown at Poultry shows (Adave).

Poultry shows have exploded in popularity and there are now breeds of chickens developed specifically for ornamental purposes. One of those breeds is the unmistakable silkie chicken. Silkies are adorable balls of fluff that average about 2 pounds in weight. Their feathers are the texture of fur, giving them their unique name. They come in several color mutations, including black, white and blue splash. Though they aren't good egg layers and their feathers can be high maintenance, Silkies have very docile personalities, therefore making them excellent pets and show birds (Silkies).

Cattle

Cattle are very beneficial animals to have on a farm. They provide a wealth of meat (enough to feed a family for quite a while), milk and other dairy products, and many cattle can also be shown. There are more than 800 breeds of cattle in the world today, and each breed has it's strengths and weaknesses.

One of the best reasons to raise cattle is for their dairy products. Cheese, milk, and yogurt are some of the many foods made from dairy products. Jersey cows are one of the best breeds of cows for milk. They are also one of the oldest dairy breeds. Jersey cow milk is rich in butterfat. They are also known for being highly adaptable to a wide range of climates, their longevity, and reproductive efficiency. They are relatively small-sized, weighing about 900 pounds (Cattle). They produce more pounds of milk per pound of body weight than any other breed of cow. Though Holstein cows produce more milk than Jerseys, Jersey cattle stay productive longer. (Purebred dairy)

The Black Angus cow is regarded by many as the best breed of cow to use for beef. Angus cattle are known for their high quality meat, hardiness, and being relatively good natured. They have a high feed to meat conversion. They are naturally polled (meaning they never grow horns). Angus cows calve easily, giving birth to healthy, vigorous babies and stay productive later than most breeds. (Cattlesite)

With so many breeds available, I have only covered the tip of the iceberg. There are many other options, and new breeds are waiting to be discovered. The animals I mentioned excel

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Cruel Exemptions

By Olivia Lober

Caged animal feeding operations (CAFOs) have become a popular method of growing our food in the US today. The first CAFOs wanted to mirror the late 19th century example of manufacturing in order to develop a more efficient way of producing food (Imhoff, page xi). Though CAFOs may have had good intentions in the beginning, recent studies are revealing some of their negative impacts on the world, such as air and water pollution and cruelty to animals. Groups that are trying to change the way CAFOs operate have had little success because as large businesses, CAFOs are exempt from many of the laws that affect smaller farms (Facts). Some of these laws include testing for air quality, testing for water quality, and any laws around animal cruelty.

Small poultry farms require a clean water permit to operate, while poultry CAFOs don't. A clean water permit grants state workers permission to come and test the purity of the farm's water (Water Pollution). When there is animal manure, litter, dander, feathers, and any leftover antibiotics, a poultry CAFO is allowed to let it wash away into the watershed. Impure water can be especially dangerous because elevated levels of nitrates can cause a potentially fatal blood disorder called "blue baby syndrome" (Facts). The polluted water can contaminate the wells of the nearby houses. Some people think that clean water permits should be required. Is it fair for poultry CAFOs to have high quantities of polluted water going into the watershed? Currently, only CAFOs that produce poultry are exempted from the Environmental Protection Agency's (EPA) laws around having a clean water permit. Poultry CAFOs argue that they have so much waste coming from their animals per day that they don't have enough space to contain it all. Probably when the CAFO first began, the manure enriched the soil, but when there is such an overload of it, the manure just piles up. As a result, CAFO animals often stand knee-deep in their own waste. The lack of regulation around excessive waste, and its proper disposal is one of the most disturbing legal exemptions that CAFOs benefit from, though it is certainly not the only exemption.

A second law that CAFOs are exempted from is a rule that the farm's surrounding atmosphere be checked for harmful gases or emissions. The "EPA suspended enforcement of air quality laws against CAFOS five years ago … and in 2008, EPA exempted CAFOs from most pollution requirements altogether" (EIP). A few sources of CAFO air pollution are the barns where the animals are housed, the application of manure to the lands or fields that help them produce better crops, the waste-storing structures, and any handling of the wastes (Facts). CAFOs emmitt up to 168 dangerous gases and hazardous chemicals such as ammonia, hydrogen sulfide, or methane (Facts). Exposure to these dangerous emissions can cause brain damage, dizziness, headache, nausea, sore throats, burning eyes, and diarrhea. The long term effects can contribute to premature death. Is it healthy for CAFO workers to be exposed to these chemicals? While it might be argued that the employees choose to work at the CAFO, the families who live nearby do not have this same choice (Facts). Are the owners/operators of a CAFO thinking about how their decisions will affect the communities around them and future generations? It seems that they may be more focused on maximizing profit. The government has allowed the CAFOs to bypass these crucial laws about air pollution control which seems unreasonable when objectively analysing the results of their actions.

> "If someone had cows at their house as livestock, they would not be allowed to...do most of the things that happen to the animals at a CAFO (caged animal feeding operation)."

The last group of laws that CAFOs are exempted from following are the animal cruelty laws. CAFOs have been exempted from these laws because they say that they "have to deal harshly with the animals because there are so many of them" (CAFOs Uncovered). Some of the CAFO workers also say that "the majority of the animals that die inadvertently at the CAFO each day come from there being too many animals in a small space" (CAFOs Uncovered). In Minnesota, Florida, Iowa, and California a bill has been passed that prohibits any filming or taking of pictures inside CAFOs. CAFO owners hope this will prevent their abuses and unsanitary conditions from being brought to light. They are scared that if people saw these images, they may stop buying their products (Animal Abuse).

If someone had cows at their house as livestock, they would not be allowed to abuse them or do most of the things that happen to the animals at a CAFO. Their cows couldn't be housed or fed the same way as in a CAFO. These big CAFOs get special treatment since they are making a huge portion of our food. The CAFO operators also have plenty of money to pay people to lobby the government so that laws get passed in their favor. Sometimes the government gives in because they don't want the price of meat to go up. The things that are happening to these animals are clearly outlined as "animal cruelty" if one were investigating a pet owner, or even a small farm. It seems that all CAFOs should have to follow the same animal cruelty laws that regular citizens have to follow.

It may be the system that is the problem rather any one CAFO in particular. There is clearly a push in our society towards needing huge quantities of meat to support the demand expressed by Americans at grocery stores and restaurants. It is likely that the individual worker does not hope to abuse animals, but rather is forced into inhumane actions to meet the corporate goals for production. Because of the quantity of animals they must come into contact with each day, they cannot reasonably take the time to think about each animal's individual needs and how they might be treated better. This is also true of the density of the animals in a CAFO. In order to reach the production goals, the animals must be housed close together to facilitate processing. The result is cruelty, but the cause of this cruelty is our national desire for inexpensive meat.

As is evidenced from this article, there are some laws that CAFOs don't have to follow. These meat factories come in, take over, and poison the land, water and air. Exempted laws make it easier for them to engage in these practices. If the government passed bills that made the CAFOs test the waters around their facilities for purity or test the air for harmful chemicals and gases, some of these damaging effects might be prevented. There are ways to influence these practices and limit their existence. People can vote for candidates who will try to change the laws that CAFOs are exempted from. Consumers can also vote with their dollars when they buy food. Remember that when you, the consumer, make the decision to buy local or organic food, and not food from a CAFO you are making a difference. Consumer influence is one of the greatest ways of impacting the choices of large corporations.

