

Our food system



After a long hard day of work you sit down in your comfortable recliner and open up your favorite snack. But when you reach into grab a piece, you pull out a dead bug.

Suddenly many thoughts come into your mind, you wonder how did the bug get there and was it dead or alive. Is it harmful or carry a disease. You ask yourself did the bug come from the United States or another country and where was your snack made? As all these questions come into your head, you wonder who can give you the answers. Fortunately, the government thought about these conflicts and established several governmental agencies to protect Americans in food safety. These agencies are responsible for inspecting, labeling, marketing, and developing modern safety systems to test foods for diseases and bacteria. They also work with the local and state governmental agencies, farmers, and companies to ensure cleaner air, safer food, and pure water to protect the health and safety of Americans.

The following agencies; Center for Disease Control (CDC), United States Department of Agriculture (USDA), Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA) are the most significant federal agencies to help consumers make better choices in the products they buy. All of them have a particular role in food safety, and by working together they make the foods we buy safer for consumption. The United States Department of Agriculture (USDA) is a government agency that was formed in 1862 by President Abraham Lincoln. The purpose of forming the agency was to promote the rise of commercial farming.

Many other Acts dealing with agriculture were drawn up over the years and eventually in 1939 the New Department of Agriculture was formed.

President Franklin D. Roosevelt pushed the reform of the department through because of the Great Depression was having such a great effect on the farming industry. The new Department was formed from all of the Acts and old organizations within the Department and from the exit of a few agencies out of the Department. The United States Department of Agriculture in which we look at today has grown and evolved into a much more direct and consumer friendly government agency. The duties of the USDA is to research, regulate, and educate.

The U. S. is always researching new farming techniques and different farming products that are involved in the whole process. They also regulate all farming products, to make sure that they are safe for the consumption by you and I.

There are thousands of inspectors across the U. S. regulating the farms and factories in which the food is sold to. Another duty of the USDA is to educate and inform the public of food safety. Because of the scares of improperly prepared food, the USDA must inform the public of different diseases that can be found in foods, especially meat and poultry supplies. They ensure that the food is safe, wholesome, unadulterated, and properly labeled and packaged.

The way in which they do so is hire thousands of inspectors and veterinarians conduct slaughterhouse inspections of all carcasses for diseases and other abnormalities. They also conduct processing inspections

at plants to ensure proper sanitation and cleanliness. The USDA must also look at the imported food products because of the import-export inspection system. The U. S. has one of, if not the safest food production in the world, so we must regulate everything that comes into the country.

Just recently, there was a great example of how great our government is, even with the many shortcomings. President Clinton promised great changes in the inspection process of the nation's meat and poultry. On October 7, 1997 President Clinton and Congress passed a bill calling for the increase in meat and poultry inspections and production. This was caused by the big scare this past summer, the outbreak of E coli bacteria in millions of hamburger meat, in a couple of fast-food chains. The inspection process will increase gradually over the next few years.

Even though the inspection process has greatly improved, this still does not make it 100% guaranteed that there will not be small cases of outbreaks. The USDA urges you to make sure you properly cook your food, so that the chances decline. The USDA has a great importance in consumer services. The U. S.

government wants to look out for everyone across the U. S., the USDA started a Food and Consumer Services (FCS) program. Their purpose is to assist people across the country to ensure that no one will experience or fear hunger. They provide a safety net for people in need. Some of the programs are as followed: Food Stamp Program, Food Distributions for Indians, Supplement Food Programs for women, infants, and children, and School Breakfast Programs.

The USDA serves many different purposes, most importantly regulation and education of food safety. The Center for Disease Control and Prevention (CDC) is a branch of the Department of Health and Human Services that deal with food borne diseases. Today food-borne illnesses are getting a lot of press. Every second of every day someone is struck with food poisoning and 33 million suffer each year.

There are also approximately 9, 000 reported deaths a year. This is because of the unsafe food handling that seems to be becoming an epidemic. There are many different types of bacteria, viruses, and parasites that are either originally found in the food or they are transferred from an outside source, such as who the food was prepared by, that causes the illness (Wardlaw).

