Adventures in Vegetarianism

A Joint Honor's Thesis By:
Rebecca J. Cavnar
Amelia A. Horton

Thesis Advisor: Dr. Jarmila Popovicova

March 31, 2005

Expected Date of Graduation: May 7, 2005
Abstract

The purpose of our experiment is to determine if a vegetarian lifestyle is practical for college students. Over the course of one semester we kept a vegetarian diet and recorded our thoughts and feelings about the process. We also looked into environmental reasons to be a vegetarian as well as the nutritional concerns and benefits. We found that vegetarianism has a less negative impact on the environment than an omnivorous diet. The nutritional content of vegetarian and meat-eating diets does not differ greatly and, contrary to popular belief, vegetarians consume adequate amounts of essential nutrients. The final component of our project is a collection of vegetarian recipes which we prepared throughout the semester. We concluded that vegetarianism is absolutely feasible for college students.
Acknowledgements

We would like to thank Dr. Popovicova for her generous gift of her time and energy in advising us. Her personal experience with vegetarianism and her background in natural resources were invaluable in writing our thesis.

We would also like to thank Dr. Stedman for her initial encouragement in this project and her advice on great places to shop for vegetarian food.

Finally, we would like to recognize our boyfriends Nate Terwilliger and Carl Schneider for their support and patience with our new diet.
Table of Contents

Introduction ..................................................................................... 5

Chapter One: Review of Literature
  a. Nutrition (by Amelia Horton) ................................................. 7
  b. Environment (by Rebecca Cavnar) ......................................... 21

Chapter Two: Our Experiment ............................................................. 33

Chapter Three: Personal Reflections
  a. Personal Reflection (by Rebecca Cavnar) .............................. 34
  b. Personal Reflection (by Amelia Horton) .............................. 36

Conclusion .................................................................................... 37

Appendix A: Journals ....................................................................... 38

Appendix B: Recipes ........................................................................ 52
Introduction

The original idea for the project grew out of a curiosity about the actual implementation of a vegetarian lifestyle and prior personal interest in trying and possibly keeping a plant-based diet as a normal part of everyday life. The two of us knew that we would be living together off-campus during the time of this thesis and that trying out vegetarianism would be more feasible. We were basically curious about how vegetarianism would work for college students such as ourselves who were no longer living in the dormitories.

Several basic issues drew us to vegetarianism, the main two being health issues and environmental concerns. Many consider changing their diet based on high cholesterol or a simple concern about eating too many high-fat foods. Others eliminate meat in the hope that they will lose weight or cut down on the gain of adipose fat.

Aside from nutritive concerns, there is a wealth of environmental and moral concerns such as the fact that meat production contributes largely to the problems of land and water wastage and soil erosion. The majority of animals raised for meat consumption by humans also live in horrible and unsanitary conditions unsuitable for both the health of the animal and the human who will eventually consume the end product. These are all basic reasons for a person to consider the alternative of a plant-food based diet.

Our main preconceptions were both positive and negative. We felt that vegetarians are healthier people in general and eat more whole-grain foods and obtain more vitamins and nutrients through their diet, but we also worried about getting an adequate amount of protein daily. We also feared that groceries would be more expensive and that we would have to resort to strange food choices to get adequate nutritional balance. Neither of us are exactly gourmet cooks and we were also concerned that we would not get enough variation in our diet and
therefore miss out nutritionally. We did feel positive about eliminating meat from our diets because we know that vegetarianism is better for the environment on such a large scale.

We decided to focus on the areas of nutritional and environmental concerns and benefits because we were each specifically interested in one of those areas. We both felt that they are major topics of interest to anyone considering becoming a vegetarian. Expanding our knowledge and sharing what we have learned with each other has helped us make clearer choices with the food we eat. We can now help others who are confused about the facts of a vegetarian diet and the moral and ethical arguments which accompany it.
Chapter One: Review of Literature

Review of Nutritional Literature

By Amelia Horton

Introduction

The nutritional information on vegetarianism is often confusing and conflicted. Popular literature is not always reliable and it can be hard to extract simple information from scientific articles. Americans are often less concerned with nutrition in general than they should be, as evidenced by our rising epidemic of obesity. This all contributes to the wealth of misinformation and disinterest in the facts of vegetarian nutrition.

In this particular section, I will try to enlighten others on what I have learned in my own quest for viable information on the scientific facts. Having many questions of my own, I sought to study the few that seemed to be broadly misconstrued and along the way discovered another major issue of vitamin deficiency which is overlooked in the world of popular literature.

Protein is the issue which first came to everyone’s lips when I discussed the thesis project with them. I had to address the issue of vegetarianism as related with adequate protein intake because it is such a widely known issue and also one of the most incorrectly assessed. Finally, I researched dietary fiber because high fiber intake is an underrated benefit of the vegetarian diet. Iron deficiency is another of the larger concerns associated with vegetarianism, especially for women, and vitamin B12 deficiency is a lesser recognized but equally important problem diet.

My research has brought me to the conclusion that the problems and benefits of vegetarianism are not accurately known by the average person. The issue of protein is grossly overemphasized while other lesser-known and more problematic deficiencies go largely unnoticed. I will attempt to provide a more accurate picture through more commonly understood
information about recommended dietary allowances and deficiency problems as well as scientifically conducted studies. The next section will focus specifically on protein.

**Protein**

The simple lack of recent articles concerning the broad issue of vegetarianism and protein struck me as strange when I first began researching. I had thought that it would be my most easily-researchable topic, with a wealth of information readily available. I determined that the concern that vegetarians will not get enough protein is simply no longer thought of in the scientific world. They have known for years that it is not an issue. In fact, Americans who eat meat get much more protein daily than they need, up to 2 ½ times the recommended daily allowance (RDA). Eliminating meats from the diet can even help bring the protein intake down to a normal level. Popular literature and general knowledge has yet to catch up with this scientific ground. The studies I reviewed deal with specific issues of protein such as the impact of vegetarianism on athletes. My research on protein deals with the better quality of soybean protein as compared to meat and the specific issues of protein which might confront a vegetarian today.

The basic information which I was able to find primarily indicates that vegetarians have no problem getting enough protein, though vegans may have more difficulty (Farley). The chart below indicates the protein contained in single-serving amounts of specific foods, some meat, some dairy, and some vegan. It shows that obtaining enough protein as an ovo-lacto-vegetarian, someone who eats dairy products and eggs, should be relatively carefree.
Figure 1. Protein content (in grams) of various meat and non-meat sources.

The recommended daily allowance for protein in the United States is 63 grams for men and 50 grams for females, but it is aimed higher than actual need for good measure (www.dietitian.com/protein.html). This chart indicates that vegetarians should have no problem obtaining protein from non-meat foods. Some sources, however, say that vegans also get enough protein despite the lack of milk or eggs in their diet (Tufts University Letter). The majority of the sources did state that vegans should monitor their protein intake and make sure that it is adequate for their daily needs. As the chart shows, most beans do not have nearly as much protein content per serving as dairy products.

Another interesting misconception about the plant-based diet, perpetuated by the book *Diet for a Small Planet* in the 1980s, is that in order to get all of the essential amino acids from
plant foods you must eat plant foods containing those acids all at the same meal. This has been proven in later years to be simply untrue. The diet is adequate when the food is varied day by day and since the amino acids are mixed in the body's protein pool, it is fine to consume them at separate meals (Farley). The Tufts University Health and Nutrition Letter also states that it is simply a myth that you must eat certain foods at the same time to make a "complete" protein.

David C. Nieman's study on physical fitness and the vegetarian diet only furthers the proof that vegetarians can function adequately without meat and with a varied plant food intake. He came to the conclusion through his study of both vegetarian and non-vegetarian athletes and their athletic capacity that a plant-based diet does not have a detrimental effect on ability (Nieman 570S). While the study also states that vegetarian athletes do not improve their skills through their choice of diet either, it is a scientific resource that can provide comfort to an athlete worried about the impact of his or her diet on athletic capacity.

Figure 2. The amount of protein in a ½ cup serving size of various legumes.

I turn now to take a closer look at the most famous protein-providing element of a vegetarian or vegan diet: the soybean. While they have the bad reputation of being more fatty than any other bean, they also contain much more protein than other beans and less fat for the amount of protein they contain than meat does.

Legumes in general are important in diets around the world but undervalued in Western culture. All have a notably substantial protein content per serving and most are relatively low in fat as well (Messina 440S). Soy, however, is the only plant source that contains complete protein. All other beans contain only some of the essential amino acids required to build a complete protein.

Soybeans also offer high fiber and vitamin B6 content (Adams 48). The combination of all these positive factors indicates that soybeans are in fact an excellent source of protein as well as low in fat and cholesterol. Both vegetarians and vegans have soy as a resource on which to draw to meet their protein intake requirements.

In light of my research on protein, I have concluded that the common myth that vegetarians do not get enough of it is outdated in the scientific world and should be outdated in popular knowledge as well. Beans are also underrated in Western culture and looked upon as a boring and dull food, when in reality they are highly nutritious and can be used in a variety of dishes.

A second major topic of concern to those who are vegetarian or considering it is the possibility of certain vitamin deficiencies. Iron deficiency is the one which is most focused on at the moment, but in my research I discovered that vitamin B12 deficiency is also of concern to those in the scientific community. Unfortunately, the facts about vegetarianism and vitamin deficiency are not always readily available to the average person. I will shed light on these two
particular deficiencies and discuss why these vitamins are important and what a vegetarian can do to help his or her sufficient nutrient intake.

**Iron**

A lack of adequate iron consumption is most closely associated with a common form of anemia. Deficiency can also cause extreme fatigue, weakness, lightheadedness, brittle nails, susceptibility to infection, and restless legs syndrome ("Iron deficiency anemia"). The latter condition is that when your legs are constantly tingling and there is a pins-and-needles feeling, also called "growing pains". The United States RDA for iron is 18 milligrams per day, though pregnant women should attempt to get more.

**Figure 3.** Iron content of selected foods.

![Iron content of selected foods](image)

Unfortunately, most plant foods are not very high in iron, as shown here. Even tofu, a staple of the vegetarian diet, has only 7 milligrams in one-half cup. This is less than half of the daily requirement.

What these indicators of milligram content do not take into consideration is the success of iron absorption by the body. There are two kinds of nutritive iron, heme and non-heme. Heme iron is found in animal products and non-heme iron is found in plant products. While heme iron is usually absorbed at anywhere from 15-35% of intake, non-heme iron absorption is much lower, at 2-20% of intake (Ball and Bartlett 353). The fact that all iron must come from the diet makes this fact even more troubling. Not only are plant foods much lower in iron than red meats, a person must consume much more of them to absorb the same amount of iron.

