Interactive Website Promoting Reduced Animal Product Consumption

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Interactive Website Promoting Reduced Animal Product Consumption

An honors thesis presented to the
Department of Information Science,
University at Albany, State University of New York
in partial fulfillment of the requirements
for graduation from The Honors College

Audrey R. Caplan
Research Advisor: Dr. Jonathan Muckell
June, 2017
Abstract

A shift towards a plant-based diet has many benefits, including reducing the number of animals who are slaughtered for food. The goal of this project was to design and develop an interactive online tool to inform people’s dietary decisions, based on the direct effect that their diets have on farmed animals’ lives. Specifically, the website was developed to calculate the number of animals killed to sustain an individual website visitor’s diet, based on information provided by the user, and to provide personalized recommendations based on those calculations on how the individual can reduce their consumption of animal products.
Acknowledgements

I would like to thank Dr. Jonathan Muckell for his guidance and support on this project. I am grateful for the opportunity to have learned from his expertise. I would like to acknowledge the Informatics faculty and staff for the education they have provided me. To my family and friends, thank you for your support.

Finally, I would like to acknowledge my friends and heroes who advocate for farmed animal rights and liberation. They inspire me to make protecting these animals a priority in every area of my life. They have shown that individuals have the power to make a difference in the world. It is this sentiment that has guided the topic of this project.
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Overview of the Issue

A shift towards a plant-based diet, and away from dependence on animal products, has many benefits. Plant-based diets have a positive impact on the well-being of animals, the environment, and individual and public health. Below is a brief summary of several of the adverse affects of the animal agriculture industry.

The animal agriculture industry contributes to global warming and wildlife habitat loss (Goodland & Anhang, 2009). The industry involves systemic abuse of the animals that it exploits (Iovino, 2011). Animal products have been shown to contribute to heart disease, cancer, and other human diseases (Campbell & Campbell, 2006; Greger & Stone, 2015). The farm workers who work in the industry often suffer from post-traumatic stress disorder and physical injuries as a result of their jobs, and research has linked working in a factory farm with becoming a domestic abuser (McWilliams, 2012; The National Institute for Occupational Safety and Health, n.d.).

Project Objective

The goal of the website is to be an interactive informational and educational resource that provides website users with a tool for making conscientious food choices. It aims to encourage reduced animal product consumption and a transition towards a plant-based diet.

The site offers personalized suggestions for people who want to gradually reduce their consumption of animal products. Based on answers to a questionnaire, the website will return the estimated number of deaths by species caused by the user’s diet. The website will recommend changes to the user’s diet beginning with food choices that cause the most deaths.
Review of Similar Websites

Some existing websites offer calculators for vegans and vegetarians to see how many animals they have saved since changing their diets (The Vegan Web Designer, n.d.; Vegetarian Calculator by Month, n.d.). These websites focus on an all-or-nothing approach to plant-based eating.

Other websites, such as those of numerous non-profit animal advocacy organizations, provide information and guidance on transitioning to a plant-based diet, but lack an interactive calculator component (Compassion Over Killing, n.d.; Mercy for Animals, n.d.).

Website Development

The design of the website was created by customizing a template obtained from wrapbootstrap.com. Customization of the website’s appearance was developed through extensive editing of the HTML and CSS code. The website incorporates responsive web design, so that the layout of the web pages change in accordance with the size of the web browser window. The functionality of the website was developed using JavaScript and JQuery coding. The primary code editor used was Brackets. Kimodo Edit 8 was also used.

The landing page of the website shows the user a form [Figure 1]. The user has the option to click a button that will take them to the static, non-interactive pages of the website, without filling out the form. This button is fixed at the bottom of the page, so that when the user scrolls down or up, the button is always available.

The form asks the user to input the amounts of different kinds of animal products that they consume. When the user clicks “Show me my results,” the JavaScript code is run which
estimates how many animals their dietary choices cause to die [Figure 2]. Comments within the JavaScript describe how these calculations are reached [Figure 3].

Figure 1. The landing page of the website.

Figure 2. The lower half of the landing page of the website, including the “Show me my results” button. Note that that the “Skip this and go to general information” link is still fixed at the bottom of the screen, as it was in Figure 1.
In response to the form submit button being clicked, the webpage opens up to show the user’s statistics and personalized recommendations, based on the JavaScript calculations. A JavaScript function makes the page jump down to the start of their personalized information, but if the user scrolls back up, the form—with the numbers they entered—will still be visible. The skip button disappears and a navigation bar containing links to the website’s static pages appears at the top. The navigation bar is fixed at the top of the screen so that it is always visible no matter where the user scrolls to on the page.