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Chicken to Nugget

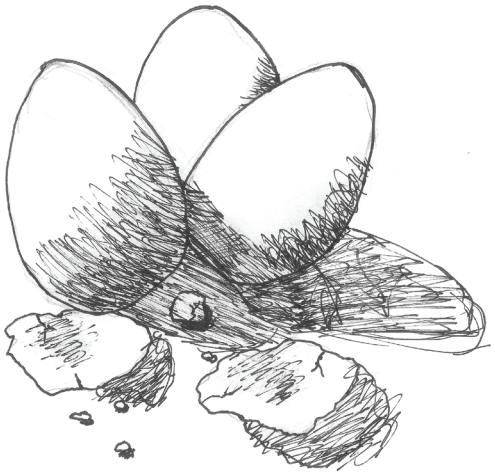
By Max Farrington

Everything was red. Clucky could faintly see the dull outlines of the other eggs breaking open. The low ceiling pushed her head down and the wide spaced holes in the floor shot pain through her foot whenever she tried to move. As the other chicks shuffled to get better footing in the confined space of the hatching drawer, Clucky was pushed to the ground and numerous clawed feet forced her to lie still. Clucky lay there for a long time before realizing she could see through the many holes in the floor. There was another room down there and it looked almost identical to the space where she was now. Heaps of barely hatched chicks were piled in the space below (Home).

Suddenly a blinding light shone through slots in the drawer as it was roughly yanked open. The floor tipped to the left and the chicks on top of Clucky fell down the newly tilted slope. She looked down and saw a large cardboard box waiting for her below. The drawer shook and Clucky lost her footing causing her to fall into the box. She hit the floor head first and blacked out. Clucky woke up staring into nothing but blackness. She heard rustling all around her and froze. The rustling continued all throughout what she could only call the night. Clucky kicked the ground and discovered that it was soft and sandy. Her head ached and throbbed so she kept kicking until she had made a small divot and hunkered down for some much-needed sleep.

"Workers swiftly cut off the 'good' parts of the chicken like the breast, legs, and wings. The remaining bone and flesh was ground up and pushed through a high-pressure sieve to extract the remaining bone. What came out the other side is currently known as Pink Paste"

A hard kick startled Clucky awake, and left her with a throbbing pain in her side. Light shone through slits in the wall of the almost endless rows of chickens. Large humans bustled through the millions of young chickens kicking them aside to get to the center (Advocacy). Clucky looked around and saw a dirty red trough being filled with ground grain. Thousands of famished young chickens swarmed to get at the top of the pecking order. Clucky ended up somewhere in the middle of the crowd and waited to get her share of grain. This routine continued throughout several weeks only discernible by the daily ritual of the humans bringing grain.



It was her 49th week and Clucky got up early in the center of the large barn to guarantee she would be the first to the grain (Advocacy). Other chickens were up and more woke as they waited. Suddenly the doors at the very end of the barn opened and about twenty workers walked in. Behind them was a large rumbling tractor carrying numerous wire crates. The workers started grabbing chickens and stuffing them into the crates. Clucky raced to the opposite side of the barn and hunkered down along the smooth flat wall. The wall, however, provided no protection from the bustling workers. The workers moved quickly and rounded up the remaining chickens into the crates. Clucky was snatched up along with two others and shoved into a crate; four other chickens came through the door and fell on top of her. Clucky was scratched and clawed as they all tried to get in a more comfortable spot. When all the chickens were rounded up, the tractor pulled out with the crates into the blinding sunlight. The chickens were packed into a large tractor-trailer truck already stuffed with thousands of birds. As the last crate was pushed in, the doors closed with an ominous clunk; closing out all sounds from the surrounding "farm."

The truck carrying Clucky and the thousands of other chickens traveled for two and a half days before it reached its final destination at a meat processing plant. Once in the loading zone, many workers scrambled to unload the heavily laden truck. The crates of chickens were hauled inside, where a line of workers swiftly pulled the chickens out of the crates and hung them by their feet on a circulating belt that ran all throughout the factory. The first machine the chickens encountered was an electric shocker that would render them unconscious for a few minutes. As Clucky neared the shocker, she grew frantic and swayed on the belt, but immediately stopped as the high voltage shock streaked through her body. The belt ran past a razor sharp blade that was angled to slit the chickens' necks as they were pulled past.

The belt swung Clucky and the other chickens up and down all around the plant to drain their bodies of blood. She was then put through a boiling vat of water followed closely by a machine with "rubber fingers" that plucked out the bird's feathers and cut off their heads, feet, and internal organs. (Chickens that were unfortunate enough to still be alive from missing the blade were deceased by the time they came out). Clucky's carcass was sprayed with ammonium chloride to sterilize any bacteria that might still be on it. Workers swiftly cut off the "good" parts of the chickens like the breast, legs, and wings. The remaining bone and flesh was ground up and pushed through a high-pressure sieve to extract the remaining bone. What came out the other side is currently known as Pink Paste. Clucky, now Pink Paste and chicken parts, was ready for her final destination- a food manufacturing plant.

Various food manufacturers prefer to use select parts of the chicken for different foods. For example, McDonald's uses only the white breast and the skin to shape their McNuggets® into the odd forms of "the Bell", "the Ball", "the Boot", and "the Bone" (Tepper). Other manufacturers form the Pink Paste into "fun" basic shapes. Clucky went from a small hatchling to seven Boots, three Bells, twelve T-Rexs, and one disgusting lesson about the "meat" that forms these shapes. As you can see, the process abuses the chickens and uses parts of the chicken not seen in public to give you this "tasty" snack.

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The Revolution of Fish Farming

By Dillon Buttner

Did you know that more than 50% of globally consumed fish are farm-raised (Staff). Fish are also frequently harvested from the wild. We can obtain fish by fishing with a rod and reel, and we also get fish with nets. Sustainable fish harvesting is critical to our planet's health and the long-term survival of a variety of fish species that we rely on for food.

Fish farming is the principle form of aquaculture. This involves raising fish commercially in tanks or enclosures, usually for food. The most farmed fish are carp (20,571,892 tons per year), salmon (1,835,834 tons per year), catfish (1,305,227 tons per year) and tilapia (2,138,403 tons per year) (Fish). The American Fish Food Company has been the main supplier of the US since the end of World War II (Supplier). Fish farming has evolved over the decades, and with its evolution, many advantages and challenges have arisen.

Fish farms were created so that wild fish species could repopulate their numbers and thrive in their ecosystems. One of the problems with fish farming involves what the farmed fish are fed. Some fish farms feed their fish wild fish species, and in doing so, they deplete the wild fish population; which contradicts why fish farms originated in the first place. Feeding wild fish also makes some of the farm fish carnivorous. If the farm is located in a natural waterway the fish can escape out of the tanks and become "alien" invaders. These invaders end up eating the natural fish species and have also been known to attack humans. Increasingly though fish farms are feeding their fish a vegetarian diet. The diet consists of mainly algae (Durnham). An algae diet would help prevent the farmed fish from becoming carnivorous "alien" invaders; which would benefit the natural fish population as well as the human population. A better gate system would also help keep the farm raised fish from jumping into the natural waterway.

With the slow moving water inside the fish tanks, the fish are in danger of contracting Sea lice. Sea lice are small parasites that suck the blood of the fish and sometimes carry harmful diseases from fish to fish (Morton). With the slow moving currents in the fish farms, the fish can also become unhealthy due to the lack of oxygenated fresh water and will often need antibiotics to fight off a disease before it spreads throughout the other fish. Some of the antibiotics that are given to fish aren't healthy for human ingestion and some of the tanks are cleaned with chemicals that could contaminate the water and kill the fish and maybe endanger humans.