The fact that non-heme iron is inhibited by several kinds of food and drink as well is no help. Phytic acid, contained in foods such as legumes, nuts, and whole grains, contributes to inhibition of non-heme iron. Additional culprits are soy protein, eggs, and the tannins contained in tea and coffee (Hunt 634S). The fact that it is hard to track just how useful iron supplements are in overall intake, though it is known to be at least somewhat beneficial, adds to the headache.

Considering all these facts from various studies, it seems that vegetarians should be at a huge disadvantage to meat eaters as far as iron status is concerned. Surprisingly, this is not the case. Vegetarians do have low iron, particularly women. The interesting factor is that the iron status of omnivorous women is not dissimilar. Women in the studies conducted tended to have the same average iron status regardless of whether they ate red meat or not (Ball and Bartlett 357).

Janet R. Hunt indicates in her study that iron deficiency anemia does not seem to be higher in vegetarians, though they should increase iron intake to compensate for lower
bioavailability (638S). Yet another research team described the iron problem as a female problem, not a vegetarian or vegan problem (Larsson and Johansson 105). I was not expecting this when I began research on the topic, but as a woman who was at the time a vegetarian, this information alerted me to the fact that I should monitor my iron intake.

**Vitamin B12**

Vitamin B12 deficiency is a less popularly advertised side effect of a vegetarian diet and more directly related to the lack of meat consumption. Though not as well considered, this deficiency is not to be taken lightly. Low B12 levels can cause another type of anemia because B12 helps in the making of body cells, including red blood cells. It also can cause serious nerve problems if the deficiency is too great. Symptoms of B12 deficiency are fatigue, loss of breath, faintness and paleness ("B12 Deficiency").

The RDA for vitamin B12 is 2400 milligrams per day. There is barely any vitamin B12 in plant foods, which seems to indicate that without meat and dairy vegans are guaranteed to have a deficiency. A B12 supplement is definitely recommended for vegans and also for vegetarians if they do not get much B12 from their diets (Murphy and Allen 3933S-3934S). There is more and more information which indicates that even ovo-lacto-vegetarians do not get adequate vitamin B12 from their diets. Part of the frustration with treating this deficiency is the lack of an accurate measure of the amount which can be absorbed from a supplement (Antony 4-5).
General studies on the levels of most major nutrients in relation to vegetarian diets also point out the low status of B12 and the necessity of monitoring intake (Janelle and Barr 185-186). Many of the vegetarians and vegans in the studies which I read did not even take vitamin B12 supplements, an additional concern. The lack of an education initiative to protect and inform vegetarians about vitamin B12 deficiency could have a long-term detrimental effect on hundreds of people (Antony 5).

My general reaction to the problem of deficiency of both of these vitamins has been one of disbelief and indignation at the lack of available general information as far as absorption is
concerned. I myself have always thought when reading the amount of each vitamin contained in my multivitamin supplement that I am actually getting that amount in full.

A widespread and informative campaign on the actual absorption rate of vitamins is necessary. Several others whom I know besides myself take their multivitamin daily and think that they are set as far as mineral and vitamin intake is concerned. This is far from being true and perhaps if people were better informed, they would pay more attention to what their status is actually like for iron and B12. The problem of vitamin B12 deficiency for vegetarians is also poorly advertised and should be basic knowledge for anyone considering a switch to the diet.

**Dietary Fiber**

On a more positive note, there are also quite beneficial aspects of the vegetarian diet. There are two types of dietary fiber, water soluble and insoluble. Insoluble fiber prevents constipation and cardiovascular disease and helps to reduce cancer risks. It is found in whole grains, fruits, vegetables, rice, and legumes. Soluble fiber lowers cholesterol and improves glucose tolerance. It is found in oatmeal, dried beans, and some fruits and vegetables as well.

Both kinds are beneficial, and the combined RDA is 20 to 35 grams per day ("Dietary Fiber").

Generally, studies indicate that vegetarians eat more dietary fiber than omnivores. This is partly due to their preference for whole grain foods and cereals and their high consumption of legumes (Davies et al. 143). It is not that it is not possible for meat-eaters to obtain high fiber, but it is more likely that a vegetarian will because of the focus on more varied and fiber-rich foods.

Body mass index (BMI), a measure of the percentage of the body weight which is fat, is also directly related to fiber intake. The higher the BMI, the more fat a person is carrying and the worse his or her health is likely to be. Studies have found that meat eaters tend to eat
considerably more animal fat and less fiber than vegetarians, thus contributing to a higher BMI (Appleby et al. 459). A lower BMI can be attributed to diet differences and the intake of fiber and animal fat is directly related to the BMI of an individual (Appleby et al. 460). Eating more fiber can help keep the BMI down and keep a vegetarian healthier in addition to the already immense benefit of low animal fat intake.

Fiber is not necessarily inherently higher in a vegetarian diet, but vegetarians tend to be very concerned with health and therefore eat more high-fiber foods. Fiber is an underrated element of American diets, especially the diets of children, and is a benefit to anyone.

**Conclusions on Vegetarianism and Nutrition**

After assessing everything that I have learned through my research on these topics, I feel grateful to have had the opportunity to learn more about my own nutrition whether vegetarian or non-vegetarian. I definitely understand the problems and benefits associated with these four main areas in more entirety than I ever would have otherwise. I am sure that I would never have realized the true rate of the absorption of vitamins into the body from supplements as well as other foods had I not done this research.

I am very happy to be able to pass what I have learned on to my readers, but at the same time I wonder how many other diet-related issues there are of which the average individual is simply unaware. Then again, it is not always that the information is not available but that people in the United States do not care about their bad diets or do not want to be faced with the facts. There is common knowledge that many brush aside, relying on easier trends such as the Atkins diet rather than admitting that less calorie intake and more exercise is usually the surest way to go.
It seems to me that despite some of the vitamin deficiencies which can be an issue if not monitored well, vegetarianism is worth a definite consideration by anyone who is concerned with health and fitness. The simple reduction of fat intake along with the consumption of more grains, vegetables and fruits can be beneficial, as long as the vegetarian individual is making a conscious effort and not simply cutting meat out of a diet of sweets, sodas and enriched foods. A vegetarian diet is a commitment which a person makes to him or herself and is not to be taken lightly, but appreciated.


Larsson, Christel L. and Gunnar K. Johansson. “Dietary intake and nutritional status of


Review of Environmental Literature
By Rebecca Cavnar

Introduction

For years I have heard about the environmentally detrimental effects of meat-eating. My vegetarian friends have alluded to them; I am fairly certain I have encountered literature about them, but I was not yet ready to personally delve into those mysteries. When I finally did make the plunge into vegetarianism, I knew that it was time at last. I needed to find out for myself what kind of a difference abstaining from meat could make in the world. I have always had a vague attitude of "caring for the environment." I recycle—as much as I can, anyway. I get sad when I hear about forests being cut down to make way for expressways or about the rate at which species are becoming extinct. I even cried when I was five years old and my dad needed to cut down a big tree in our back yard. But the truth is I am a half-hearted environmentalist. I do care, or at least I want to, but the problems with the way our country (and our world) treats Mother Nature are so very vast that I get overwhelmed before I even get started. This project was my big chance to force myself to open my eyes and take a look at my own lifestyle, and ask whether eating meat actually can hurt the environment. As soon as I started reading about this question, I realized that the number of topics to be studied are numerous and extensive.

Acknowledging the impossibility of examining all of these topics, I narrowed my list down to how a vegetarian diet relates to three items: water resources, land resources and water pollution. I also tried to generally apply the information I found to the United States of America, so that I could more readily see its effects in my life.
**Water Resources**

Our world population is growing more rapidly than ever, creating a greater demand for freshwater. As a result, our water resources are being stretched thin, which leads to a shortage of food sources for many parts of the world, since water is necessary in the production of both crops and livestock. If we take into account all of the freshwater withdrawals made every day, including those used for irrigation, Americans use on average 5500 L of water per person per day compared to the rest of the world's 1970 L (Pimentel et al. 911). Although water is used wastefully in almost every part of our culture, one particular area of waste relates to Americans' expectation of cheap and plentiful meat. The hamburger is just as American as apple pie, and requires a great deal more water in its creation. Without question, livestock production uses significantly more water than crop production because of indirect water consumption through the crops necessary to sustain livestock.

Before delving into some specific examples of water waste in food production, the question should be asked: why does our level of water use matter? Many people believe that our world has an endless supply of freshwater, and that the amount used by humanity does not affect the amount of freshwater left available to us. On the contrary, Postel calculates that the minimum global total of water depletion annually equals 160 billion cubic meters (35). The United States plays a significant role in creating such a huge deficit. During the mid-1990s, the U.S. ranked third in the world for water deficits (see Figure 5). Approximately 10 percent or 180 million tons of our grain produced world wide comes from this water loss. Since the global population will only increase—and increase drastically—in the years to come, how can we continue to feed ourselves if we are already producing food through creating a deficit? This strain on our water supply will continue to grow, particularly in arid regions (Postel 35).
Figure 5. Water deficits in key countries and regions, mid-1990s.

One of many areas where water use could be cut back involves the disproportionate amount of water necessary for livestock production. Before examining differences between livestock and crop production in water consumption, first we should take note of the excess water use that occurs within crop production itself. One cause of this waste comes from our irrigation methods for growing crops. As technology has developed, in the southwest region of the United States farmers have turned to groundwater as the best source of water for irrigation. If the rate with which they were taking water from the ground were the same as the rate that the water is replenished, this system would work perfectly. Unfortunately, more often than not this equilibrium does not exist. The best example of the problem is the Ogallala aquifer in the western region of the United States. Since rainfall in that part of the country is minimal, the Ogallala is replenished very slowly, and its resources are being used up at an alarming rate, with
the total depletion in 1999 equaling approximately 325 billion cubic meters, or the same amount of water that would flow annually through 18 Colorado Rivers (Postel 34). One solution to this rapid depletion through irrigation is to implement one of many new and more efficient irrigation techniques, such as Low-Energy Precision Application (LEPA) sprinklers, which can raise irrigation efficiency from about 60 percent as it stands with conventional gravity systems to around 95 percent (Postel 36-37).