Figure 3. Sample of the JavaScript code that calculates how many animals die from the user’s dietary choices. Comments within the code provide the numbers used for the calculations, so that these numbers can easily be changed at a later date if new information is received.

```javascript
// ANIMALS KILLED FUNCTIONS

// chickensKilledEggs

function chickensKilledEggs() {
    "use strict";
    var eggsWeek = document.getElementById("egg").value; // Get number of eggs user consumes per week
    var weeksMonth = 4.3; // Weeks per month
    var eggsChicken = 500; // Number of eggs that a chicken produces in its lifetime
    var deathsMonth = eggsWeek * weeksMonth / eggsChicken;
    deathsMonth = deathsMonth.toFixed(2);
    return deathsMonth;
}

// chickensKilledMeat

function chickensKilledMeat() {
    "use strict";
    var meatWeek = document.getElementById("chicken").value; // Ounces of chicken meat user consumes per week
    var weeksMonth = 4.3; // Weeks per month
    var toCarcass = 2.22; // Converting weight of cooked meat to weight of carcass
    var toLive = 1.41; // Converting weight of carcass to weight of live chicken
    var mortalityRatio = 1.08; // Chickens that died in system before slaughter (not used for meat)
    var toPounds = 18; // Converting from pounds to ounces
    var avgWeight = 6.24; // Average weight of chicken
    var deathsMonth = (meatWeek * weeksMonth * toCarcass * toLive * mortalityRatio) / toPounds / avgWeight;
    deathsMonth = deathsMonth.toFixed(2);
    return deathsMonth;
}
```
The statistics section [Figure 4] shows users how many animals they cause to die each year as a result of their dietary choices. Below this is a section with recommendations [Figure 5, Figure 6, Figure 7, Figure 8] for how the user can most effectively begin cutting back on animal products. These recommendations are based on the user’s answers to the form. If the JavaScript code calculated that the user causes more chickens and fish to die than any other animal that they consume the meat or products of, then recommendations will be shown for alternatives to chicken and fish products. Depending on which animal products alternatives are being displayed for, these recommendations may include store-bought alternatives, recipes, and meals at chain restaurants. Hyperlinks are provided where appropriate.
Figure 5. What the user sees as she scrolls down the page, going from the personalized statistics section to the personalized recommendations section.

Figure 6. The personalized recommendations section of the webpage. The recommendations shown are those which appear to any user who self-reports that they consume sea animals such as fish and shellfish. Because fish are killed in the highest numbers (partially because of their generally small size), anyone who consumes fish at all is likely to kill more fish than any other animal they eat. Because of this, it is important to encourage people to seek alternatives and recommend that they begin their transition to a plant-based diet by replacing meals containing fish with plant-based alternatives.
Figure 7. Another screenshot of the personalized recommendations section of the page. This section shows recommendations for alternatives to chicken meat and egg products. Like sea animals, chickens are consumed in extremely large numbers, due partially to their relatively small size. Most omnivores will make the biggest impact on reducing animal suffering by removing chicken, eggs, and sea animals from their diets first.

<table>
<thead>
<tr>
<th>Nutrition</th>
<th>Resources</th>
<th>Tips</th>
<th>How We Did Our Calculations</th>
<th>Get Personalized Tips</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chicken and Eggs</strong></td>
<td></td>
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<tr>
<td>Our calculations found that you could save a lot of animals by cutting back on your consumption of chicken and eggs. Try some of the following alternatives.</td>
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<tr>
<td><strong>Products</strong></td>
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<tr>
<td>- Gardein makes many great vegan chicken products:</td>
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<tr>
<td>- Mandarin crispy chick'n</td>
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<tr>
<td>- 7-grain crispy tenders</td>
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<tr>
<td>- Chick'n scallopini</td>
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<tr>
<td>- Teriyaki chick'n strips</td>
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<tr>
<td>- Crispy chick'n patty</td>
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<tr>
<td>- Chipotle lime fingers</td>
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<tr>
<td>- Chick'n sliders</td>
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<tr>
<td>- Barbecue chick'n wings</td>
<td></td>
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<tr>
<td>- VeganEgg (for scrambling and baking)</td>
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<tr>
<td>- Egg Replacer (for baking)</td>
<td></td>
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<tr>
<td>- BeyondMeat's vegan chicken strips are so similar to chicken meat that anchors on the Today Show couldn't tell the difference during a taste-test. Here are the available flavors:</td>
<td></td>
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<tr>
<td>- Southwest-style strips</td>
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<tr>
<td>- Grilled strips</td>
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<tr>
<td>- Lightly seasoned strips</td>
<td></td>
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<tr>
<td>- Bota, a subsidiary of Kraft, makes some vegan chick'n patties and vegan meatless chick'n nuggets. Check the packaging to make sure it's vegan (some of Bota's products are only vegetarian).</td>
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<tr>
<td>- Amy's No Chicken Noodle Soup</td>
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<tr>
<td>- If you like ramen, try Nissin Top Ramen's &quot;accidentally&quot; vegan flavors: Oriental and Chili.</td>
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<tr>
<td><strong>Tips for Eating Out</strong></td>
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<tr>
<td>- If you like Chipotle burritos with chicken, try Chipotle's vegan sofritas on your burrito. If you're not a fan of those, leave off the meat.</td>
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</tr>
</tbody>
</table>