When a person comes down with an illness that may have been linked to the food they have previously eaten, the CDC deals with the difficult detection of the microbe that may be involved. Looking at the source of the food, time when the symptoms arrived, and how long the illness lasted usually helps to identify the microbe involved. The following information show's some of the characteristics of the major organisms that cause food-borne illnesses.

The most commonly found organism to cause food poisoning is salmonella. Salmonella can be spread through three common routes: (1) contaminated eggs and egg products as well as raw meats and chicken, (2) infected food handlers with feces-contaminated hands, and (3) marijuana contaminated with salmonella. The onset of symptoms develop from 5 to 72 hours after ingestion. Salmonella can cause nausea, fever, headache, abdominal cramps, diarrhea, and vomiting. It rarely kills, but the elderly and young are those most at risk. Salmonella is usually treated symptomatically and can be

prevented through safe food handling, through cooking of foods, proper refrigeration, and avoiding cross contamination (Marieb).

The next most prevalent food-borne illness causing bacteria is staphylococcus. Staph. Can usually be found in nasal passages as well as in skin sores. It can be spread when someone sneezes or coughs over food or handles food while they have open sores on the skin.

The toxin that is produced by the organism can develop when the food is left out for a long time at room temperature. The onset of the Staph. Illness occurs 2-6 hours after eating. Symptoms include diarrhea, vomiting, nausea, and abdominal cramps that last 24-36 hours and also is rarely fatal. Safe food handling, proper food refrigeration and keeping cuts on the skin covered are all good ways of preventing Staph. Infections (Marieb).

One of the organisms that are making news lately is called escherichia coli (e-coli). This type is not considered a serious food-borne illness in those countries where there are high sanitary standards and practices. However, it can still be spread through foods contaminated by infected food handlers as well as undercooked foods, especially meat and poultry. Onset of the symptoms usually occur within 24 hours.

These symptoms include watery diarrhea, abdominal cramps, low-grade fever, nausea, and malaise (CFSAN). Clostridium Perfringens or otherwise known as “cafeteria germ”, is most often associated with outbreaks involving the food service industry or any other such places that prepare large amounts of food. This organism lives throughout the environment, but thrives in anaerobic conditions where it is left at out room temperature.

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Symptoms are mild and last a day at the most and may consist of diarrhea and abdominal cramps. They occur 8-24 hours after eating, but averaging around 12 hours.

To prevent the organisms from growing separate large leftover portions in order to lessen the amount of food in the warm temperature and oxygen-deprived areas. Also thorough cooking and re-heating of foods is important in preventing c-perfringen bacteria growth (Wardlaw). The next bacteria can actually cause death, if not treated immediately. Botulism, the deadly illness, is caused by clostridium botulinum and can release a fatal toxin when grown. The bacteria are mostly found in canned foods, especially those found in the home.

Checking cans for holes, rust on the seems, and swollen sides and tops can prevent ingesting the bacteria. Just one string bean has enough toxin in it to kill a human being. Symptom can appear 12-36 hours after eating the contaminated food and are associated with impaired nerves. They include double vision, inability to swallow, speech difficulty, progressive paralysis of the respiratory system, and abdominal pain along with vomiting. Ten days of bed rest is usually the ultimate recovery period, if the person survives.

The best ways to prevent botulism include using proper methods for canning low-acid foods, making sure nothing is wrong with a can, and by destroying the toxins (when the can is already opened) by boiling the contents for 20 minutes, but throwing away if toxins are suspected (Wardlaw). Those organisms were a few of the many that cause food-borne illnesses. Viruses such as Hepatitis A and Rotavirus as well as certain parasites can cause food

illnesses. Safe food handling, thoroughly cooking foods and re-heating the leftovers can prevent these as well as other bacteria and microbes from growing.

Food contamination is a very important issue in today's health news and being aware of what you are eating can prevent someone from food poisonings. Around two decades ago rapidly arising public concern of the environmental safety was in full-blown affect. It could have been said to be an " environmental decade" (Fig. 5). During the 1970's the United States adopted many new environmental policies, procedures, laws, and created new institutions such as the U. S.

Environmental Protection Agency (EPA). The EPA was formulated to manage programs, and to find money in the government to increase spending for them. You find that most of the environmental quorums are public problems. Meaning that the problems can not be solved solely by private actions. Not to be said that individuals cannot do anything to help the environment, especially in local communities, but that there are definitely power in numbers.