Another method that would decrease the water needed to produce food would be to reduce our production of meat. According to Postel, by cutting out some (not even necessarily all) of the meat Americans consume we could feed two people with the amount of water we currently use for just one person’s food in the U.S. In fact, the author insists that a plant-based diet is truly the only rational and effective option that remains for our country based on our current groundwater depletion rates (30-31). The amount of water necessary to produce a kilogram of beef is 21.5 times that needed to produce the same amount of soybeans (see Figure 6). This difference may seem surprising at first, but after reflection makes a lot of sense. Consider the amount of the water expended just to produce crops. That water is then compounded in the production of meat, since livestock are sustained by those same crops. By cutting meat produce out of the picture, crops, and therefore the water that produced those crops, could be used directly as food for humans, rather than to feed livestock. Based on this idea, a partial solution to our water depletion problem is moving to a diet with a lower meat content.
Land Resources

In a country known for its wide plains and unbroken horizons, limited land resources in the United States seems an unlikely problem. However, simply because we possess great quantities of a resource does not imply that we should use it wastefully or in a way that impoverishes it. Land use choices certainly can and do have a negative effect on the environment of our country, and similar problems occur all over the world. One major issue that arises in the discussion of our land is overgrazing. As Blackburn, de Haan and Steinfield point out, overgrazing in a particular area can lead to loss of biodiversity, soil compaction and erosion, as well as lower soil fertility, among other problems. Conversely, a complete lack of grazing also creates changes, because larger plants end up blocking sunlight and rainfall for smaller plants, again causing a loss of biodiversity. Many temperate regions such as the western United States,
western Europe and Asia suffer from overgrazing. Another problem closely associated to overgrazing, over-fertilization, occurs in western Europe and the eastern USA. Heavily grazed areas become gradually overwhelmed with nutrients from fertilizer, and the nutrients contaminate our water supply. This problem has been encouraged in the past by policies such as the Common Agricultural Policy (CAP) of the EU which offered subsidies and guaranteed milk price, leading to intensification of grazing areas and extreme over-fertilization. In order to achieve better nutrient management, farmers, the people most closely associated with the land, must be better educated about the situation (Blackburn, de Haan and Steinfield). In general, a grazing balance must be reached so that resources are neither depleted from an area, nor excessive nutrients added to our soil, but the natural system of checks and balances is kept in place. Grazing itself does not necessarily degrade vegetation and soil so long as equilibrium is kept with the needs of the particular type of grazing system.

Another example of how our environment can more easily support a plant-based diet than a meat-centered diet is demonstrated in Gerbens-Leenes, Nonhebel and Ivens' study of land requirements for various categories of foods. Animal products made up almost half of the land requirements for all the food consumed by Dutch households in the study (see Figure 7). On the other hand, staples like bread, potatoes, vegetables, fruits and flour products together account for a mere 12 percent (55). Since meat and dairy are more expensive or luxurious than plant products, a richer population would probably tend to have greater land requirements than a poorer one. Using an average energy requirement of 10 MJ per capita as their basis for calculation, the authors concluded that the land requirement for a household at the subsistence level was a mere 444 m², compared to a total of 3490 m² for the average household in this study. In other words, a very poor household or a vegetarian household eating low on the food chain...
could hypothetically use just over an eighth of the land required for the average Dutch household.

In response to these figures, a natural question might be why it matters whether we save land? In the United States we have a luxurious diet readily available to us, with hamburgers and milkshakes at low prices waiting on almost every corner. Why would we want to cut back on foods that have high land requirements? The answer involves the idea of sustainability. The lifestyle that we as a culture are living today cannot be sustained indefinitely. By taking a gentler approach to using our land, our resources will be able to support the population as it grows.

**Figure 7.** Land requirements for the food consumption of an average Dutch household (m²) in 1990.

<table>
<thead>
<tr>
<th>Category</th>
<th>Land Requirement (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat</td>
<td>1022</td>
</tr>
<tr>
<td>Milk products and eggs</td>
<td>598</td>
</tr>
<tr>
<td>Bread</td>
<td>183</td>
</tr>
<tr>
<td>Cakes and pastries</td>
<td>107</td>
</tr>
<tr>
<td>Flour products</td>
<td>68</td>
</tr>
<tr>
<td>Other food products</td>
<td>148</td>
</tr>
<tr>
<td>Oils and fats</td>
<td>827</td>
</tr>
<tr>
<td>Beverages</td>
<td>368</td>
</tr>
<tr>
<td>Potatoes, vegetables and fruits</td>
<td>168</td>
</tr>
</tbody>
</table>

Water Pollution

An underlying problem in any discussion of both water and land resources is pollution. Although sources of pollution can be found in all areas of our lives, agriculture is one of the major causes of water pollution, specifically, animal production systems can lead to serious imbalances in the environment. The amount of nutrients such as carbon, nitrogen, phosphorous, and potassium that are found in the plants differs greatly from the ratios that can be efficiently handled by animals. The nutrients excreted by animals then freely enter the environment. For example, nitrogen escapes through urine into the soil and allows ammonia to enter the air. Acid deposition is probably related to nitrogen, and nitrous oxides have a negative impact on the ozone layer. Carbon can be converted into methane (CH₄), also considered harmful to the ozone layer and a contributor to the greenhouse effect. Since a relatively small amount of phosphorous can be absorbed by animals, the majority of phosphorous content in feed ends up deposited in the soil, eventually accumulating in the soil until it is saturated, and then filtering into groundwater or remaining in surface water. Finally, plant requirements for potassium are much higher than those of animals, again leading to potassium deposits in both ground and surface water ("Environmental impacts" 3113-4).

If mixed farming, or closed farming systems, were the only form of agriculture, imbalances caused by animal waste would be minimal. Mixed farms grow crops, feed and livestock within a single farm. In mixed farming the waste products from crops are fed to livestock, and their manure is used in return to enrich the soil (Blackburn, de Haan and Steinfeld). Unfortunately, with the industrialization of livestock production, animals have been transferred from an outdoor, more comfortable environment into over-crowded buildings, where they spend the duration of their lives until they are slaughtered and their bodies are processed as
food. Before this modern factory farm technique and modern transportation options, animal producers were limited by ecological constraints of the landscape around them. Since massive amounts of feed can now be transferred quickly and efficiently, mixed farming techniques are no longer necessary. Huge numbers of animals can be raised in relatively tiny areas, obviously producing amounts of waste far beyond the ability of the surrounding landscape to assimilate (Mallin 370).

Concentrated animal feeding operations (CAFOs), also called "factory farms," collect enormous amounts of animal waste in lagoons beneath the buildings. This waste is later used as fertilizer for nearby fields, deposited through surface spraying, surface spreading, or subsurface injection. Poultry waste, because it is dry, is generally spread onto fields. After being placed in the soil, some excreted nutrients are used by crops, but a surprising amount eventually joins our water supply, either through surface and subsurface runoff, groundwater contamination or incidents like storms and accidents (Mallin 370-1). In "nutrient-sensitive watersheds" these wastes can lead to the eutrophication of surface water, a process that occurs when excess nutrients diminish oxygen levels and eventually cause the extinction of many organisms.

One example of these "factory farms" that has been heavily criticized in recent years is pig farms. Pigs generate 10 times the amount of waste humans produce. However, unlike human waste, pig waste is not treated before being deposited in fields, where it is carried into ground and surface water. Factory farm pigs are kept alive longer by a variety of substances that include antibiotics, hormones, pesticides and heavy metals, just to name a few. The antibiotics that remain in swine excrement can lead to "deadly 'super bugs'" that have developed immunity to human antibiotics. Nitrate, found in animal waste has the ability to cause mental retardation in children or even the death of infants (blue baby syndrome). Smithfield Foods, the biggest pork
producer in the world, was fined in 1998 for violating the U.S. Clean Water Act 6,900 times. One spill from a pig lagoon in North Carolina in 1995 polluted the Neuse River, killing a billion fish. 100 million fish die in the Neuse every single year due to the pollution from pig farms. Another frightening result of this pollution is *Pfiesteria piscicida*, a toxic microbe that can kill huge numbers of fish and has been known to cause sores, respiratory illness and even brain damage in humans who come into contact with it (Kennedy 49).

Clearly, the pollution caused by the meat industry in our country is unacceptable. Just thinking of all the animal waste that ends up in our drinking water every year is enough to turn one’s stomach. Besides simply sounding disgusting, the number of examples of concrete negative effects to our environment and our population should be enough to persuade us to cut back on the amount of meat we eat, or at least to examine its sources more closely. Is eating cheap bacon really worth promoting deadly diseases?

**Conclusions on Vegetarianism and the Environment**

Repeatedly, while investigating the environmental side of vegetarianism I have found myself completely stunned. I am stunned by my culture’s lack of sustainability. I am stunned by society’s apathy towards the environmental crises that we almost inevitably will face unless we drastically change our habits. I am stunned by my own apathy, because most of these facts I have encountered in the past and ignored, unwilling to accept that I might be seriously contributing to the degradation of my world. Unfortunately, after forcing myself to acknowledge my own personal responsibility in this matter, I must also accept how little I can do. The knowledge I have gained has convinced me to become a vegetarian, but just one person changing eating habits is not sufficient to change the course of our future. If somehow, miraculously, a large portion of our population cut back on the amount of meat they eat, I do believe significant,
positive changes would result in our environment. By limiting the meat consumed by our nation and in the world at large, we would not solve all of our environmental problems. We would still be running factories, driving cars and overusing our water supply. However, we would be making a large dent in finding a solution to many of the issues that we are faced with today. We would be reducing the amount of air, water and soil pollution that we are constantly creating. We would open up much of our water and land resources by using what we have more efficiently. By eating a more plant-based diet, we would leave an environment that, while still not perfect, would be healthier for future generations.
Bibliography


<http://www.worldwatch.org/pubs/mag/1999/125/>

Chapter Two: Our Experiment

During the course of one sixteen-week semester we lived a vegetarian life-style. Besides just avoiding meat, we also tried to make healthy eating choices and to support local farmers as much as possible. We divided the semester into five phases, each representing a different degree of vegetarianism.

Week 1: Semi-vegetarian (poultry and fish)
Week 2: Semi-vegetarian (fish)
Weeks 3-12: Lacto-ovo-vegetarian
Weeks 13-14: Lacto-vegetarian
Weeks 15-16: Amy—Remains lacto-vegetarian
Becky—Vegan

Throughout the semester, we kept journals documenting our thoughts, feelings and experiences, which can be found in Appendix A. We also took one evening a week to try new vegetarian recipes, making notes of our recommendations and comments. We have compiled these recipes and our notes in Appendix B.
Chapter Three: Personal Reflections

The following is a review of our personal backgrounds in relation to our thesis project. We will discuss some of the events that led to this project and our expectations before the semester began. We will also give a brief summary of our reactions to the experiment.

Rebecca’s Personal Reflection

When I was growing up, pretty much every family meal was centered around meat. My mother tried to keep us from eating too much junk food, but being a large family she could only fight so many battles over the kind of food we ate. I never thought about changing my eating habits until I was a sophomore in college and I became friends with a number of vegetarians. I was impressed by their choice to be different from mainstream society but I never really investigated the reasons behind their decisions. Because I spent a lot of time with them, I ended up incorporating more vegetarian food into my diet, and for the first time in my life I consciously tried to consume less meat. Since then, I have gradually learned more about vegetarianism and the idea of permanently changing my own meat-consumption pattern became gradually more appealing to me. My senior honors thesis seemed like the perfect time to force myself to make a commitment. I decided that if I did not try vegetarianism now, I probably never would. Without a definite decision to change on my part, I knew I would spend my whole life vaguely wondering whether I should have become vegetarian. At the same time, with both Amy and I working together, we knew we could keep each other accountable.