Figure 8. The second half of the recommendations for how to replace chicken products with plant-based alternatives, continued from Figure 7.
Below the recommendations section comes a section with general tips [Figure 9]. This section corresponds to the Tips page on the website, but is displayed also on this screen in case the user does not explore the rest of the website. These are tips that apply generally to people cutting back on animal products in their diets, regardless of the user’s answers to the questions in the form.

A nutrition section, which reflects the Nutrition page of the site, gives resources for finding nutrition information [Figure 10]. This section includes a Javascript function where, when the name of a dietary organization is clicked, information on its stance on plant-based diets will be displayed [Figure 11]. If the name is clicked again, those statements will be hidden again.
As with any diet, maintaining a healthy plant-based diet requires being aware of the nutritional content of your food, and knowing when to supplement your diet with vitamins.

Many respected nutritional organizations have confirmed that good health can be maintained while following a plant-based diet. Below is a non-exhaustive list of such organizations:

Click organization name to show more information.

- American Dietetic Association
- British Dietetic Association
- Dietitians of Canada

There are many resources devoted to giving information on how to eat a healthy plant-based diet. Below are a few links to help you get started.

- Becoming Vegan (book)
- How Not to Die (book)
- NutritionFacts.org
- Vegan for Her (book)
- Vegan for Life (book)
- VeganHealth.org
- The Vegan Society
- Vegetarian Resource Group

**Figure 10.** The nutrition section of the webpage.

As with any diet, maintaining a healthy plant-based diet requires being aware of the nutritional content of your food, and knowing when to supplement your diet with vitamins.

Many respected nutritional organizations have confirmed that good health can be maintained while following a plant-based diet. Below is a non-exhaustive list of such organizations:

Click organization name to show more information.

- American Dietetic Association
  
  "It is the position of the American Dietetic Association that appropriately planned vegetarian diets, including total vegetarian or vegan diets, are healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases. Well-planned vegetarian diets are appropriate for individuals during all stages of the life cycle, including pregnancy, lactation, infancy, childhood, and adolescence, and for athletes."

  Position of the American Dietetic Association: vegetarian diets.

- British Dietetic Association
- Dietitians of Canada

There are many resources devoted to giving information on how to eat a healthy plant-based diet. Below are a few links to help you get started.

- Becoming Vegan (book)
- How Not to Die (book)
- NutritionFacts.org
- Vegan for Her (book)
- Vegan for Life (book)
- VeganHealth.org

**Figure 11.** Note that the “American Dietetic Association” title has been clicked, and that information on that organization’s position on plant-based diets is now visible. The names of each of the three organizations shown are connected to JavaScript code that makes these sections open and collapse when clicked. (Red outline added for emphasis—does not appear on site.)
Finally, there is a section with more resources. This section also has a corresponding static webpage, linked in the navigation bar at the top. Like the nutrition section, this section has code that will show or hide a list of a particular category of resources—for example, books—when the name of the section is clicked. The list will be hidden again if the link is clicked again.

Figure 12. The More Resources section of the webpage. Initially, the lists corresponding to each category is hidden. Each appears as the title of the category is clicked, as shown with the Books category below in Figure 13.
In all, the website has five pages, which are linked in the top navigation bar. In addition to Nutrition, Resources, and Tips, the website has a page that describes how the calculations are done. The final link takes the user back to the start form, where they can return to get personalized recommendations if they initially skipped it in order to explore the static pages of the site. [Figures 14 – 21.]