There are also many positive aspects of fish farming. One of the advantages of using fish farms is their efficiency. With fish farms you can grow fish faster and cheaper than fishing in the wild. Fish farms can feed such an enormous amount of people that it gives the wild fish a chance to repopulate and be more plentiful. More fish in the natural waterways helps the ecosystem and there can be enough for recreational use for the sport of fishing. There are also many wild animals and birds that need the fish in their diet as well, like bear, beaver, fox, fisher cats, bald eagles and osprey, just to name a few. Fish farms can harvest a constant supply of fish year round, unlike in the wild when harvest depends on the season and the location of the fish. New ideas and innovations are happening to offset some of the difficulties these farms face.

> "...Fish farms have evolved over the decades to produce more fish, but challenges have arisen concerning health and environmental impact."

A new invention has dominated all other fish farms. Aquapods are a new and more sustainable method for fish farming, invented by Steve Page in 2005. An Aquapod is basically a floating fish farm that is almost fully sustainable. The Aquapod has little panels on the side that allow small baitfish to enter the tank to feed the farmed fish. An Aquapod is a sphere made out of a series of individual net panels, which can be replaced separately. Most of the Aquapods are around 30 feet in diameter, but can be as large as 92 feet in diameter (Solon). One Aquapod weighs a whopping 36,500 pounds and costs $140,000. A single tank can hold approximately 2,000 individual fish (Hoar). Each Aquapod holds a single species of fish and can accommodate them with different sized panels so their specific baitfish can fit so they can swim into the pod.

There are many benefits of fish farming with the Aquapod. The Aquapod is 100% predator proof. This tank can withstand the attack of lion seals, tiger sharks and penguins (Ocean). The fish in the Aquapod are always healthy because of the constant current flowing through the tank, making maintenance easy. One of the conveniences of the Aquapod is its ability to rotate; this allows for easy cleaning. Underwater cables keep the Aquapod submerged. When the pod is allowed to rise, the portion of it that breaks the surface can be power washed. Then as the pod is rotated, the rest of it can be cleaned as well. Aquapods are also very earth friendly with their panels made of reinforced high-density polyethylene with 80% recycled content. The concerns that arise with Aquapods are affordability and depletion of baitfish, which feed the Aquapod fish, for the fish already in the ocean.

As you can see, fish farms have evolved over the decades to produce more fish, but challenges have arisen concerning health and environmental impact. The amount of fish we are consuming is on the rise with Americans trying to get healthier with Omega-3 rich fish in their diets. On average each person consumes 37.4 pounds per year. That's 286,440,000,000 tons of fish per year worldwide (Fisheries)! Fish farms are on the right track by producing so many fish which gives our natural waterways a chance to replenish the fish and help our ecosystems. We need to be careful not to sacrifice safety in order to attain greater numbers of fish. The chemicals that clean the tanks need to be regulated as well as antibiotics given to sick fish. Maybe we can figure out a way to make Aquapods more affordable to raise fish in a more natural setting. Healthier fish equal healthier humans.

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The Real Truth About rBGH

By Ethan Radicioni and Ty Gagliardone with assistance by Pam Ward

"The dairy industry is obsessed with increasing milk production," according to the Food Animal Concerns Trust (What), more milk means more money. But cows' udders can only hold so much milk. So what's a poor farmer to do? Monsanto knows! In 1994, they released a drug called Posilac that can actually make cows' udders bigger. It's known to consumers as rBGH or Recombinant Bovine Growth Hormone. When rBGH was first created, some farmers thought it was going to be a great idea, but now a group of farmers are realizing there are negative consequences for cows, people, the environment, and the economy.

Consequences For The Cows

Farmers who use rBGH need to consider the consequences of their choices and how it can hurt the cows. Cows can have three major health problems from rBGH. The first problem is that larger udders are too big for cows to carry. Large udders can cause swollen knees and broken legs. Another health concern is mastitis, which is a painful infection in the cow's udder. The infection eventually plugs the milk ducts and milk can't go through. Mastitis results in headaches, fever, and sores in cows. Mastitis causes less milk production and then sooner or later the affected cows will be sold to a big meat processing plant to be slaughtered because they can't produce enough milk. The last problem is that the cows can get disorders in their ovaries (North). Farmers are not always aware of the negative consequences of rBGH. They are often only thinking about the profits.

Health Concerns For People

People can also have many health problems from rBGH. The first health concern is high levels of growth hormones or IGF-1 in consumers of milk (Recombinant). As a result of this elevated hormone level, women are more likely to get breast cancer from exposure to rBGH (Recombinant). Young girls are also at risk because they can develop breasts earlier than normal from the growth hormone in their bloodstream (Recombinant). The second concern relates to the antibiotics that the farmers use, on the cows, to treat the problems they get from the rBGH (Recombinant). The bacteria can eventually become resistant to the antibiotics, which is then transmitted to people through the meat.

Consequences For The Environment

Another thing that rBGH affects is the environment. Large factory farms are claiming that rBGH is good for the environment because cows don't need as much land to produce as much milk (RBGH). Also, less cows for the same amount of milk cuts down on greenhouse gasses from cow emissions. Opponents of rBGH see this differently. First of all large factory farms, rather than small-scale farms tend to use rBGH (RBGH). These large farms do not have cows wandering around in pastures like small-scale farms. Instead, the cows are kept in small confined spaces where food is brought to them. This requires energy for the food transportation process increasing green house gasses. It also requires that their manure be collected in large piles, which is eventually spread on fields. Because there is so much manure in one place, the ground can get saturated, increasing the chance that the manure will run off into rivers and streams. This leads to the rBGH hormones, and excess nitrogen getting into rivers and streams, which is harmful to the ecosystems in these waterways (North).

> "...Larger udders are too big for cows to carry. Large udders can cause swollen knees and broken legs."

Who Uses it And How it Affects The Economy

A lot of the big farming corporations use rBGH as a faster and cheaper way to sell more dairy products. The more milk they produce the more profits they receive. Organic farmers can't use rBGH because then they can't be certified organic. Mostly large factory farms and businessmen use this additive because the large companies are more concerned about money. However, there are many large companies that have agreed not to use rBGH, including the following:

(P) = partially rBGH free
(C) = completely
1. Dean Foods (P)
2. Kroger (C)
3. Dairy Farmers of America (P)
4. HP Hood (P)
5. Darigold (P)
6. Prairie Farms Dairy (C)
7. National Dairy Holdings (P)
8. California Dairies, Inc. (C)
9. Safeway Dairy Group (P)
10. Publix Super Markets (C)
12. Ben & Jerry's Homemade Inc. © (C)
13. Stonyfield Farm, Inc. (C)
14. Michigan Milk Producers Assoc. (C)
15. Wilcox Farms (C)
16. BelGioioso Cheese Inc. (C)
17. Cloverland Green Spring Dairy (C)
18. Smith Dairy Products (P)
19. Oakhurst Dairy (C)
20. Wawa Dairy (C)
21. Joseph Gallo Farms (C)
22. Oberweis Dairy Inc. © (C)
23. Sweet Scoops ™(C)
(Richardson)

In conclusion, rBGH does increase profits for farmers, but its not healthy for people, cows or the environment. We think that farmers who use this product should not just think about their profit, but think about all the harm they are causing to the cows, people, and the environment. This is not helping anyone but the farmers and the cows don't deserve to have oversized udders and have to be constantly milked. It's a scary feeling that you could get cancer just from drinking some milk. So we now hope that when you go into a store, to buy milk you will look at the label to see if rBGH is going to be in the milk you consume.