Without question, this semester has changed my life permanently. The reasons that I have found to be a vegetarian so far exceed the reasons that I might eat meat that I do not see myself returning to a primarily non-vegetarian diet at any point in my life. Although I did most of my investigation into the environmental reasons to cut back on meat, my principal reasons for
remaining a vegetarian are ethical. While I have heard about cruelty to animals in the meat-production industry for most of my life, I never allowed myself to consider the reality of that cruelty. The atrocities that are committed every day in our country horrified me, once I became aware of them. Our double standard in pampering certain animals, such as dogs and cats, while torturing and eventually slaughtering other animals is irrational and indefensible.

Contrary to my expectations, my semester as a vegetarian was not a challenge at all for me. Avoiding meat felt surprisingly natural within a very short period of time. I was even more surprised to discover, about the end of September, that thinking about eating meat was actually distasteful to me. Rather than having trouble keeping meat out of my diet, I would have had a hard time keeping it in! I am still amazed at how much easier changing my lifestyle was than I thought it would be. I expected that following our diet for this thesis project would be a struggle, but instead I realized that it just helped me to live in a manner better suited to my personality.
Amelia’s Personal Reflection

I was a bit apprehensive when we began the actual project and limiting our diets. I will not lie; I am quite fond of meat, though I do not have a problem going without red meats and pork. I do love fish and chicken. I also had a childhood experience with vegetarianism which I have always remembered negatively. My mother wanted us to be vegetarian for a year, though my father did not relish the idea. I just remember hating tofu and all the foods I thought were strange that she would make, and I was very happy when she quit the experiment.

When we began eating tofu regularly, I was surprised to discover that it is not as bad as I had remembered it. I did not have much of a problem cutting meat out of my diet except when I went out to eat, especially at restaurants that are not vegetarian-friendly. At home, it became natural to eat tofu or beans or soy burgers instead of chicken. I did miss meat, however, and since the end of our project I have been eating fish and chicken. I still eat vegetarian options and I do not eat meat every day, and have decided to try to refrain from eating red meat.

I know that it is healthier for me to eat less meat and better for the environment and world in general. Unfortunately, my personal feelings about the moral and ethical side of vegetarianism are just not strong enough to keep me away from all meats. I do feel that I now have a better idea of the advantages and disadvantages of vegetarianism and that I will be able to make a well-informed decision about what I eat.
Conclusions

Obviously, this thesis has inspired substantial changes in both of our lives. After living a semester as a vegetarian, Amy, a self-avowed meat lover, has given up red meat and seriously cut back on meat in general. Becky has made a permanent change to vegetarianism. Based on our experiences, we feel that we can honestly and accurately say that a vegetarian lifestyle is completely feasible for college-age people like ourselves. However, we did note that eating outside of our own home was something of a hassle, since the number of vegetarian options that exist in restaurants is limited. By the same token, college students in dorms would have a slightly more difficult time being vegetarians than we did, since they do not have complete control over the food that is available to them. We did not find any significant difference between the amount of money we spent on non-meat alternatives and how much we might have spent on meat. In terms of health, because we thought so much about what kind of food we were eating we were able to consciously make healthier overall choices. Overall, we have found that living a vegetarian lifestyle has helped us to more closely examine our own values, beliefs, and perceptions and we would highly recommend the same experiment to any of our peers.
Appendix A: Thesis Journals

Rebecca's Thesis Journal

August 29th
So tonight is the last time I'm allowed to eat chicken for a semester. This is very strange. I've given things up before, usually dessert during Lent back when I was younger, but I've never decided to just not eat something for 16 weeks simply out of curiosity. Granted, we are easing in to the whole vegetarian thing pretty slowly, but I think that's a good thing. This first week was really easy, since I generally don't eat much red meat anyway; eating a semi-vegetarian diet has been no problem. Next week probably won't be any more of a problem, especially since it's not like we're going to have chicken sitting around the apartment waiting to be eaten. The only time I'll probably even think about it is if I go out to eat. I've never really had a dietary restriction when I'm eating out with my friends before, except for the fact that I usually watch my dairy intake a bit since I'm sort of lactose intolerant. But as that's more of a guideline than a strict rule, this will be pretty different.

Our meal today was really good—we had rosemary-lemon chicken—I wasn't entirely sure about the apples with the herbs and salt and pepper and everything, but after a couple bites I loved it. I will say though, that having two people work together in such a small kitchen can be a little harder than I expected. We're definitely lacking counter space, and so it was hard for both of us to work on things at once, and we ended up doing a bit of getting in each other's way and a lot of taking turns, which was fine but would have been easier in a bigger kitchen. My other comment is that egg cartons should be required to have some kind of mechanism so that we close! Two eggs were sacrificed to the floor this afternoon due to a lack of a decent closing device. They were good, free-range brown eggs, too, and it was a tragic loss.

September 7th
Well, we are now officially off of all meat. We had our last fish meal last week, southwestern style. It turned out well, although I don't know why these things end up taking so long. I guess actually putting a meal together from scratch just takes more time than we're used to nowadays. Maybe if we did it more often, or if we had made these things before then we would be faster about it? I'm not sure.

I had a bit of a moral dilemma over the weekend. I went home to Ann Arbor, and I ate dinner at my boyfriend's house for the first time ever. They were having a special birthday dinner for his mom, and of course its main dish was barbecued meat. I was so torn, because on one hand I really didn't want to break my pact not to eat meat, but on the other hand I really really wanted to make a good impression on his family, and starting things out by being fussy about the food they were serving seemed like a bad way to do that. So I tried to avoid the red meat, felt guilty about the meal, and went ahead and ate some chicken. Hopefully I won't have more instances this semester where I feel obligated to break down and eat things I've promised myself not to. I think
I feel particularly bad because this was so early on in the semester, so we've barely even gotten started.

Amy and I are about to go get some grocery shopping done. I don't think shopping now will be much different now that there is no meat at all in our diet, since we haven't been buying much in the last couple weeks anyway. We probably will be looking a bit more into meat substitutes like boca burgers and things like that. I'm curious to see how the prices will compare, for sure.

September 15th
I went out some over the past weekend, and sometime around 3 in the morning my friends decided to get hot dogs from Carter, naturally, because what else do you do after leaving the bars late at night. It didn't bother me too much, but I did feel just a bit left out, and I wished that Carter had some kind of meatless option. Obviously, not a reasonable thing to ask of a hot dog vendor in the middle of Muncie, IN, but I bet if he had been in somewhere like Ann Arbor he would have had something to offer that I could eat. Really, though, when I think about it more, I've always been a little bit scared of hot dogs anyway. Who knows what kind of meat or other substances really goes in to those things? With their shape and texture, definitely nothing resembling their original form is apparent at all.

September 21st
We're managing to get a little bit more variety in our diets now. Tofu has definitely been incorporated in, and is a very useful substance, in my opinion. I had spaghetti with tofu, mushrooms, tomatoes and feta cheese tonight, and it was really good. My only complaint, really, with this diet is that I feel like I might be putting on a little bit of weight. I'm never a very good judge of my body composition, though—often in the past the only way I'll notice that I've lost weight is that my friends will say something, which leaves me wondering when I put that weight on in the first place. But some of my pants are getting kind of tight. It's possible that the change is due to a gain in muscle—I've been working out a fair amount, and that might be the case. But I don't think I'm really doing more than I did all summer, so I'm not sure why I would change now. On the other hand, I can't figure out why our diet would be making me gain weight. I feel like we're eating much healthier than we ever did last year. I probably snack a bit more than I should, and I always have a weakness for desserts, but we've been relatively good about not keeping much junk food in our house. I really don't understand it. Hopefully it will either stay stable now or it will drop back down to normal. I should be used to at least small weight fluctuations by now, they seem to happen to me whenever I move from one place to another (i.e. move home for the summer/go back to school) and they never seem to be permanent. And they're not huge changes, so I'm not really too worried about it.

One of my favorite things that we've been trying to do is to eat as much locally grown and organic food as we can, so we've been going to one of the local farmers' markets every week. We went to the one at Minnetrista this past Saturday, and it made me really happy. Something about the atmosphere—everyone seems so connected, somehow, and I love seeing all of the fresh produce and flowers. Carl (Amy's boyfriend) went with us, and one of the ladies selling flowers talked him into buying Amy a huge bouquet of them. Leaving the market with bags full
of food actually grown by the people who sold it to us is an awesome feeling, and puts me in a
good mood for the rest of the day.

September 28th
It's strange, I'm starting to be grossed out by the idea of eating meat. It's only been a month since
I've eaten it, but when I visualize myself consuming animal flesh, I just start thinking about all
the grease and fat, and then I start thinking about the animal that it came from, and I almost get
sick to my stomach. I've never really let myself think about what meat is before, probably as a
defense mechanism—denial. When I started this project, I figured that the chances I would stick
with vegetarianism after this semester, at least as a rule, were pretty low. But as time goes on,
I'm more and more inclined to make this a permanent lifestyle. I guess we'll see where I am
come mid-December.

I did come across a down-side to this diet today. I tried to give blood at the University
Apartments blood drive, and I got rejected for having too low of an iron count. I should have
realized ahead of time that it would be, really. I've had trouble with it before because I didn't eat
enough red meat, and actually the last couple times I was able to give blood I made myself go
out and eat a big hamburger within a day before, to try to get my iron count up. Now that I
haven't had any meat in so long, I really shouldn't be surprised at all that my iron level is the
lowest I've ever seen it. I'm not terribly concerned, but it was frustrating not to be able to give
blood, especially since I know that they really need more blood donors right now. At least I
tried, I guess.