**Figure 14.** The General Tips page. Below: **Figure 15.** The Nutrition page.

---

**GENERAL TIPS**

- When replacing animal products in your diet, always replace them with plant-based products. If you switch to eating other animal products, you may be doing more harm than good.
- As you change your diet, make sure you are getting enough vitamin B12. Many vegans choose to supplement B12. See the links in our nutrition section for more information.
- It's more important to make a positive impact than to be "perfect." Consider making some exceptions to your new lifestyle choice if you find yourself becoming discouraged. For example, you could eat animal products only during holidays with the family or only when traveling.
- Become connected with positive and friendly plant-based, vegan, and animal advocacy communities–online and/or offline. They can offer support and help you stay motivated.
- If you don't like the first plant-based alternative you try, try a different one. There are many alternatives out there and there is a list of variety in plant-based food options.

---

**NUTRITION**

As with any diet, maintaining a healthy plant-based diet requires being aware of the nutritional content of your food, and knowing when to supplement your diet with vitamins. Many respected nutritional organizations have confirmed that good health can be maintained while following a plant-based diet. Below is a non-exhaustive list of such organizations:

- **American Dietetic Association**
  "It is the position of the American Dietetic Association that appropriately planned vegetarian diets, including total vegetarian or vegan diets, are healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases. Well-planned vegetarian diets are appropriate for individuals during all stages of the life cycle, including pregnancy, lactation, infancy, childhood, and adolescence, and for athletes."
  Position of the American Dietetic Association: vegetarian diets.

- **British Dietetic Association**
  "Well-planned plant-based, vegan-friendly diets can be devised to support healthy living at every age and life-stage."
  Memorandum of Understanding between The Vegan Society and the British Dietetic Association.

  "Well-planned vegetarian diets are appropriate for all stages of life and have many benefits."
**Figure 16.** The lower half of the Nutrition page. (Continued from Figure 17.)

**Figure 17.** The Resources page.
**Figure 18.** The Resources page, continued from Figure 17.

<table>
<thead>
<tr>
<th>Nutrition</th>
<th>Resources</th>
<th>Tips</th>
<th>How We Did Our Calculations</th>
<th>Get Personalized Tips</th>
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<tbody>
<tr>
<td><strong>Farm Sanctuaries</strong></td>
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<tr>
<td>Catskill Animal Sanctuary</td>
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<tr>
<td>Farm Sanctuary</td>
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<td>Woodstock Farm Animal Sanctuary</td>
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<tr>
<td><strong>Films</strong></td>
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<td>Cowspiracy</td>
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<td>Earthlings</td>
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<tr>
<td>Farm to Fridge</td>
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<tr>
<td><strong>Food Products</strong></td>
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<tr>
<td>Beyond Meat</td>
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<tr>
<td>Daiya (cheese products)</td>
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<tr>
<td>Gardein (meats)</td>
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<tr>
<td>Field Roast (meats and cheeses)</td>
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<tr>
<td>Hampton Creek (&quot;Just Mayo&quot;, dressing, cookie dough, cookies)</td>
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<tr>
<td>Miyoko's Kitchen (cheese products)</td>
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<tr>
<td>So Delicious (non-dairy milk products)</td>
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<td>Tofurkey (meats)</td>
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<td>Tofuzzi (non-dairy milk products)</td>
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<tr>
<td>Treeline Cheese</td>
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<tr>
<td><strong>Making the Transition</strong></td>
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<tr>
<td>ChooseVeg.com</td>
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<tr>
<td>TryVeg.com</td>
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<tr>
<td>Veganuary</td>
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<tr>
<td><strong>Nutrition and Fitness</strong></td>
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<tr>
<td>NutritionFacts.org</td>
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<td>PlantBuilt</td>
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<tr>
<td>Vegan Bodybuilding &amp; Fitness</td>
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<tr>
<td>VeganHealth.org</td>
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<tr>
<td><strong>Other</strong></td>
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<tr>
<td>Animal Slaughter Counter</td>
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<td>Animal Visuals</td>
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<tr>
<td>Esther the Wonder Pig</td>
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<tr>
<td>VegNews</td>
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<tr>
<td>Will Travel for Vegan Food</td>
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</tbody>
</table>

**Figure 19.** The Resources page, continued from Figures 17 and 18.
How We Did Our Calculations

Chickens (eggs): To calculate the number of chickens killed per month by the consumption of a certain number of eggs, we did the following calculation: the number of eggs a person eats in a week, times the number of weeks per month, divided by the average number of eggs a chicken produces in her lifetime (500). Once a hen can no longer lay eggs, the industry will kill her. Therefore, for every 500 eggs a person eats (whether hardboiled, fried, or mixed into cake batter), they are personally and solely responsible for the death of one hen.