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Organic vs. Local

By Matthew Porter

Have you ever gone to the store and had trouble deciding whether to buy local or organic food? The questions you may face are: Which is cheaper? Which is healthier? Which has more vitamins? Which is better for the environment? Organic and local crops can both provide good benefits. Local food supports small community farmers, and doesn't have to travel far to get to a market, so it stays fresh, while organic food avoids the use of unnatural chemicals.

Organic

There are many good reasons to support organic farms. To start with, organic produce is healthier. Instead of chemicals, organic farmers rely on natural farming techniques such as insect pollination, crop rotation, and manure fertilization to help the crop grow. Organic food is healthier for people and the environment. "A 2002 study on food additives and contaminants showed that organic crops had just one-third the amount of pesticide residues as conventionally grown crops." (Lenahan). Also, the use of GMOs in organic farming is not allowed during any stage of organic food production, processing, or handling (FAQ: Organic Agriculture). The FDA has no GMO safety testing requirements, and genetically modified ingredients are found everywhere in conventionally grown foods. The way GMOs are created disrupts the plant's DNA in potentially harmful ways including the possible production of new allergens, carcinogens, or pathogens (What's the problem…).

There are a few disadvantages that come from organic farming. First, much of organic food is flown in from other states or countries because it cannot all be produced locally using organic methods. According to the Council on the Environment of New York City, "Transporting food long distances uses tremendous energy: it takes 435 fossil-fuel calories to fly a five calorie strawberry from California to New York." (Cohen). Organic food can also have negative effects on consumers. Organic farming is more time and is labor intensive, and the certification process can be expensive and difficult, resulting in higher priced foods (Why Is Organic…).

Local

Local food has multiple benefits. Firstly, it is much fresher because it travels a short distance. Local food gets to the market much faster than non-local, but organic food, which might come from all over the country or world. "The more steps there are between you and your food's source, the more chances there are for contamination. Food grown in distant locations has the potential for food safety issues at harvesting, washing, shipping, and distribution." (Klavinski). This means that since local food is from nearby, there is less of a chance for getting sick from the food.

Local food is also full of flavor. When grown locally, the crops are picked when they are perfectly ripe versus being harvested by farmers early in order to be shipped and brought to the store. Additionally, the money consumers spend on locally grown food directly supports the farmers and growers, who in turn, reinvest it in local businesses and services in their community (Klavinski).

Locally grown food also has its disadvantages. The Digital Journal states "local food is more expensive than other foods because farmers have to work a lot harder than {when it is produced in} big factories," (Exclusive Local). Another disadvantage is that local food may also use chemical pesticides, herbicides, and fertilizers to help the plant grow, if it is not certified organic. Another challenge is that consumers might not get all the produce they need from one place. According to the staff at Greenleaf, "Going to several different places to get everything needed takes a lot of time, which can be a serious problem nowadays." Greenleaf is a farm-owned website for farmers, and local consumers. Another loss from buying locally is that consumers can't buy fresh produce year round; there can be some difficulties getting the nutrition needed in the winter.

My opinion is that Local and Organic foods are equally matched. Local food has the benefit of not having to travel far to get to the market and being ripe and delicious when consumers buy it. It also has its disadvantages. You can only buy food in season. Organic food has its benefits too, including that no chemicals were used in the production process. The downside is that organically grown food might be shipped across country in a plane that contributes to global warming. The ideal purchase would be to eat mostly local and organic food, but this might have some additional costs.

Comparison Table:

	Local	Organic
Cost	Local food is, on average, only ten more dollars a month compared to cheap factory food (Exclusive Local).	Organics can cost up to 50 percent more than conventionally grown food (Exclusive Local).
Nutritional value	Local food has more nutrients because it doesn't have to travel far, and the nutritional value stays packed inside the crop because of the short travel distance. (Watson).	Organic food has fewer additives and pesticide residues than conventional food.(Watson).
Effect on the Environment	Local food varies with its effect on the environment. It could be awful for the environment and use pesticides, or it can be good and use very few or no chemicals. The one thing it does not do is travel very far to get to someone's plate.	Organic has little problem with the environment because there are no chemicals or other unnatural things being added to it. However, it might travel long distances which would contribute to air pollution and climate change.
Taste and Flavor	Local food is definitely full of flavor because farmers pick it at the peak of its ripeness. The local food doesn't have to travel as far as some organic food, thus it can maintain its fresh taste.	Organic has great flavor, but for a different reason. Organic food does not use any chemicals that will eliminate the nutritional value and flavor.

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The Colorful Problems Of Food Dyes

By Charlie A. Amato and Jack Kelly

Do you know what gives your Gatorade that bright, amazing, luscious color? Artificial food dyes are the reasons so many of our foods are bright and colorful. Artificial food dyes are chemical dyes that are used to color food and drinks, like Gatorade. Many foods and drinks are brightly colored to look more appealing, and make consumers want to purchase and eat them. Chemicals are used to make foods look and taste better. Food dyes are found in foods like M&M's, sodas, and a multitude of other processed foods and drinks (Downs).

Food dyes are made of many different unhealthy substances. They are made of oils, such as petroleum. Petroleum is a thick flammable yellow or black mixture of gaseous, liquid and solid hydrocarbons that is known to cause cancer (Petroleum Geology). Food dyes also consist of many different kinds of artificial chemicals. Some common food dyes are: Yellow 5, Yellow 6 and Red 40. Six other of the most common food dyes are made from petroleum (Food Dyes: A Rainbow). It is a hazardous chemical and is not meant to be eaten.

The reason why we use food dyes is to improve the food's or drink's flavor and appearance. They are also used as preservatives, to make food last longer. If foods look better and taste better consumers will want to buy the foods and eat them.

> "You wouldn't see food dyes in produce like cucumbers or strawberries because they are natural, with their own colors and flavors. But most the foods that are artificially produced have food dyes in them."

Are food dyes healthy? It's pretty obvious that artificial food colorings are not healthy and there are some pretty serious consequences for consuming excessive amounts of them. Some of the risks include cancers, such as kidney, brain, bladder and testicular cancers. Other health risks are hypersensitivity (allergic-like reactions) and other behavioral effects in children like hyperactivity (Are You). Food dyes have also been linked to ADHD (Shapley).

Food dyes are mostly found in sweetened foods, packaged and processed foods, and fast foods. This is because these foods are mostly artificial, which means that the foods themselves are chemically made and since they don't already have their own taste and color it must be put in artificially. You wouldn't see food dyes in produce like cucumbers or strawberries because they are natural, with their own colors and flavors. But most of the foods that are artificially produced have food dyes in them. Try to avoid food dyes, try to stay away from sweetened, packaged, and fast foods (Artificial Food Coloring).

Food dyes are everywhere. They make foods look more attractive, and make foods taste better. Yet they can lead to many health problems. The bottom line is, consuming food dyes in moderation is okay, but try to steer away from having an excessive amount of them.

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If You Don't Eat Your Pizza You Won't Get Any Pudding!