October 4th
I just spent the weekend in West Virginia visiting my boyfriend, and it was my first experience
trying to be vegetarian when I'm not cooking for myself the whole time. Eating vegetarian
outside of my own home is much more difficult, for sure. I had a soggy sort of cheese sub the
first night, and I learned that Chili's does indeed have bean burgers for those of us who don't eat
meat. So I guess those experiences weren't terrible, but certainly my options were pretty limited.
Of course, Huntington, WV isn't exactly the most cosmopolitan or diverse of places, so I didn't
expect to find tons of vegetarian restaurants or anything. But it would have been nice to have
a little bit more to pick from. The worst was when I was driving home. I really wanted to grab
something fast to eat, but I couldn't think of anything I could eat at fast food places I passed. I
ended up stopping at a gas station and eating junk food for dinner, and of course ending up with
a horrible headache because I hadn't gotten enough protein or nutrients in general in my body.
This weekend really made me look at how meat-focused our society is. We put animal flesh in
almost every main dish at restaurants, and even a lot of side dishes. In a way, this obsession with
meat is strange, because when one really stops to think about where the meat comes from, it's
pretty gross. In most areas, Americans have an aversion to all things that might be deemed in
any way "gross" or unclean, so I'm surprised that we aren't opposed to something so primal as
eating another animal's body. I guess it's one of those habits that is so very habitual that we
never step back far enough to examine it objectively. Or perhaps I am being subjective right
now, based on the fact that I haven't eaten any meat in a while. I'm not sure.
Vegetarian lasagna is awesome! I was really impressed with it—particularly because I'm somewhat lactose intolerant, and it has a lot less cheese in it than regular lasagna. We also made some awesome pumpkin pancakes the other night. Oh and I went to Puerto Vallarta with some friends this past weekend, and I had some fantastic potato enchiladas. Really, they were so delicious! Who needs meat when vegetarian food tastes so good?

I did have a minor frustration on Saturday, because I went tailgating (it was Homecoming), and obviously no one was cooking anything vegetarian-friendly. My friend Megan is also a vegetarian, and after a couple hours the two of us were starving. Fortunately my apartment is pretty close to the stadium, and I was well stocked with boca burgers, so we came back here and made a lovely meat-free lunch for ourselves and all was sunshine again.

I'm getting a little bored with eating the same things all the time. Except for the times when we actually cook together to try a new recipe, Amy and I have a stock set of easy things to make that we make over and over: pasta and vegetables, variations on rice and beans, quesadillas. They're all good in and of themselves, but when repeated so many times they sure do get boring. I think this would be an issue just as much if I were still eating meat, though. It's not like eating chicken would really spice up my menu very much, and I bet I would still have a stock set of easy ways to make it that I wouldn’t vary from much. I guess this is why people end up eating tons of tv dinners and frozen food! Maybe if there were more people to cook for or if Amy and I actually ate together more often we’d go to more effort, but because we live on our own schedules we rarely do. It seems so silly to put a lot of work into a meal that only I will eat, so meals that can be prepared in ten minutes or less have become the staples of my life. I'm guessing that the vast majority of America is the same as me, too. What boring lives we lead, cuisine-wise! The issue with me isn’t even necessarily one of time. I’m busy, certainly, but not so busy that I couldn’t cook decent meals. I’m just too lazy to plan things out ahead of time to get the ingredients I might need, and then I’m too poor to get anything expensive. Maybe when I have kids someday I’ll force myself to put more effort into cooking? I hope so.

We had another really awesome meal last night—an African recipe with all kinds of vegetables cooked together and then put over couscous. I didn’t think the combination of spices and vegetables would work well, but it really did. The week before we tried potato enchiladas and fried ice cream, which I was equally impressed by. We’ve really been having a series of hits as far as recipes go.

I went to hear Mylan Engler speak about the ethics of eating meat last week, and I was truly impacted by what he had to say. I hadn’t realized before just how horrible the conditions are in which we produce meat for most of America. I guess I knew that probably some practices were somewhat distasteful, but I never wanted to know more, I think because I knew I would feel guilty. After hearing what he had to say, I'm so glad that I’ve already stopped eating meat. The enormous number of animals that live their lives in inhumane situations is astounding. Just the
fact that chickens have to have their beaks and toes cut off so they don’t kill each other demonstrates how horribly unnatural and overcrowded these animals are. These creatures spend their whole lives trapped in incredibly tiny spaces, merely to give us protein. As far as that goes, I’ve decided that I have no real need to ever eat meat again. There is no reason at all that protein from plant sources isn’t entirely sufficient for me and really for anyone else, once they let down their mental block enough to think about what they’re doing. Unfortunately, the commitment to give up meat, even partially, is much more than most westerners are willing to do.

October 30
I rarely eat lunch on campus, but when I do, I never know what to eat. There are vegetarian options available, for sure. I usually eat in the Atrium if I need to eat on campus, which is rare. Of course there’s always cheese pizza at Sbarro’s, which is generally soggy and hard to choke down. There are vegetarian sandwiches in the deli, which are overpriced and don’t taste too great either. There’s wannabe Asian food, which does offer tofu, but isn’t great for someone on a budget. There is really bad Mexican food that does fit into my budget but I feel sick for the rest of the day if I eat. The one option that I’ve found that I like is garden burgers from the grill. They actually taste pretty good, although if I were to get one every time I needed food on campus they still add up. So, while there certainly are options, I sure do wish they were a little healthier, cheaper, and that most of them didn’t leave me feeling sick after eating them. For some reason food from the Atrium always seems to be at least twice as greasy as the food you might find anywhere else. As far as price comparisons go between veggie and non-veggie food, there’s little difference. I think the big difference is between healthier and less healthy food—a cup of fruit costs almost twice as much as French fries, for sure.

November 7
The reaction I get from people when I tell them that I’m becoming a vegetarian is always interesting. A lot of them look at me like I’m crazy, and then say something moderately derisive about vegetarians, or else start telling me how much they love meat. I’m not sure why this is necessary. A few of them tell me how admirable my intentions are, and that if they were better people they would do the same. What they don’t realize is 1.) it’s not as hard as you might think to give up meat, as long as you’re cooking for yourself and 2.) if you don’t like meat that much in the first place it’s really not a big sacrifice. I think this whole process has been a lot harder on Amy than on me, because it’s something I’ve considered doing for longer than her, and I’ve never been the meat lover that she has. Red meat has kind of grossed me out since I got to college, and while I have always enjoyed chicken, it wasn’t like someone had asked me to give up, say, chocolate. Now that would be a real hardship and a sacrifice.

November 13
I miss good fruit! It’s already so hard to get any decent produce at the grocery store. The farmers market is really such a great idea, I just wish we lived in a climate where stuff grew longer. On another note, I have another story about interesting reactions from people on my vegetarianism. My psychology professor found out that I don’t eat meat, and of course had to continue to ask me why I don’t eat it, etc. I thought that would be the end of the conversation,
but then he starts to tell me about how he had ribs last night. I thought it was going to be one of those things where a meat-eater starts describing in great detail how much they enjoy eating flesh, but it turns out that his wife is a vegetarian and he was talking about non-meat ribs. He kept going on about them for a while, and really recommended that I try them. I’m still a little scared to, after trying non-chicken chicken I’m inclined to just stick to veggie burgers. But then a few days later my professor ran into me in the hallway and was like “you’re the vegetarian, right?” and proceeded to tell me all about the fake turkey casserole-thing that he had for dinner the night before. The best part was that I asked him if it was good and he was like: “...eh, it was ok.” If it wasn’t even good, why are you telling me about it in painstaking detail? People can be so very interesting.

November 20
This is the week that we were supposed to stop eating eggs, and I’m a little embarrassed to say that we haven’t had much success. We did stop actually keeping eggs in our fridge, so that was a step. But then we realized that the black bean burgers that we had just bought had eggs in them, and we didn’t want them to go to waste, since neither of us have much extra money to throw around lately. We also keep running into situations where eggs are hard to avoid. For instance, I was supposed to eat lunch at the house of one of my professors on Friday. She knows that I’m a vegetarian, and I felt really bad adding any other dietary restrictions on top of that for her to work around. She had made Spanish tortilla (basically an omelet with potatoes and onions) for us to eat, and I was hardly going to refuse it based on the fact that it was made from eggs. I can’t imagine how lacto-vegetarians and vegans ever manage to eat over at people’s houses without being really difficult and rude to their hosts. I just couldn’t do that; in my book peoples’ feelings have to come before my dietary preferences short of real emergencies. (For instance, obviously a person with a peanut allergy shouldn’t feel obligated to eat peanut butter just to save someone’s feelings.) It’s also just very very hard to remember that I’m not supposed to eat eggs. Amy’s boyfriend, Carl, made brownies last night, so we stopped over to try them. They were delicious, and we enjoyed them thoroughly and ate several. It wasn’t until hours later, while we were getting ready for bed that it hit me. Brownies definitely require eggs. I’m glad both of us have a sense of humor, or we probably would have felt really bad about the situation.

November 26
As far as not eating eggs goes, I definitely am opposed to eating regular eggs that come from factory-farm type places. The way those chickens are treated is morally wrong, and I think it’s sick that we won’t pay an extra dollar per dozen eggs to have animals treated more humanely (i.e. at least letting them move and retain their extremities). But I can’t think of a serious reason not to eat free-range eggs, except for the fact that we’re still exploiting feeling creatures. But since to my knowledge free-range chickens live decent lives, I don’t think that producing eggs for me hurts them, so I don’t have a moral reason to avoid free-range eggs. Which is good because as eggs are the best possible form of protein for humans, being able to eat eggs is really beneficial for me. My only concern really is consuming too much cholesterol—I could just eat egg whites, but that seems so wasteful! Anyway, despite my lack of a problem with eating free-range eggs, I am still trying very hard to follow a lacto-vegetarian diet, since we wanted to try as many levels of vegetarianism as we could. Probably because I don’t have as much of a problem
with eating eggs, I'm finding it a lot harder to cut out of my diet than meat. Although if I were really to think about it hard, eating eggs is just as gross as eating meat. I think I'll try not to think about that too hard!

December 3
I have been trying to follow a vegan diet this week and the next one, but it's just not working. It was bad enough cutting out eggs, but I simply can't manage to cut all dairy out of my diet. Maybe if my food budget was bigger, then I could afford to buy all the non-dairy supplements to fill out my diet. But as poor as I am, I ended up eating the same things, just minus the dairy. And somehow beans and rice just aren't nearly as appetizing without some cheese sprinkled on top. Really, my diet is incredibly limited without any animal products. I can't even have peanut butter and honey sandwiches! Most veggie burgers have some kind of egg product mixed in, and almost all baked goods are out of the picture. I just don't know what to eat! On top of that, I've been getting pretty bad headaches lately whenever I get hungry. I think maybe I have a high sensitivity to blood sugar levels. Since dairy has been a relatively major source of protein for me this semester, trying not to eat it is really hard. I don't think I can make it through two whole weeks without any dairy.

December 11
I'm slightly embarrassed to say that I just didn't have the self discipline to maintain any kind of a vegan diet. My headaches were really bad, and although I don't think they were directly caused by not eating dairy, I think they were caused by simply not getting enough of the right kind of nutrients. I guess I figured because being vegetarian has been so easy for me that taking another step into veganism would be just as easy. Unfortunately I was very wrong. I think maybe I should have prepared better, bought more vegan-friendly foods and planned out more meals for myself, rather than last minute trying to come up with things to eat and struggling to get enough. Maybe someday I'll be rich and I can hire a chef to make awesome vegan food for me! Okay, not really. But I think in order to be a successful vegan I would need to have serious convictions about why eating any animal products is bad, and I would need to learn better ways to prepare vegan food.