Chickens (meat): Our formula for calculating the number of chickens a person kills in a month by eating the meat of chickens is as follows: the ounces of chicken a person eats per week, times the number of weeks per month, times the weight that a chicken’s carcass loses when it is cooked, times the difference in weight between a chicken carcass to the live whole chicken, times the percentage of chickens who die before slaughter (from injuries, illness, suffering, etc.—the buyer is responsible for a certain percentage of these deaths, since these chickens are lost in the process of the industry although they do not go to slaughter), divided by the conversion factor of pounds to ounces (the weights in the formula were in pounds; we asked for ounces of meat), divided by the average weight of a chicken.

Pigs: Here is the formula we use to calculate the number of pigs a person kills per year by consuming pork: the number of ounces of pork a person consumes in a month, times the number of months in a year, times the weight difference of cooked meat to raw meat, times the number of pigs that die before slaughter (from injuries, illness, suffering, etc.—the buyer is responsible for a certain percentage of these deaths, since these pigs are lost in the process of the industry although they do not go to slaughter), divided by the number of ounces in a pound (the weights in the formula were in pounds; we asked for ounces of meat), divided by the conversion factor from meat to the carcass times the conversion factor of the carcass to package weight.

Cows (dairy): Here is our formula for calculating the deaths of cows per year caused by the reported consumption of dairy products in ounces per week: amount of dairy consumed in a week by the user, times the number of weeks in the year, times the average amount of milk that it takes to create one ounce of dairy product (because most users will be combining the amount of milk they drink, cream they drink, cheese and yogurt they eat, etc.), divided by the number of ounces in a gallon, divided by the amount of milk produced by a cow in her lifetime. The amount of milk produced by a cow in her lifetime was calculated dividing the number of gallons she produces in a year by the number of months in a year, and multiplying that number by the total number of months the average dairy cow produces milk before she is no longer able to produce and she is killed.

Cows (meat): The following formula was used to find the number of cows that a person is responsible for killing per year based on their average monthly consumption of beef in ounces: the amount of beef consumed by the user, times the number of weeks in a year, times the difference in weight between cooked meat and raw meat, times the amount of usable raw meat that exists on a live cow, times the number of cows that die before slaughter (from injuries, illness, suffering, etc.—the buyer is responsible for a certain percentage of these deaths, since these cows are lost in the process of the industry although they do not go to slaughter), divided by the number of ounces in a pound.

Figure 20. The page that explains how the calculations on how many animals are killed by the user’s diet are calculated.

Figure 21. The “How We Did Our Calculations” page, continued from Figure 20.
**Cows (meat):** The following formula was used to find the number of cows that a person is responsible for killing per year based on their average monthly consumption of beef in ounces: the amount of beef consumed by the user, times the number of weeks in a year, times the difference in weight between cooked meat and raw meat, times the amount of usable raw meat that exists on a live cow, times the number of cows that die before slaughter (from injuries, illness, suffering, etc.—the buyer is responsible for a certain percentage of these deaths, since these cows are lost in the process of the industry although they do not go to slaughter), divided by the number of ounces in a pound (the weights in the formula were in pounds; we asked for ounces of meat), divided by the average weight of a cow raised for beef.

**Turkeys:** The formula used to find the number of turkeys a person kills in a year: the number of ounces of turkey meat the person consumes per year, divided by the ounces of meat per pound of cooked turkey, times the difference in weight between a cooked turkey and a turkey’s carcass, divided by the number of turkeys that die before slaughter (from injuries, illness, suffering, etc.—the buyer is responsible for a certain percentage of these deaths, since these turkeys are lost in the process of the industry although they do not go to slaughter), divided by the average weight of a live turkey.

**Sea Animals:** For calculating the number of sea animals - fish, shellfish, and ether - that a single person causes to die in a year, our form asks a yes or no question about whether the user eats sea animals. If the answer is yes, then the numbers given are the number of sea animals the average American fish-eater causes to die in a year. Otherwise, the numbers were set at zero. The average number of fish consumed directly is 12. The average number of shellfish is 137. In addition to fish and shellfish directly eaten, a large number of fish are killed to feed the fish we eat. The average number of these fish killed by a given consumer in a year is between 144 and 293. Also, the process of catching fish and shellfish for consumption results in a large number of sea animals being caught accidentally. Many of these animals die as a result of the process. The average number of animals that die because of this, annually, per consumer, is 46 - 104.


**Figure 22.** The “How We Did Our Calculations” page, continued from Figures 20 and 21.
References


