Almost every day we hear or read about chemicals in our food supply. Media reports detail the increased use of chemicals to produce and process our foods. Many reports are released about the danger concerning chemicals and the risk they pose to us and our families. With more attention being paid to chemicals in our foods, many consumers are becoming more concerned about the safety of the food supply. This concern is often unnecessary and leads consumers away from healthful diets to poor food selections.

Currently, many people propose that we produce chemical-free foods. However, they are unknowingly asking for the impossible, because foods are the most complex chemical substances people are exposed to each day. Since foods are 99 percent naturally occurring chemicals, it is impossible to have foods that do not contain chemicals. These chemicals will always be in foods.

It is important for us to understand the composition of our foods and know what risks and benefits come from them. The following information will address the concerns that consumers have about the safety of chemicals in our foods, describe how the chemicals that are added to foods are controlled, and discuss what most scientists feel is the real risk associated with our food supply.

**Chemicals Used In Food Production**

It is essential to use chemicals for food production. If chemicals were not used by farmers to help in both plant and animal production, there would not be enough food to feed the world’s growing population. Because of scientific advancements, our nation’s farmers can now feed about 79 people each. Without these advancements, such as improved fertilizers and pesticides, many people throughout the world would be without food.

Plants need certain nutrients to grow and produce fruit. Many also need help in fighting off weeds and insects so they may produce the most fruit possible.

The pesticides used to combat these pests are often almost identical to the natural pesticides that plants themselves produce.

Animals also need help to stay healthy and to produce to their maximum ability. Antibiotics are often given to animals to improve their health or to prevent illnesses. This practice is necessary because only healthy animals can provide us with safe animal products such as meat, milk, and eggs.

Many cattle are given growth promotants to help increase their efficiency in converting feed to lean meat. While these promotants are man-made, most occur in the animal’s body naturally.

The key to all chemicals used in both plant and animal food production is that the chemical, whatever it might be, must be administered according to the regulatory guidelines. These guidelines are established to assure that chemicals are applied in the correct amounts and at the proper times. Government regulatory agencies such as the Environmental Protection Agency (EPA) and the Food and Drug Administration (FDA) work extremely hard to assure consumers that these guidelines are followed by food producers and that unsafe chemical residues are not found in foods.

**Chemicals Used In Food Processing**

Many chemicals are used during the processing of foods. These chemicals are commonly referred to as food additives and include a wide range of substances. Most food additives serve to improve the use of a product, such as to increase the shelf-life or improve the taste and texture of a product. Sodium nitrite, which is added to processed meats, is used to make the product safe from *Clostridium botulinum* and to help in the development of cured meat color. Substances such as gums are often used in low-fat products to replace the effects of fats. Others are used in foods to enrich or improve the nutritional value of certain foods, such as vitamin D in milk and iodine in salt.
Certain additives are used just to make the foods look more desirable, such as the coloring agents which give the food its desired color. We must remember that the food companies would not add these additives to foods if we as consumers did not want the improved quality that they allow us to enjoy. After all, would you rather have a nice appealing piece of food or just an unattractive, colorless, tasteless lump of food?

Like the chemicals that are used in food production, food additives are regulated very closely in processing by government regulatory agencies, primarily the Food and Drug Administration (FDA) and in meat products the United States Department of Agriculture (USDA).

Foods Are 99.99% Natural Chemicals

Without ever being touched by man, all plant and animal foods are made up completely of chemicals. The fats, proteins, carbohydrates, vitamins, and minerals in foods are all complex chemical compounds. Not all of the chemicals in food products have been identified, but there are estimates that foods contain as many as 100,000 different natural chemicals. The question is, with this many different chemicals in foods, are they all safe? The answer to this question depends on which chemical, how much of the chemical is present, and who is consuming the chemical. Some of the chemicals found in our foods have been shown to be dangerous in large amounts. However, in the small amounts that appear in foods consumed in a normal diet, they generally present no threat to the average person.

Some people, however, are more sensitive than others to certain chemicals, such as sulfites, and must be careful to avoid the few foods which may be high in sulfites. In addition, young infants are often sensitive to chemicals like nitrates which are found in many green leafy vegetables and should not be fed these foods until they are six months old. Therefore, it is important to realize that certain chemicals can affect people differently or maybe even not at all.

Many times, chemicals such as aflatoxins, which have been shown to cause cancer, do not occur naturally in healthy plants, but occur as by-products of molds which grow on grains and nuts due to poor growing or storage conditions. These types of chemicals must be screened carefully to assure that they never reach the food chain. Cooking often breaks down or destroys many types of chemicals which may be in foods.

Although there are some naturally occurring toxins in many foods, the levels at which they are consumed in a balanced diet are generally considered safe for the average person. These levels are monitored closely by both the food industry and government regulatory agencies to assure that safe levels are maintained for consumer protection.

How Safe Are These Chemicals

Every chemical substance that is used in the production and processing of foods is tested thoroughly by both the company developing the product and by the various government regulatory agencies to assure consumers that the final product is safe to eat. Only after the substance has been approved may it be used in food production and then only at levels many times lower than those determined to be safe. This extra safety factor assures us that there is no danger from using chemicals in our foods.

For consumers who are still concerned about chemicals in their foods, the following points may be of interest:

- Read labels to know what is in the food you buy.
- Contact food processors and ask for a list of foods with a limited number of chemicals.
- Be informed. Realize that chemical-free foods do not exist.
- Know that food safety is an important issue and that everyone must do their part.

However, all consumers must realize that there is a danger associated with our foods that most people tend to ignore, that of microbial foodborne illness. Although foods are inspected for bacteria just as they are for chemicals, many times foods are mishandled at home allowing bacteria to become a problem. For more information about how to avoid microbial foodborne illness, ask your county agent for a copy of Circular HE-610, “Food Safety.”

References