December 18
Well, I made it through a whole semester, and I really only went off my diet at the very beginning and at the end when I was trying to cut out dairy. I'm actually pretty proud of myself. This whole thing hasn't seemed like such a big deal while I lived it out, but at the beginning I really wasn't sure how well it would go, or if I'd be able to stick to it. And look at me now, I'm a permanent vegetarian! Who would have thought this day would come. I remember a couple years ago, for some reason I kept making all of these vegetarian friends, and I never really thought very hard about the way they ate or why they did it. But I certainly never thought that one day I would decide to live the same way. I think the reason I'm proud of myself really is that since I'm not religious anymore, and I tend to be open-minded almost to a fault about certain things, it's rare for me to find something that I believe in really strongly. Not that I don't have beliefs or convictions, but I have a very flexible view on the universe, I guess. It's rare that I'll
really take a stand on an issue, because I always see the other side of the argument too well. And
obviously just me not eating meat isn’t that big of a deal. But somehow I still feel like a better
person for letting myself become aware of the situation, and making a definite change in my life
based on the problems that I saw.

December 26
I thought I’d write one more entry from a post-semester perspective. I’m on winter break right
now, and being at home adds some interesting new dynamics to my diet. My family eats a lot of
meat, and has been teasing me about how I eat now. My older brother, always quick to make up
a new nickname for me, has started calling me “Boca Becky” for the boca burgers that I like to
eat. On the whole though, it hasn’t been too bad. I’ve even talked my family into trying some of
my food, and they admit that it doesn’t taste as badly as they thought it would. One of my little
brothers tells me that boca burgers are to regular burgers what diet coke is to regular—tolerable,
but just not the same. But overall I’m really proud of them for being open minded at all, and I’m
hoping that over time I’ll make at least a little bit of a difference in their eating habits, or at least
make them think more about some of these issues.
Amelia’s Thesis Journal

August 29th
We just completed our first real thesis meal! I think it was fairly successful. We made chicken, apples and potatoes roasted in a lemon rosemary sauce along with green beans and a lemon cake. We haven’t tasted the cake yet but as soon as my stomach is ready I’m heading for it. This is our meal for the week in which we are semi-vegetarian and still eating chicken and fish. Next week we will be doing fish so we thought chicken would be best representative.

The meal was surprisingly spicy, perhaps because of the combination of spices and lemon juice. It was very good and had a distinctive flavor. This week has been fairly easy because I have not been eating much red meat for a while now so I’m used to eating chicken. Our friend Carl ate with us as well and it was not hard to accommodate him whatsoever. The only problem with eating semi-vegetarian seems to be when other people are cooking for you, especially if they are grilling hamburgers or hot dogs. I feel bad asking for a soy burger knowing it’s a special accommodation.

August 31st
We had to make an exception tonight, cooking our meal earlier than we usually would because both of us will be gone this weekend. Tonight we made crispy perch coated with tortilla chips, Southwestern potato salad, and Mexican salad. We obviously ended up with a Southwestern theme going. I had surprisingly few notes about improvements and enjoyed the meal. The only thing that I would do is lessen the amount of cilantro in the potato salad.

I think this meal making is proving to be a nice bonding and cooperative experience between me and Becky. I like the time in which we cook and eat together and there’s a real feeling of friendly compromise involving the final product.

September 4th
I knew coming home might be a problem for my vegetarian diet, but I didn’t know it would be this bad. I’m currently starving at 11 am because I usually eat breakfast as soon as I get up. I can’t do that here because there is absolutely nothing in the house that does not contain meat that I could possibly make. There’s some pancake mix, but no eggs or milk. I don’t know what exactly to do. I don’t want to go spend all my cash on food this weekend because I’m home. That seems so counterproductive. On the other hand, the only other way I can see myself eating is if I go out to eat with my dad or eat at Chris’s, both of which are highly dependent on when they end up eating. They don’t need to eat as often as I do, with my raging metabolism. Aaaaah!

So yeah…I guess we’ll see what happens, but the outlook isn’t good right now. I’m worried about finding meal choices even if we do go out to eat. Restaurants are so meat-oriented.
September 6th
I don’t know if there is a direct correlation in this, but I thought I should note it anyway.

I haven’t been at the gym for three days and during those three days I was at home and I didn’t eat very well. One day I had a Blizzard, fries and a Frosty in a matter of hours, and then I didn’t have any dinner. So you see, it was bad. Today I worked out and I had a really hard time, harder than I usually do after a break. I was pushing myself somewhat, but I noticed a shortness of breath in particular. I’m curious if the difference in food has something to do with it. I’m sure it does, but I think it’s just because the food itself was unhealthy.

September 12th
Ah...our first meatless meal. We prepared rice and bean casserole and, since we couldn’t resist, raspberry chocolate brownies. The casserole was good but could have used some cheese or sauce mixed in with it. Becky and I did mix in tomato sauce with our individual portions to add flavor.

It goes without saying that the brownies were fantastic.

It has been odd going without meat for these past couple of weeks, but it is not as hard as I expected. There are times when we can’t figure out what to do for protein, and we eat a lot of peanut butter, soy products, and cheese in order to make up for that. I definitely feel that there are still many ways to be creative with meal choices and there are tons of vegetarian recipes out there. It’s not as horrible as I expected, although I do miss certain things a lot. I think it would be better if either one of us was driven by some moral feeling on eating animals or animal products. Neither of us feels very strongly about that at all, so it’s harder to justify simply not eating stuff that we enjoy.

September 18th
I don’t feel any different in my exercise ability from not eating meat, at least not yet. I think I am still getting plenty of protein and I haven’t been more tired or fatigued more quickly. My performance hasn’t improved or anything either, though, but I do feel healthier in general. For some reason not eating meat is helping me avoid that over-full sensation after meals. Even when I feel full on this food, I don’t feel as disgusting. That’s pretty nice.

I am worried that I might be eating too many carbohydrates, as that seems to make up such a majority of my diet now. I know it’s good to have them when you exercise as frequently as I do, but too many is never a good thing. I am no low-carb diet lover by any means! I just feel like eating so many carbohydrates will be detrimental in the long run. I am trying to figure out how to fix this but I don’t know if I’ll achieve any great difference.

September 26th
Made 1S-bean soup and cornbread this time around. The soup recipe called for sausage but we just went without, and I think this affected the flavor a lot. It wasn’t as flavorful as it should
have been. The cornbread was okay, but not sweet enough. It definitely needs to be eaten with butter or honey or something.

Becky and I are getting much better at cooking together. We aren’t stumbling around and running into each other nearly as much, and we can get everything done at almost the same time.

I’m doing okay with the meatless stuff, as long as I’m in the apartment. It really sucks to go home because my family is so meat-oriented, and most of the time there is no food in the house. I had to eat fast-food all weekend and it is really hard to find meatless fast food. It was pretty frustrating, actually.

I will definitely return to eating meat when this is over. I miss it. I miss being able to eat anything when I go out. I might stay off of red meat, but I will definitely eat chicken and fish.

October 3rd
I’m feeling thoroughly discouraged with this thesis right now. Not the project itself, just being vegetarianism. There are two things making this hard for me: first, my lack of moral reasons, and second, my lack of willpower. I went home with my boyfriend this weekend and I hated going to a sandwich place and having to order a Boca burger. I don’t mind them if they are seasoned but I really don’t like the taste of plain Boca. I found myself eating the mushrooms off of it because it was ruining their taste for me!

This morning his family cooked bacon for breakfast. I was okay not eating it, but it was sitting there on the table in front of me and I really wanted some. This is despite my usual distaste for pork. Then we had to go to Subway on the way home, and of course my only choice was a veggie sub. Because they don’t have any protein choices besides meat to put on it, I had to be content eating a sub I knew would only keep my hunger at bay for a couple of hours. Bread, lettuce, olives, tomatoes, onions and cheese just don’t do it for me.

So yes, I’m frustrated. I want to eat meat. I’m okay when I’m just in my apartment, but even then I find myself craving some special dishes. It is so much worse when I have to or want to eat out.

October 12th
I guess I am doing alright with not eating meat right now, but I am getting sick of eating the same old things. I know that wouldn’t change all that much with meat added into the mix, but somehow I irrationally feel that it would. All I eat are Mexican and Asian food options, with some Boca burgers or baked potatoes thrown into the mix every once in a while.

I try to eat a lot of vegetables and some fruit in the hopes that it will lessen the dullness of my diet, but I never have the time or patience to try new recipes. Even simple recipes seem to take so long and I’m so busy this semester. I’m not very experienced with cooking vegetables either, so we always get the same things: bell peppers, zucchini, mushrooms, onions…the list is a short one. I buy frozen vegetables but there is only so much you can do with those either.
October 21st
So yeah...I ended up cheating on the project twice in two days this Fall Break. I was shooting a film in Gas City, where there aren’t exactly a plethora of good restaurants. On our very limited breaks from filming, our basic choices were fast-food places. I suppose I could have gotten something like a veggie sub at Subway, but if you’ve ever had them they have no substance. I was only getting to eat one good meal a day and I needed a ton of energy. I basically decided that I had no choice but to get some protein and take care of myself, though I felt really awful. Filming for 30 hours in two days requires something I wasn’t going to get from any vegetarian fast-food options.

November 1st
I really need to be monitoring this diet more closely. I think if we were to really pay some attention, we would figure out that the reason we aren’t really losing weight is because we are eating way too many dairy products. Cheese seems to be our main culprit, and what a culprit it is! I don’t think I realize how much I eat in a day. Reading and doing some research on the nutrition side of things is helping me to see that I’m not necessarily going about this in the best way.

We need to eat more vegetables, less cheese, and less oil and butter. I think the best way to do this is to find other ways to satisfactorily season our food. We also need to think outside the box in terms of vegetables. We always buy the same things, but we really need to find other options that we can eat because it gets old. I’m sure we aren’t getting all of the nutrients we should.

November 11th
I, at least, have been trying to eat more vegetables. I’m feeling better in general about what I’m eating, but I still feel like I’m frying things in oil too much. I should steam them, I guess? I’m not very good at knowing how to prepare things like peppers and onions without frying them...

I’ve been eating more rice in an attempt to eat less pasta. That’s been helpful... so often I don’t even want to eat anything because I feel like I make the same things all the time. I’m worried about what will happen when we stop eating eggs. They are such a good source of protein and it’s nice to have the variety that they bring. I like being able to make an omelet when I’m sick of everything else.