By Kian Kaufman and Joseph Campbell

In schools everywhere, making children eat vegetables has been an ongoing problem. Three years ago, Congress tried to make it easier, by considering pizza a vegetable. On November 14, 2011, Congress passed a bill that considers any slice of pizza with two tablespoons of tomato sauce a serving of vegetables. So now schools can serve pizza as a lunch item and claim that their students are eating perfectly healthy vegetables.

Congress claims that by passing this law they were providing a food they knew kids would eat. But many people believe that the real reason is to promote cheap eating, because the amount of money per meal per student is only fifteen cents (Santos). Because of this budget constraint, schools can only serve unhealthy foods disguised as vegetables. Most nutritionists believe that this is an attempt to bring back President Reagan's plan to try to pass a bill in 1981 classifying ketchup as a vegetable, to allow large businesses to provide their food to students (Aubrey). The final version of the bill unraveled new school lunch standards made by the USDA in 2010 (Kliff), which required fewer potatoes, restrictions on sodium and more whole grains (Adams).

> "Compared to pizza, the nutritional value of tomatoes is amazingly healthy."

Despite how it tastes, calling pizza a vegetable is going a bit too far. Compared to a serving of plain tomatoes, a slice of pizza has 10 grams of fat, including 25% of the recommended value of saturated fats. Also, one slice of pizza has a ton of sodium at 640 mg. This is 26% of the recommended daily allowance of this nutrient! Pizza's only nutritional value is that it has a relatively high amount of assorted vitamins and minerals, including vitamin A, D, B-12, C, and B6, along with the minerals Magnesium, Iron, and Calcium. Despite the few good nutrients in pizza, they still have far too many saturated fats, sodium, and other fatty ingredients to be considered a wholesome source of vegetables (Nutrition Facts, Pizza).

Compared to pizza, the nutritional value of tomatoes is amazingly healthy. For example, one tomato has 22 calories per serving, .2 total grams of fat, 6 milligrams of Sodium, 292 milligrams of Potassium, 4.8 total grams of Carbohydrates. Tomatoes also have many incredible vitamins and minerals, such as Protein, vitamin A, vitamin C, Calcium, Iron, vitamin B6, and Magnesium. As you can see, the nutritional value of tomatoes trumps pizza's fatty ingredients. Students would greatly benefit if actual tomatoes were served instead of pizza (Nutrition Facts, Tomatoes).

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Eating the Diet of a Honduran

By Jasmin Johnson and Erin Shands

Have you ever had to eat the same thing for a week? We have. For a whole week, we ate the diet of a middle class Honduran family. The diet included eggs, beans, rice, tortillas, and a salad that consisted of carrots, cabbage, tomatoes, and an oil and vinegar dressing. The only thing we could drink was water. We kept the amount of food calories consumed at 1,900 a day. We decided to stick to this many calories in our diet, not only because there are people in Honduras with enough wealth to do so, but also because we did not feel like it would be healthy for us as growing young women to limit our intake of calories for a whole week. Our goal in this experiment was to develop greater empathy for the lives of people in a different country, and to see what nutrients might be missing from the diet of these people and how that might affect their daily lives. Having very few fruits in our diet and lacking certain vitamins was a struggle, and many times we craved the "off limits" sugary foods. Watching others around us eat whatever they wanted was difficult, and we realized how blessed we are in the United States to have such a wealth of food choices.

Our diet lacked many vitamins that our bodies require, and if we had continued longer on this diet, we would have become deficient in some of these vitamins. We lacked Vitamins E, B12, D and B3 (niacin) . A symptom of Vitamin E deficiency is muscle weakness, slow growth, cramps, and hair loss. Vitamin B12 (found in poultry) helps make red blood cells. A lack of Vitamin D was a huge problem with our diet. Lacking Vitamin D can lead to an increased risk of cancer, severe asthma, and high risk of death from cardiovascular disease. Lastly, we lacked Vitamin B3 (also known as Niacin). Problems associated with a lack of this vitamin can lead to depression, fatigue, vomiting, canker sores, and indigestion later in life.

For each day's breakfast we had scrambled eggs. Lunch consisted of a tortilla with rice, beans, and/or chicken. Dinner was a salad and chopped up chicken. While this does not sound like a terrible meal, it gets quite repetitive when consumed every day for a week. We ate the same thing each day because in Honduras, they have limited access to a wide variety of foods. While there are certainly grocery stores in Honduras, a large percentage of their population does not have the luxury of including choice and variety in their diets each week.

The second day of the dietary challenge was probably one of the hardest. To celebrate MLK day, there was a potluck at the Sharon Academy high school. The many foods, desserts, and drinks were tempting for us, and we had to resist them. It was tantalizing to see people walk around with big plates of food and eat each bite carelessly.

The third day was average. We both craved all the food we couldn't have (mainly sugary foods and drinks). From day one, we were both sick of this diet. Although we didn't like the diet we were on, it really made us think about other countries and their lack of resources. They have limited access to food each day and don't have a variety of choices like many people in our country do. One of the biggest struggles for us was having no fruits for the whole week. This didn't affect us in the long run, because we eventually ate fruits again, but it would affect people living in countries where they consume very little amounts of fruit.

"For each day's breakfast we had scrambled eggs. Lunch consisted of a tortilla with rice, beans, and/or chicken. Dinner was a salad and chopped up chicken."

On day four, we were so tempted to just cheat and eat anything that we wanted. The days just dragged on. We both couldn't wait for this to be over! We wished that we would had never chosen this topic. Many side effects occurred, such as headaches, cramps, and many frequent cravings. We definitely lacked some of the vitamins found in fruits. Many foods we love had been taken out of our diet. Eating the same foods was really challenging and annoying. It's very hard to be around food and not snatch it out of someone's hands. This diet was getting worse and worse.

Day five was the toughest day of all. In the morning Jasmin's mother made smoothies with all of Jasmin's favorite fruits. Jasmin couldn't drink one sip of it. It was the worst morning ever. It was different for Erin, though. The same morning her mother made tortilla chips. She put oil in a pan and then put the corn tortillas in and let them fry. They were by far the best food Erin had eaten all week. Friday night there was a school dance, complete with different kinds of soda and sweets. Of course, none of this was a part of the diet. We tried to steer clear of the food table but it was hard to watch the other kids just shovel food into their mouths without even giving a thought as to how lucky they are to have it.

Day six was the most exciting day. We were very antsy to be off the Hondorian diet, and the day dragged on for what seemed like forever. We couldn't wait to stuff our face with foods we love. All our cravings would soon be gone and our American diet would appear again. Our excitement continued to go up throughout the day. The thought of fruit, sugary foods and our many cravings were mouth watering. Could the day end any sooner?

Finally! The best day has arrived. We were so relieved to go back to our own diets. We both had a big breakfast but noticed that we couldn't eat as much as we could before. It was amazing to get the sugary taste in our mouths again. We ate all of our most craved food and almost one of everything. We both felt a little bit sick after eating so much and so many different foods. This is because our bodies had gotten used to eating certain foods and got confused when we suddenly changed our diets. The only reason that we did this was because we wanted the experience, but kids in Honduras are still eating this food and they still don't know when their next varied meal will be. Even though we were thankful before, we are even more grateful now. This was a great experience but we hope to never do it again.