The EPA programs cover many areas for the welfare of this country. Things such as protecting our water supply, air supply, supervising hazardous waste sites, testing toxic chemicals, and regulating pesticides that can enter our food storage. Before any pesticides or toxic chemical is sold in the United States, the EPA must approve the safety of the product, and set a limit to the amount that is allowed to be in the food that we consume. A chemical manufacturer devotes an average of nine years to chemical research,

toxicological analysis and field testing before a pesticide is submitted to the EPA for approval (Food safety address). One of the highest priorities of the EPA research and development program is the protection and human health through the identification and control of toxic substances. Many types of short-term test are developed to detect dangerous chemicals that could be cancer causing and linked to genetic disease (EPA).

Some of the most harmful disorders that have come of these chemicals are tumor formation, gene mutations, and DNA damage. The biggest tack that the scientists of today face are being able to distinguish the toxic chemicals from the non-toxic ones. All foods are analyzed by separate ingredients using EPA standards. For example, the amount of wheat flour, tomato, cheese, and other ingredients are estimated for a serving of pizza. With that estimation the EPA uses the data to see how much pesticides are taken in daily by individuals.

Their “ dietary exposure” to pesticides. To do this they have developed a special data base recognized as the Dietary Risk Evaluation System (DRESS) (Hazard at plate address). With this system the EPA can define and reduce the potentially hazardous pesticides in the diet of potentially sensitive subgroups. According to William Farland Ph. D.

, director of EPA’s office of Health and Environmental Assessment, if the DRESS analysis indicates any substantial risk may occur, then the EPA will not approve a tolerance for the items being tested. One case in which the EPA did not approve a tolerance due to specific dietary concerns involved the pesticide pydrin in 1985. New uses of the chemical on alfalfa and sorghum

were requested to be allowed, but were denied because of the potential risk to children from secondary residues in milk from cows eating such grains were unacceptable, and the agency denied the request (Plate address). Even though the EPA has accomplished much over the past 20 years they have not yet stopped or slowed down in their progress. They are still doing all they can to keep you, the consumer, safe from the environments impurities. In June of 1997 the EPA found Dioxin in the Tyson Chickens.

Dioxin is a generic name for a group of hundreds of chemical compounds, the most commonly known of which are toxic. Human exposure to dioxin has been shown to cause liver and nervous system damage, as well as skin disease such as chloracne (Haman 6/16/97). Everyone has some percentage of dioxin in their bodies, but the EPA says to a certain extent it can be unsafe. In 1883, the Chief of the Bureau of Chemistry of the United States Department of Agriculture, Dr.

Harvey W. Wiley, was getting fed up with what he considered blatant and obvious abuse of food and drugs. Merchants, road shows, and pharmacists (who bought from the hucksters for their stock) conned thousands of Americans into buying products which were said to heal, yet were very dangerous. Wiley decided to put a small staff together to investigate his theory. He and his peers found a high percent of alcohol in cures for gout and liver ailments; headache medicines contained coal tar mixed with sugar-flavored water (2). Since the U.

S. public was not properly informed of healing remedies, they believed that these medicines worked due to the soothing effect on the suffering

individual. Yet while these traveling merchants sold their products and skipped town to sell somewhere else, thousands of people were dropping dead from these products (2). Immediately after collecting his data, Wiley let his information be known to the U.

S. public, but he was unable to gain widespread support until 1906. Backed by a huge following of irate citizens, the Food and Drugs Act of 1906 was passed. The first act was rather simple-it stated that government has right to control local food and drug traffic that the federal government could not previously control. For 32 years the FDA quietly protected the U.

S. consumers, and maintained purity in America's products. However, they thought that they need more authority than they had. In 1938 the Federal, Food, Drug, and Cosmetic Act was passed. Under this act, the FDA no longer had to prove knowledge of intent in adulteration cases.

Many argued that this gave the FDA complete tyranny. The main duties created by this act are to see that the food we eat is safe and wholesome, the cosmetics we use do not hurt us, medicines are safe and effective. The FDA also protects the country's blood supply by routinely examining blood banks (1). Also, it ensures that products are labeled truthfully, and with useful information. Along with people, the FDA also regulates food and drugs for pets and farm animals. The FDA consists of 1100 investigators who cover the nation's 95, 000 FDA-regulated businesses.