I’ve been watching my dairy intake in general – I never drink milk, but I do eat a lot of cheese so I’ve been trying to fix that. I do feel better when I’m eating more veggies like I have been this week. I just made some sweet potato soup and it’s very good. I’m proud of myself.

November 16th
So, we’ve stopped eating eggs. Kind of. It’s so hard to remember that they might be in things when I’m really not accustomed to avoiding them! Tonight Becky and I both ate brownies without realizing until hours later that they most positively had eggs in them. If I’m not cooking it myself and I’m not at a restaurant I guess I just don’t think about it. I don’t know how well
this is going to go. I have been making most of my food at home but I’m afraid of trying to eat out when I don’t know what has eggs in it and what doesn’t.

Meat just seems so much easier to avoid. I’m glad that I opted not to try veganism because I think I would be an awful candidate. I just don’t have any resolve to cut that much out of my diet. I don’t see any harm in eating dairy products. They are a good source of protein, plus, they just taste good. It’s sad that I can’t imagine a world without real cheese, but I can’t.

November 24th
We still aren’t doing well with not eating eggs. I am constantly forgetting, especially out to eat, and I don’t think to check some things. There are other little things which I never thought of until too late with each category, like the fact that the marshmallows in the hot chocolate I drink have gelatin in them, which is made from animals. A lot of food has gelatin in it and I never thought of it, nor really cared to have to bother once I did realize it.

I cannot imagine being so devoted to vegetarianism as to figure out which products had absolutely no animal ingredients. I’m just not that passionate.

December 1st
Well, we just keep plugging along. We don’t have much longer, really, until we don’t necessarily have to be vegetarian anymore. I go back and forth on trying to decide if I’ll go back to eating meat or not. I think I’ll go back to eating some but not nearly as much as I used to. I feel better when I’m not eating meat.

As far as this no-egg thing goes, we haven’t been doing really well. We keep forgetting what things might have eggs in them, and things that you wouldn’t think to check end up having eggs as an ingredient. It’s pretty frustrating. Becky is doing her vegan thing now, which is really hard. Everything has dairy in it. I think she’s doing okay so far, but I feel bad eating dairy in front of her sometimes. I know she made the choice though, so that is dumb.

Being at home for Thanksgiving was actually okay... I didn’t mind not eating the meat, except for some jumbo cocktail shrimp that looked really good. The problem was that my family isn’t really vegetable-heavy so I ate SO many carbs that weekend! I wanted to get back to my kitchen at school where I could make exactly what I want.

December 9th
We are so close to being done! Obviously I’m excited to have the option of eating meat again. I’ve been almost resentful of the projects at times, especially when I’m out to a rare nice dinner and I can’t order what I would rather have. It was only a semester, though, and all in all it’s been fine. I’ve learned that yes, I can be a vegetarian if I want to be... at least an ovo-lacto-vegetarian. I don’t know about giving up eggs, and I certainly wouldn’t give up dairy any time soon.
I do think that I will definitely stay away from red meat. Cattle production is so harmful and I do not need red meat to get my protein. It will be hard to get enough iron, which is my one worry. I am going to try to figure out some way to boost my iron intake in another fashion. Otherwise, I am quite excited to return to seafood and chicken. I adore seafood and do not feel like there is as much of an ethical issue with its harvesting.
Appendix B: Recipes

Recipes

(Note: We have cited the URLs of the websites where we found inspiration for our recipes, but in almost every case have made significant alterations.)

Week One
Rosemary Chicken with Apples and Potatoes
Green Beans
Lemon Cake

Rosemary Chicken with Apples and Potatoes

3 chicken breasts, approximately ½ lb. each
3 medium apples (chopped into bite-size chunks)
7-8 small red potatoes (chopped into bite-size chunks)

1/3 c. olive oil
1/2 c. lemon juice
2 tsp. salt
2 tsp. garlic powder
1 tsp. black pepper
2 tbsp. rosemary

Preheat oven to 450 degrees.
Wash and clean chicken; place in roasting pan.
Cut up and wash apples and potatoes; place around and over chicken. Pour whisked mixture of last six ingredients evenly over contents of pan.

Roast uncovered 15 minutes.
Turn chicken over, cover with aluminum foil and turn heat to 375 degrees. Cook for 30 minutes, stirring occasionally.

http://www.petalumapoultry.com/recipes1.html
Green Beans

½ lb. fresh green beans, washed and cut

Cut green beans in half and using an electric steamer, steam 20 minutes. Add salt and butter to taste.

Lemon Cake

4 eggs
8 oz. butter
8 oz. sugar
8 oz. self-rising flour
Juice of 2 lemons
3 Tbsp. icing sugar

Cream butter and sugar. Add beaten eggs and sifted flour alternately. Turn into 8x8, 9x9 or round pan. Bake at 400 degrees for 50 minutes.

Boil lemon juice and sugar. Remove baked cake from oven and immediately pour boiling lemon mixture over top. Cool in pan.


Week Two

Crispy Fish
Southwest Potato Salad
Mexican Salad

Crispy Fish

1 lb. ocean perch filets
1 c. crushed tortilla chips
1 tsp. oregano
1/2 tsp. garlic powder
1/4 c. milk
1 egg
1/2 c. finely grated cheddar cheese
Thaw fish thoroughly. Pat dry with paper towels. Dip in mixture of milk and egg, then in mixture of herbs and chips until thoroughly coated. Place in lightly greased baking pan and sprinkle remaining chips on top.

Back at 450 degrees for 6-7 minutes or until fish is cooked through. Take out and sprinkle cheese over top. Bake until cheese is melted.

Pour salsa on top to taste.

http://www.cooksrecipes.com/seafood/crispy_perch_recipe.html

Southwest Potato Salad

8-10 new potatoes
1 ½ tbsp. cilantro, chopped
2 green onions, chopped
½ large tomato, chopped
½ small onion, chopped
1/3 c. Light Miracle Whip
¼ c. Dijon mustard
1 ½ tbsp. lime juice

Quarter potatoes. Boil until cooked through. Cut into smaller chunks. Mix with all other ingredients.

http://www.lanierbb.com/recipes/data/1584.html

Mexican Salad

5-6 large leaves Romaine lettuce
1 green onion, chopped
½ large tomato, chopped
¼ c. black olives, sliced
1/3 c. grated cheddar cheese
Coarsely crushed tortilla chips for topping
Dressing:
1 medium avocado, peeled, pitted, and mashed
¼ c. olive oil
1 tbsp. lemon juice
¼ c. sour cream
½ tsp. sugar
½ tsp. garlic powder
½ tsp. chili powder
Mix salad ingredients together in large bowl. Top with crushed tortilla chips. Whisk dressing ingredients in separate bowl until smooth. Top with dressing to taste.

http://recipes.chef2chef.net/recipe-archive/28/153515.shtml

**Week Three**

*Pizza*

*Smoothies*

**Pizza Dough**

3 c. flour  
1 package dry active yeast  
1 tbsp. sugar  
1 tsp. salt  
1 c. water

Mix dry ingredients. Mix in water. Knead and let rise 30 minutes. Punch down, knead and let rise again. Punch down again and form to fit pizza tray.

http://southernfood.about.com/od/pizzarecipes/r/bl30117p.htm

**Pizza Toppings**

½ medium onion, chopped  
1 medium tomato, diced  
5-6 large mushrooms, sliced  
½ artichoke, sliced thinly  
1 4-oz. package crumbled feta cheese  
½ can tomato sauce  
Basil and oregano to taste

Spread tomato sauce over pizza. Arrange remaining toppings as desired.

Bake at 425 degrees for 20 to 30 minutes or until dough is cooked through and golden.

**Smoothies**

1 large scoop orange sherbet  
1 nectarine, peeled and chopped
2 bananas, sliced  
Orange juice to taste  

Blend all ingredients until smooth. Add orange juice as needed. Add sugar if desired.

(Original Creation)

**Week Four**  
*Hurst's Cajun 15-Bean Soup*  
*Cornbread*

**Cajun 15-Bean Soup**

1½ large onions, chopped  
1 20-oz. bag 15-Bean soup mix  
1 15-oz. can diced and stewed tomatoes  
Juice of 1 lemon  
2 cloves garlic, minced

Place rinsed beans in pot with 3 quarts of water. Bring to rapid boil. Reduce heat, cover, and boil 60-70 minutes.

Sautee onions and garlic. Add these and tomatoes and lemon juice to pot. Simmer 30-40 minutes.

Add contents of Cajun flavoring packet 1-2 minutes before done.

http://www.dwlz.com/Member%20Recipes/15beansoup.html

**Cornbread**

1 c. cornmeal  
1 c. white flour  
3 tsp. baking powder  
½ tsp. salt  
1 egg  
1 c. milk  
¼ c. vegetable oil  
2 tbsp. sugar

Mix dry ingredients. Beat egg, milk and oil in separate bowl. Add this to dry ingredients. Pour into greased round cake pan and bake at 400 degrees for 30 minutes.

http://www.foodnetwork.com/food/recipes/recipe/0,,FOOD_9936_11703,00.html
**Tofu Lasagna**

5 oz. drained tofu  
2 garlic cloves, minced  
½ lb. mushrooms  
1 c. tomato sauce  
1 c. mozzarella cheese  
4 large lasagna noodles

Sauté mushrooms and onions. Mix mashed tofu with garlic and cheese. Layer as follows: noodles, then sauce, then mushrooms, onion and garlic, then tofu and cheese, then noodles, and the same once again. Top with a layer of sauce and cheese.