It's sad to think that as Americans we are so careless about what we spend our money for food on. Doing this diet really opened our minds to how so many different countries are not as lucky as us. We eat pretty much anything we want at any time. Most Americans don't even think about what they have, and how lucky they are to have it. It's almost as if we expect it and take what we have for granted. Doing this diet was challenging but we learned a lot. In thinking further about our experiment, we wondered about what the diet of impoverished people in

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Food Stamp Expedition

By Nora Rice and Margaret Chadwell

Did you know that 47 million people in the United States are living on food stamps today (Plumer)? Many of these people who are on food stamps choose to buy the cheapest foods, not necessarily the healthiest. This is often due to little education or lack of resources, such as a stove to prepare meals that require cooking. This issue plays a drastic role in obesity in our country. As a result of people consuming cheap and unhealthy foods filled with empty calories, our nation is promoting unhealthy choices. We questioned the possibility of whether one could eat healthily while living on food stamps and decided to attempt it. We created a plausible story of two people's lives and calculated the amount of money they would receive from the government to spend weekly on food. From our experience of living on a food stamp diet, we concluded that it is possible to maintain a diet better than many people perceive, although still lacking the essential nutrients.

> "Nearly all the food that we bought required preparation and the use of a stove. Many people who live mainly on food stamps might not have regular access to an oven, which would affect what they were able to buy."

The Story

To conduct this experiment, we created a realistic scenario of a single mother and her son, living in a small apartment in Vermont. The 22 year-old mother, Zoe, and her 6 year-old son, Timmy, receive a food stamp allowance of $44 a week, a total of $2288 per year (FNS). Zoe is a hair stylist, earning an average income of $18,000 a year. Zoe spends $9,600 per year on rent, their phone bill is $500 per year, the cost of transportation is $2,080 per year, and $6,716 is spent yearly on other basic necessities, not including food. This leaves them with only $4 extra each year that doesn't contribute to buying food. We went grocery shopping, as if we were these people, attempting to buy healthy food for a week on a low budget.

The Shopping Trip

The first step we took in purchasing our food was making a decision about where to shop. We agreed to shop at The Upper Valley Food Co-Op, hoping to buy healthy, yet cheap, food in bulk. Then we planned to go to The White River Co-Op to buy fruits and vegetables at a cheaper cost. It was surprising how much thought we had to put into what food to buy and what quantity was necessary. It took time, logic and calculations that Zoe may not have been able to do between taking care of her son and working tirelessly at her job.

Our Situation

Our situation and the resources we possessed greatly affected what foods we were able to purchase. For example, the fact that we had a functioning oven and stove, as well as time on our hands permitted us to buy cheap but healthy flour to make our own bread. This helped us save money since pre-made bread would have cost twice as much as the raw materials we were able to buy. Nearly all the food that we bought required preparation and the use of a stove. Many people who live mainly on food stamps might not have regular access to an oven, which would affect what they were able to buy. It might have been advantageous to shop at a common grocery store if you were looking for various cheap and healthy foods that didn't involve utilities.

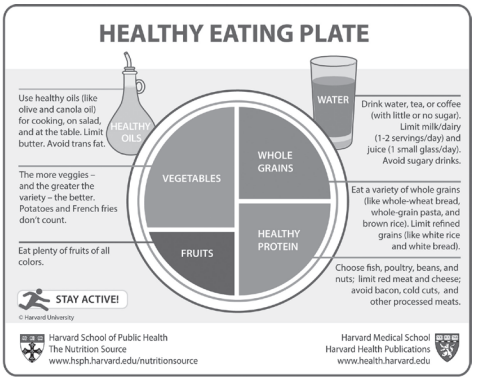
Grocery Store Vs. Co-Op

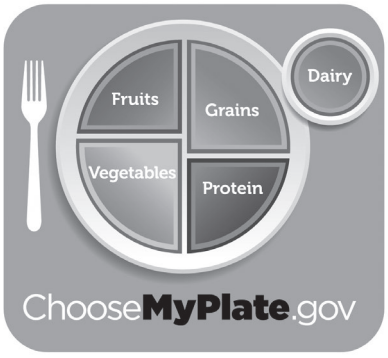
When comparing common grocery stores to Co-Ops, it is known that in grocery stores the prices are cheaper due to the fact that they aren't as fresh and local as the Co-Ops. If we were to shop at a grocery store, we would most likely be able to afford a more balanced diet and have a greater variety of foods to enjoy. However, at the Co-Op, we were able to buy in bulk, which cheapened the unit price, and enabled us to afford a greater amount of food. Another advantage of the Co-Op would be the simplicity of finding local and organic foods. Also, at the Co-Op the produce would be of better quality and the experience is much more pleasant due to a friendly environment. Overall it is cheaper to shop at the common grocery store, but more desirable to shop at a small, welcoming Co-Op.

The Experience

While living on food stamps for a week, we realized the difficulties that came with eating a food stamp diet. Although we had a healthy collection of foods, there was a limited variety and supply so we had to ration out our food for the week. Our diet consisted of mainly rice, beans, oats and pasta, with only a small portion of fruits and vegetables. Throughout the week, we noticed a feeling of fatigue and hunger. In comparing our diet to the one recommended by the Harvard Healthy Eating Plate (Health) (see below), we noticed a significant lack of fruits and vegetables. Also, each day, we received less

Food:	Amount:	Price:
Organic Black Turtle Beans	2 pounds	$4.18
Organic Brown Basmati Rice	2 pounds	$3.78
Granny Smith Apples	10	$6.99
Romaine Lettuce	1 head	$2.49
Cabbage	1 head	$2.00
Carrots	1 bag	$1.40
Organic Peanut Butter	1/3 pounds	$2.94
Organic Whole Wheat Flour	2 pounds	$2.90
Organic Elbow Pasta	2 pounds	$5.78
Organic Eggs	½ dozen	$2.59
Cabot Cheddar Cheese	8 oz. package	$3.29
Skim Milk	½ gallon	$3.39
Organic Oatmeal	1 pound	$1.39
TOTAL		$43.12





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A Peach is a Rose, and an Almond is Too

How much do Americans citizens know about their food?

By Jacob Hudnut

Have you ever wondered if people know about where their food comes from? I have. That's why I conducted a survey to find out how much people know about the origin of their food. In my survey, I took data from 66 people from a variety of states, including Florida and California. Most of them were either in a professional job, or working at a grocery store. I asked them multiple choice questions about their knowledge of how and where food products are grown. I also asked a few short questions about what they had for their most recent meal, and whether they knew where that food came from. My research provided some shocking results.

> "In total, nobody I interviewed knew where the majority of their food came from. Again this shows how exceedingly disconnected we are from the food production process."

One fact that I had not foreseen was that only 23% of the people that I interviewed knew that peaches and almonds were related. Peaches and almonds are both in the rose family, the Rosaceae, and in the same genus, Prunus. (USDA Prunus). Furthermore, 45% of those 66 people were employed and working at grocery stores. This alarmed me, because I thought that people in grocery stores were supposed to be able to inform customers about their food. Not only that, but half of the people working in grocery stores (53%) also thought that pineapples grew on trees. However, pineapples are actually in the bromeliad family, Bromeliaceae, a group mostly made up of insectivorous jungle plants (Florida Hill Nursery). Bromeliads are more closely related to Spanish moss than they are to any tree.

If any fact is surprising, this is: Less than one third of the people that I interviewed knew that peanuts grow underground. Every year, the average American adult consumes over six pounds of peanut products. This adds up to 1,884 million pounds of peanut products that Americans consume (FAOSTAT). Just think that every year, all those peanuts are eaten without most of the consumers knowing that their food was grown underground.