These inspectors visit about 15, 000 facilities per year. Also, they inspect about 80, 000 domestic and imported samples for examination by FDA scientist's (1). If a company has violated any of the FDA's laws, this company

maybe encouraged to correct the problem or recall it from the market. If the company does not cooperate and correct the problem, the FDA can bring them to court and force them to stop selling the product and to have already produced items destroyed. About 3000 items per year are found to be unfit for consumer's (1).

The FDA is not responsible for doing research when approving new drugs; however, it does study the results done by the manufacturer. Once the drugs have been approved for marketing, the FDA must still collect tens of thousands of reports on that drug each year to monitor for any adverse reactions (1). The Food and Drug Administration is a very controversial department in the U. S.

It has been jeered for having too much power and even tyranny. However, if it was not created, we would not know what was in our food and drugs.

Overall, the FDA plays a very important and helpful role in our society today, by making our products safe for consumption. Although these agencies serve different departments, their number one purpose is to provide food safety to all Americans and therefore, they must work together at different points in times to meet this very significant goal. One instance in which the FDA, CDC, EPA, and USDA have joined together is the issue of the safety of fruit. Since fruit is usually grown outside on farms it serves the chances of people catching a disease from eating it.

For the past several years many illnesses have occurred because of produce. These illnesses include Hepatitis A virus believed to have come from strawberries in Mexico, salmonella in bean sprouts from the Midwest, and

Escherichia Coli associated with hamburgers not fully cooked. A few months ago the EPA warned people of Cyclospora, an infection caused from fruits and vegetables. The FDA and the CDC worked together with growers to improve sanitation practices on the farms in Guatemala, while the EPA held a meeting to find more information on cyclospora. The CDC also found the number of Americans becoming ill and gave a report on how to decrease the contamination of fruits (Washington Post, 7/8/97). Another instance in which the EPA, USDA, and the FDA worked together was with the discovery of toxic dioxin found in Tyson Chickens.

The chicken was sampled and tested by the USDA and the EPA for dioxin levels, chicken litter, soil, feed, and pesticide use at the Hill Top Farms in Star City (Arkansas Business, 6/16/97). Since the FDA is responsible for the safety of the nation's food supply and overlooks all aspects, it often works with the other three federal agencies individually to ensure safety to American consumers. The FDA often communicates with the CDC since foods tend to become contaminated with diseases and make Americans ill. The FDA also works with the CDC in such cases of how to fight germs in soaps, deodorants, toothpaste, and toys using germicidal product, in which both germs and the products can be harmful to the consumer (Orange County Register, 7/16/97). The FDA and the USDA both have the power to inspect, impose grades and standards, and establish rules regarding labeling. In years before the food manufacturers did not want to put nutrition labels on foods because they felt it would take a lot of work, time, and difficulty, but the real reason was it would make consumers aware of substitutes and contents in the foods.

The response after labeling was low fat and low sodium foods. Therefore because of the Nutrition and Labeling Act of 1990, which standardized food labels with ingredients, descriptions, and nutrient contents the USDA and the FDA research has shown that Americans are more aware of food contents and ingredients to better their health. The FDA also enforces laws over the EPA in determining the safety of pesticide products and setting tolerance levels for pesticide residues in foods. The FDA also sets guidelines regulating bottled water sold in interstate commerce for human use.

The President signed a Food Quality Protection Act of 1996 in August of 1996, which regulated pesticides by the FDA and the EPA to put important public health protection in place, especially for children. The EPA works with the USDA, due to the crops that need to be protected by sprays to prevent them from dying and causing disease. In 1994, the EPA has suggested banning aerial spraying of certain types of herbicides because they were believed to damage crops at a Shoreliani organic vegetable farm and can be hazardous to humans. The USDA recommended the suspended aerial applications of the herbicides until they determined what had happened at Shoreliani. Currently the farm has been closed down so that the EPA may test to see what exactly may be dangerous to the plants (Times-Argus 7/20/97).

The CDC will sometimes function with the EPA to study environmental health problems since most diseases can come from the environment, water, and pesticides. The CDC helps to direct and enforce national programs for the prevention and control of diseases transmitted by a host organism.