Bake at 350 degrees for 45 minutes.

http://www.primasoft.com/recipes/recipes/recipe3139.htm

**Salad**

1 large tomato, chopped  
½ cucumber, sliced  
3-4 mushrooms, sliced  
3 oz. fresh baby spinach  
2 oz. crumbled feta cheese  
Oregano to taste  
Red wine vinegar and olive oil to taste

Mix oil and vinegar with spinach. Layer other vegetables over spinach, finishing with feta and oregano.

http://www.vegsoc.org/cordonvert/recipes/greek.html#gree
Pumpkin Pancakes

2 c. white flour  
2 tbsp. sugar  
4 tsp. baking powder  
1 tsp. salt  
1 tsp. cinnamon  
1 1/2 c. milk  
1 c. pumpkin puree (canned)  
4 eggs, separated  
1/4 c. butter, melted

Sift the dry ingredients. Stir the milk, egg yolks, butter and pumpkin into the dry mixture. Beat egg whites until stiff. Still 1/4 of them in and then fold the rest in. Heat skillet to medium and oil. Make pancakes of desired size.

http://www.fabulousfoods.com/recipes/breakfast/pancakes/pumpkinpancake.htm

Maple Baked Apples

2 apples  
4 tsp. raisins  
4 tsp. maple syrup  
1/2 tsp. cinnamon

Remove apple cores. Fill space with raisins and then add cinnamon and maple syrup. Bake in greased pan at 350 degrees for 45 minutes or until soft. Serve with whipped cream.

http://www.fabulousfoods.com/recipes/dessert/fruit/maplebkdapples.html

Week Seven
Shepherd's Pie

Shepherd’s Pie

2 1/2 tbsp. olive oil  
2 cloves garlic, minced
1/2 c. onion, minced
1/2 large tomato, chopped
1/2 yellow bell pepper, chopped
1 small zucchini, chopped
3/4 mushrooms, sliced
20-25 fresh green beans, cut in half
1 c. water
1 tsp. soy sauce
Pepper to taste
2 – 2 1/2 c. instant mashed potatoes

Heat 2 tablespoons of the oil over medium heat, add garlic, and sauté. Add onion and continue sauting until it is soft. Add tomato and cook for about 2 more minutes, stirring often. Add the water and vegetables and bring everything to a boil. Cover, lower heat and cook until vegetables are tender. Add soy sauce and pepper to taste. Make instant mashed potatoes according to box instructions.

Preheat oven to 350 degrees. Use remaining oil to grease round pie pan. Arrange vegetables in it and cover with a thick layer of mashed potatoes. Bake about 30 minutes, or until bubbling.


Week Eight
Stuffed Eggplant

Stuffed Eggplant

1 medium eggplant
1 tablespoon olive oil
1 tablespoon butter
2 tablespoons minced onion
1 can (14.5 ounces) tomatoes
1 teaspoon salt
1 cup soft bread crumbs

Wash eggplant and cut in half. Scoop out pulp to about 1/2 inch of the skin. Dice pulp. In a skillet, melt butter with olive oil over medium heat. Add onions and sauté for 2 minutes; add
eggplant pulp, tomatoes, bread crumbs, and salt. Mix well; fill eggplant shells. Bake at 375° until browned, about 30 minutes. Serves 4.

http://southernfood.about.com/od/eggplantrecipes/r/bl30727j.htm

Week Nine
Bean and Rice Casserole
Brownies

Bean and Rice Casserole

1 c. uncooked rice
1 small onion, chopped
½ can kidney beans, drained and rinsed
½ can chickpeas, drained and rinsed
½ can stewed tomatoes, drained
½ can green chiles, drained
10 oz. frozen green peas, thawed
1 c. frozen corn, thawed
½ tsp. chili powder
Mozzarella cheese to taste

Preheat oven to 375 degrees. Sauté onion in liquid of choice in large saucepan until tender. Add rice, cook while stirring until parched and opaque. Add beans, tomatoes, chiles, and 1 ¾ cups water and bring to boil.

Pour into baking dish, cover tightly and put in oven until liquid is absorbed. Add peas and corn, adjust seasonings to taste, cover with cheese, and heat through in oven.


Chocolate-Raspberry Brownies

1 c. unsalted butter
5 oz. unsweetened chocolate, chopped
2 c. sugar
4 eggs
2 tsp. vanilla
1¼ c. flour
1 tsp. baking powder
½ tsp. salt
½ c. jam of choice

Butter 13x9 pan. Melt chocolate and butter over low heat, stirring until smooth. Remove from heat. Whisk in sugar, then eggs and vanilla. Mix flour, baking powder and salt in small bowl. Add to chocolate mixture and whisk. Pour 2 cups into pan and freeze until firm. Preheat oven to 350 degrees. Spread jam over the batter and then spoon remainder of batter over that. Let stand so bottom layer thaws (20 minutes). Bake approximately 35 minutes. Let sit to cool.

http://dessert-recipes.info/brownies/chocolate-rasberry-brownies-bon-appetit.htm

---

Week Ten

**Potato Enchiladas**

**Fried Ice Cream**

---

**Potato Enchiladas**

12 tortillas
½ medium onion, chopped
1½ tbsp green chiles (canned)
shredded cheddar cheese
¾-1 lb boiled, unpeeled potatoes

Chop potatoes finely. Put potatoes, onions, and chiles in a small bowl. Add cheese and stir. Soften tortillas and fill with mixture. Place in a greased baking pan and cover with the sauce and more cheese. Bake at 350° until cheese and sauce are bubbling.

http://members.aol.com/ccauthron/veggie/potato_enchiladas.htm

---

**Enchilada Sauce**

16 oz can of tomatoes
1 tbsp vegetable oil
½ medium onion, chopped
2 garlic cloves
1½ tbsp chili powder
¾ tsp oregano
½ tsp salt

---
Sauté the onion and garlic in oil. Add the remaining ingredients. Cover and simmer for 30 minutes, stirring and crushing tomatoes.

http://members.aol.com/ccauthron/veggie/enchilada_sauce.htm

**Fried Ice Cream**

½ tsp cinnamon  
2 tsp sugar  
1 tortilla per serving  
vanilla ice cream  
crushed graham crackers  
honey

Form balls of ice cream. Mix the graham crackers, cinnamon and sugar together. Roll the ice cream balls in the mixture until completely covered. Store the balls in the freezer. Fry the tortillas in hot oil over medium to high heat for approximately 1 minute on each side. Sprinkle more sugar and cinnamon over both sides of the tortilla. Place the ice cream ball in the middle of the tortilla, drizzle honey to taste and put whipped cream around the base of the ice cream ball and on top.

http://www.geocities.com/NapaValley/7035/icecream.html

**Week Eleven**  
*Tortilla Española*

*Tortilla Española*  
4 eggs  
1 medium onion, chopped  
2 small potatoes, cubed  
olive oil  
salt

Microwave potatoes until tender. They can be peeled or not, it's good either way. Saute the onion and the potatoes together. Beat the eggs, add in the onions, potatoes, salt to taste and a bit of olive oil, mix. Heat more oil in a small sauce pan (at a medium heat), pour the mixture evenly over pan. Let the tortilla cook for a couple minutes, then put a plate over the pan and flip the tortilla onto the plate and then slide it back in to the pan (the other side down). Leave it until the eggs are cooked all the way through.
**Week Twelve**

*Becky and Amy's Quesadillas*

Becky and Amy's Quesadillas

2 tortillas
re-fried beans
cheddar cheese
1 small tomato, diced

Spread the re-fried beans over 1 tortilla. Arrange tomato over the beans as thickly as desired and sprinkle cheese over all of it. Place another tortilla on top of this. Broil in oven until tortilla is golden brown and crispy.

(Original Creation)

---

**Week Thirteen**

*Rich Vegetarian Couscous*

*Ethiopian Flatbread*

Rich Vegetarian Couscous

2 carrots cubed
1 or 2 potatoes cubed
500 g pumpkin cubed (or canned pumpkin works too)
1 red bell pepper
2 zucchini chopped
2 Tbsp tomato paste
3 tbsp tomato salsa
olive oil
water
250-500 g chickpeas
Raisins
Couscous

Seasonings to taste:
Cumin
Garlic
Cinnamon
Salt
Pepper

Bring water to a boil, cook chickpeas on high 10 minutes. Drain and set aside. In a big saucepan sauté the carrots, potatoes, pumpkin, peppers, zucchini, tomato paste, olive oil, raisins, a little water (to avoid sticking), and seasonings. Simmer for up to an hour until mixture is thick.

Cook couscous according to instructions on packet—most couscous is instant, so it will cook very quickly.

http://www.ivu.org/recipes/african/rich.html

**Ethiopian Flat Bread (Injera)**

3 cups self-rising flour  
½ cup whole wheat flour  
½ cup cornmeal  
1 Tbsp active dry yeast (one package)  
3 ½ cups warm water

Mix ingredients, set in a large bowl, covered, for an hour or until batter rises and becomes stretchy. If liquid has settled to the bottom of the bowl, stir the batter. Then whip 2 cups of batter at a time in a blender, thinning it with ½ to ¾ cup of water. The batter will be very thin. Cook it in a non-stick frying pan without oil over medium heat. Use ½ cup of batter per injera. Pour batter in heated pan and swirl it quickly to spread the batter as thin as possible. It should be no more than 1/8-inch thick. It is cooked when bubbles appear on the top. The original recipe says not to flip them, but we liked them better when both sides were a little crispier.

http://www.ivu.org/recipes/african/ethiopian-j.html

**Week Fourteen**

*Pasta Bake*

**Pasta Bake**

1 lb ziti (or a similar type of pasta)  
½ cup chopped parsley  
4 cloves garlic, chopped  
1 large onion, chopped  
3 large tomatoes, chopped  
Swiss cheese, sliced, enough to cover top of pan
Cook pasta according to directions on package. Sauté parsley, garlic, onion and tomatoes until tomatoes are almost sauce-like. Add seasoning to taste. Place pasta on the bottom of a baking pan, add sautéed vegetables and cover with cheese. Bake at medium heat until cheese is well melted, then stir together.

(Original Creation)

Week Fifteen

Vegetable Stir-fry
Simple Baked Tofu

Vegetable Stir-fry

¾ medium white onion
8-10 stalks asparagus
½ medium zucchini
4-5 large mushrooms
2 medium sweet peppers
1 broccoli crown, large
½ cup sugar snap peas
small handful of peanuts
¼ can of frozen orange juice concentrate

Chop vegetables. Heat electric wok to medium or high heat. Add olive oil. Sauté onions, asparagus and broccoli first. Add soy sauce as needed. Add zucchini, peppers, mushrooms and peas. Add orange juice and more soy sauce if necessary.

Prepare white rice according to the package.

(Original Creation)

Simple Baked Tofu

1 block firm tofu
3 Tbsp soy sauce
3 Tbsp vinegar
1 Tbsp garlic powder
1 tsp salt
½ tsp pepper
1 Tbsp olive oil

Cube tofu, mix other ingredients in a small bowl. Lay tofu on a greased pan and bake at 350° for 10 minutes. Flip tofu cubes and bake for 15 more minutes.

http://www.recipezaar.com/107968

**Week Sixteen**

*Lentil Dal*

**Lentil Dal**

1 cup lentils  
3 cups water  
2 cups finely chopped onion  
1 tsp olive oil  
3 cloves garlic, finally chopped  
1 tsp curry powder

In a medium saucepan, combine the lentils, water and 1 cup of the onions. Bring the mixture to a boil, reduce the heat, cover, and simmer until the lentils are tender—about 30 minutes. While the lentils simmer, heat the oil in a nonstick skillet and sauté the remaining ingredients between 10-15 minutes. Add the extra onions to the lentils, and salt to taste, heating the whole mixture a few minutes more.

Prepare with white rice as a complement.

http://www.ivu.org/recipes/indian-beans/lentil-dal.html