Another perplexing fact is that only 44% of the people surveyed knew that high fructose corn syrup was the main ingredient that makes regular Coca-Cola sweet. This lack of knowledge carries implications. The average American consumes over 35 pounds of high fructose corn syrup every year in soft drinks and prepared foods (Walton). We can assume from the survey data that 44% of those people are ingesting all this corn syrup without even knowing it. This amounts to over two million tons of corn syrup consumed unknowingly every year. The factory farms that grow most of the corn in the United States are using tax dollars through subsidies to grow corn. This government-subsidized corn is then sold to factories that produce this syrup that is almost entirely devoid of all nutrients. No wonder there is so little action being taken to change agricultural policy as it relates to corn and corn subsidies. It seems likely that if more people knew about how much of this completely nutritionless syrup was their food, we might either consume less corn syrup or at least put less government support behind the production of this corn syrup.

Yet another fact that completely boggled me was that Americans, on average eat about 6.5 billion pounds of bananas per year, but in my survey, less than ¼ of the people I interviewed knew what banana plants look like (Cavendish). That means that more than 3.9 billion pounds of bananas are eaten by Americans without them even knowing what the plant looks like. This fact shows how removed we, as consumers, are from the production of our food.

What shocked me the most was that professionals (doctors, lawyers, bankers, etc.) only knew where 39% of their most recent meal came from. Grocery store workers only knew where 33% of their most recent meal came from, and middle school and high school students only knew where 24% of their food came from. In total, nobody who I interviewed knew where the majority of their food came from. Again this shows how exceedingly disconnected we are from the food production process. These days you can just walk into a grocery store and purchase an item without knowing the details of the plant it came from, how it was grown, or where it was grown.

Through this survey, I have come to a conclusion that people do not know much about where their food comes from. But I was thinking, is that a bad thing? Is there a downside to the fact that American culture has become oblivious to where their food comes from? Or is it a good thing that food has become so readily available that Americans have stopped caring about their food's production? I will leave this question for you to decide, and if you think it necessary to learn more about what it is that you are putting in your mouth multiple times each day.

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Is Our Ecological Footprint Stomping Us Out?

By Meadow McGalliard

Think about the lifestyle most Americans enjoy. Most likely they have everything they would ever need and more. Each year, the American lifestyle depletes the Earth's resources. A good way to understand our impact on the Earth is through the Ecological Footprint Theory. An Ecological Footprint is the measurement of human use of the Earth's ecosystems. It measures the average amount of Earths we use in one year. Since 2010, the world has consumed the equivalent of 1.5 Earths per year, which means it would take one and a half years to replenish the resources we have used (Living Planet).

If everyone in the world lived like Americans, the world would use up five years worth of resources in one year (Ecological Footprint). It's hard to believe that's possible. In primeval times, trees were growing, oil was created, and there was land galore. Today, we can use the oil that was created millions of years ago, chop up trees that were grown decades ago and use the land that was made at the beginning of the Earth. This would be acceptable if there was a way to replenish these resources each year, but there is no way to do that. From 1840 to 1870, during the industrial revolution, America's resource usage started to increase and has continued to grow.

America's Ecological Footprint affects people across the globe. In fact, America is impacted by its own footprint. Our excessive use of fossil fuels leads to high carbon levels and pollution. The U.S. is the third biggest producer of carbon across the planet. Along with pollution, America is also using up large portions of land. There are cities, towns, farms, and forests taking up excess land that is needed to live on. When the land is used up we will have to find other habitable places, resulting in even fewer available acres. This will create a continuous cycle that will leave us without land to live on (Living Planet).

Though there are quite a few problems, there are also solutions. Each day Americans are using more than they need and producing large amounts of waste. People can reduce their Ecological Footprints by simply doing some things like recycling, reducing gas mileage, planting trees on their land, using renewable energy sources, and not wasting food (Effects of Consumerism). The world's resources are being slowly used up and we cannot possibly replenish them. Since the resources aren't being restored, our world will run out of the things we depend on to live. It is important for all of us to be more conscientious about the resources we use on a daily basis and to try and reduce our impact on the Earth.

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Pink Slime. Continued from page 8

In the end, there is .02 grams of ammonium hydroxide for every 100 grams of Pink Slime (Carr). In high concentrations ammonium hydroxide is toxic and in still higher concentrations can be deadly, so people react negatively when they find out that this substance is being used in their food. However, ammonium hydroxide is commonly used in many different food products and largely throughout the beef industry, not just in pink slime (FoodInsight). The FDA has deemed it a safe substance when used in moderation (FoodInsight). While it often been used in the case against Pink Slime foods commonly eaten like salami and various cheeses, often contain more ammonium hydroxide then LFTB (Zimmerman).

A third controversy regarding LFTB is the bacteria content. According to the journalists writing for Food Safety News, an online food safety journal, [Beef Products Inc. have] gone beyond USDA's current pathogen testing requirements for these harmful bacteria. In July 2011, the company announced that it had initiated a "test and hold" policy in addition to its various preventative sanitation and food safety programs. Every box of LFTB is sampled, and the samples sent to independent third-party labs for analysis. Every box of LFTB is held at the plant until the labs confirm that all specifications – including the absence of Salmonella, E. coli O157:H7 and other STEC bacteria – have been met. Only once the satisfactory results have been confirmed does the company allow its product to leave the premises.

Thus, while there may have been some issues with the bacteria content present in pink slime in the past, this problem has been corrected.

In conclusion examination of the three main controversies swirling around pink slime, nutritional quality, the use of ammonium hydroxide and the bacterial content, does not provide clear evidence that this is a dangerous product. Doing this research has convinced one of the writers of this article that he no longer needs to worry about pink slime. However, the other writer of this article has no qualms about saying that is a gross product that he desires never to eat. This brings us to our final opinion regarding pink slime that perhaps everyone can agree on.

The USDA does not require that use of pink slime be identified on the labeling of meat products. This means that when consumers purchase products such as ground beef at the grocery store, they have no idea if this is ground muscle meat or ground muscle mean with pink slime used as an additive. We believe that this is wrong and people have a right to know if they are eating this highly processed, less than appetizing food even if it is safe. People should have a right to choose whether or not they are eating pink slime and the USDA should require labeling to state whether it has been added to a meat product.

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Contempt For Hemp

By Zoe McFadden and Emma Labadie

One acre of hemp produces as much paper as two to four acres of trees (General Hemp). So, why is it illegal in the United States? The U.S. is the only industrialized nation that doesn't allow the cultivation of hemp. We are forced to import it (Despite). Hemp was first cultivated in China around 4000 BC. It has been found in almost all continents and has been used for generations. During the early uses of hemp, it was viewed as a gift or a treasure. Agricultural hemp was even used for clothing, incense, and many other things. (Global Hemp) The U.S. has created a major controversy concerning hemp legalization. Some say that its appearance is too similar to that of marijuana, which makes it difficult for the government to determine whether the farmer is growing hemp or marijuana. Even though hemp can benefit us in many ways, the U.S. banned it from being grown in our country for many reasons.

Hemp has been around for millions of years and has served us in many different ways. One way we use hemp is for clothing. One acre of hemp will produce as much fiber as two or three acres of cotton. Hemp fiber is stronger and softer than cotton, making it easy to make durable, and long-lasting clothing (General). Hemp lasts twice as long as cotton. It can also be used as a food source. Hemp seeds are a complete protein source and have all the essential amino acids. They can be made into many different meals. Hemp can even be used in cosmetics (Hemp Hearts). Oil derived from hemp seeds can also be used for non-toxic diesel fuel. Bio-diesel fuel produces energy with less than 1/3 of the pollution from petroleum diesel (Hemphasis). Hemp has the ability to become our main source of ethanol fuel. It can produce more biomass than corn and is capable of being grown in varying climates. When it was legal in America, hemp was used for making strong ropes for ships. Hemp has been said to be ten times stronger than steel, and at least ten times easier to produce (Despite).

At the moment, hemp has more of a history than a future in the United States. Hemp used to be a major resource in the U.S. From 1892-1916, America used an average of 11,000 tons of hemp fiber per year (Hemphasis). The first federal law restricting hemp production was the Marijuana Tax Act of 1937. This prohibited anyone from growing hemp. In fact, all varieties of Cannabis Sativa, including marijuana and hemp, were placed under federal regulation, requiring growers, importers, and processors of hemp to be registered and taxed. Industrial hemp production was restricted even further when the Controlled Substance Act of 1970 categorized any product containing THC as a Schedule I drug, regardless of narcotic content level or use. As a result, the federal government closely regulated the cultivation of all Cannabis Sativa, including industrial hemp (Industrial Hemp). Vermont is one of the nine states that has lifted the ban on hemp, and twenty others have introduced legislation throughout the 2013 session to allow hemp cultivation. Vermont's requirements for hemp production have been established and hemp is now defined as "an agricultural product which can be grown as a crop, produced, possessed, and commercially traded in Vermont," (Despite). Peter Shumlin said he signed the bill because, "I believe the growing of hemp should be legal. Hemp, a different variety of the same plant that produces marijuana, is not a drug, but instead a crop with many constructive uses," (Despite).

> "One acre of hemp will produce as much fiber as two or three acres of cotton. Hemp fiber is stronger and softer than cotton, making it easy to make durable and long-lasting clothing."

The biggest question is, why was such an amazing resource banned? There are a few people that played a part in making hemp illegal in America. Alfred Dupont was one of these people. Dupont's company patented the processes to make plastics from oil and coal. Synthetic substances such as cellophane, celluloid, methanol, nylon, rayon, etc., could then be made from oil. Hemp industrialization would have ruined over 80% of Dupont's business (The Real Reason). Another man that may have contributed to the illegalization of hemp was William Randolph Hearst. He and the Hearst Paper Manufacturing Division of Kimberly Clark invested in an extensive plot of timberlands, which supplied most paper products in America. Hemp was a cheap alternative for producing paper (The Real Reason). He decided that hemp was too much of a competitor to his wood based paper company, so to avoid losing billions, he launched a campaign against hemp. Knowing that no one would ban such an amazing resource, Hearst fixated on the similarities between hemp and marijuana. He printed exaggerated articles on the dangers of the menace of marijuana in his newspapers, and it's relation to hemp (Why Is Hemp). As a result the U.S. government decided to ban all varieties of Cannabis Sativa, and lose an incredible resource.

There are countless environmental and economic benefits that come from cultivating hemp. First, hemp is capable of being grown without the use of pesticides, herbicides, and fungicides. All of these can kill the insects in surrounding areas, and can be harmful to the consumer or grower (Piotrowski). Hemp has a deep rooting system and after cultivation, the soil is left in ideal conditions. Cotton requires constant watering, and needs heavy irrigation, which drains the land of its natural water supply. Cotton also wears down the soil, forcing farmers to rely on chemical fertilizers (An Inconvenient Truth). Hemp is known to be a pioneer plant that can be used for land reclamation and restoring land polluted by heavy metals. (Piotrowski) Hemp can be used for anything from ethanol fuel to ice cream (General Hemp). "It's arguable the hemp plant has more uses than any other species under broad acre cultivation today," (Hemp Offers Hope). Even though hemp is still illegal on the federal level, there are many states working hard to legalize it. Hopefully, in the near future America will once again take advantage of one of the world's best resources.

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What Breed?

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later than most breeds (Cattle).

With so many breeds available, I have only covered the tip of the iceberg. There are many other options, and new breeds are waiting to be discovered. The animals I mentioned excel in their category, but there are so many other options out there. I hope my guide helped you make a decision about what breed is right for you and your farm.

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Honduran Diet.

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our own country would be like. While America is a country with amazing food choices, there are certainly members of our society who lack these choices due to a lack of income and opportunities. We would be curious to compare the diet of a poor Honduran to that of a poor Vermonter. What nutrients would be missing in both diets? Are there similar deficiencies?

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Pizza.

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Not only is it ridiculous to call pizza a vegetable because of how unhealthy it is, but there is also a bit of science to it. Botanically, tomatoes are fruits, and despite being nutritionally equivalent to a vegetable, they're not. On that point, 'vegetable' is a generally enigmatic term, as there are no criteria for what makes something a 'vegetable'. Using this logic, even if pizza was a good source of nutrients from tomatoes, it still wouldn't be classified as a vegetable.

The law congress passed in 2011 to declare pizza a vegetable, is still being enforced. This is promoting cheap, unhealthy eating in school children everywhere in America. If Congress could raise the lunch budget per child, schools could provide healthier meals to children everywhere so they could get the nutrition they deserve.

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Chocolate.

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Trade movement is going strong however, and Fair Trade chocolate products are becoming easier and easier to find in stores. Despite all the Fair Trade products, there are many problems with the production of chocolate and many children whose lives are being negatively impacted by the harsh conditions in which they are forced to work (Mallan).

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Food Stamps.
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than half of the recommended daily intake of calories. If we were to continue on this diet long term, as someone living on food stamps would, it would cause many ailments and diseases, such as vitamin or mineral deficiencies. Malnutrition would also be a problem due to the lack of meat, causing a lack of protein. One common source of vitamins and minerals is fruits and vegetable, which we did not receive enough of.

Conclusion

In conclusion, it is realistic to expect people to eat and buy healthy foods while on food stamps, however it is not enough to keep them well nourished and feeling healthy. Many citizens believe that people receiving food stamps have it easy and are merely living off the government. From our experience, we found that this common perspective is skewed. In fact, it is extremely challenging to lead such a lifestyle, between the complicated shopping experience and the limited diet. We perceived that, in general, the average food stamp is not enough to live a healthy and successful life, and the government should provide a greater amount of money towards food stamps.

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Food and Hunger in Our World

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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. They 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 increasingly important topics. We hope that these articles will inform you about food and hunger and encourage you to examine more deeply the choices you make about the food you purchase and the policies you support.

After you are done reading this newsletter, please consider passing it along to someone else who might enjoy it.

TSA Middle School Program

The Sharon Academy middle school's character is defined by three fundamental attributes: a safe and supportive learning environment, an integrated curriculum and high expectations for all students. From its founding days, The Sharon Academy has upheld the belief that with support, encouragement, and a sense of humor, students will take the risks inherent in meaningful learning and can meet high academic expectations.

A central philosophical underpinning of the middle school curriculum is that information is best learned when it is connected and re-enforced through relevant holistic themes. Thus the well-developed curriculum is highly integrated between classrooms and disciplines. 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 simultaneously. This newsletter is the result of the Food and Hunger unit.

For more information about The Sharon Academy go to www.sharonacademy.org

The Sharon Academy welcomes visitors. Please call Amber Wylie at 802-763-2500 to set up a visit to our middle school or our high school.