

FROM FARM TO FORK:

QUESTIONS AND ANSWERS ABOUT MODERN FOOD PRODUCTION

With an increasing focus on nutrition and health by American consumers has come greater curiosity about where our food comes from and how it is produced. Concerns voiced in the media center around the safety and health of the U.S. food supply, which food manufacturers increasingly utilize modern technologies to produce. The following Q&A provides a brief glimpse into some of the most common questions about modern food technology and its impact on food safety, nutrition, health, and the environment.

How has technology improved the way food is produced?

The use of technology in modern agriculture began with the replacement of the horse with modern tractors, combines, and cotton pickers after the turn of the 20th century. The next revolution in crop production began in the 1930s with “hybridization” of crops, or the breeding of select crops to produce desirable characteristics not typically found in the original crop. As a result, crop yields have increased from 25 bushels per acre in 1930 to more than 140 bushels today. During the 1940s came increased availability of fertilizers to further increase crop yields, and in the 1950s we saw the introduction of herbicides, insecticides, and fungicides to help control weeds, insects and diseases that can reduce crop growth. In the mid 1990s, the introduction of food biotechnology helped to increase the quantity and quality of the foods we grow by making them tolerant of pesticides and preserving nutrients and other desirable traits. As with other industries, farmers have had much to gain from the availability of computers, software, satellites, and the Internet. Such technologies enable farmers to practice what is often referred to as “precision agriculture,” which gives them the ability to more effectively use crop inputs such as fertilizers, pesticides, tilled or cultivated land, and irrigation water. More effective use of these inputs means greater crop yield and/or quality, without polluting the environment. Additionally, since 1930, the time necessary to produce a bushel of corn has decreased from more than 30 minutes to a fraction of a minute in 2002. Consumers are the major beneficiary of all of these developments. The Government Accounting Office (GAO) reported in June 2009 that household spending on food decreased from 13% of disposable income in 1982 to 10%, which is significantly less than the 25% of income Americans spent on food in the 1930s.

How does the safety of today’s U.S. food supply compare to 50 years ago?

The U.S. food supply is one of the safest in the world, and it is safer today than it was 50 years ago. Food safety is the primary goal of all food and beverage producers. Detection of foodborne pathogens was once limited to time-consuming laboratory tests; however, today many newer technologies, such as Hazard Analysis and Critical Control Points (HACCP), make detection easier than ever before. In addition, bacteria-removing procedures such as food irradiation, anti-microbial washes, and bacterial sprays, enable the rapid removal of potentially harmful substances from foods before they are shipped to the store. The U.S. Centers for Disease Control and Prevention (CDC), which is in charge of tracking foodborne illness outbreaks, reported that the number of *E coli* O157:H7 cases declined by 40% between 2000 and 2007, and the incidence of listeriosis declined 10%. While the total number of *Salmonella* cases from all food sources increased between 2007 and 2008, the U.S. Department of Agriculture (USDA) says it has seen a significant reduction in the presence of *Salmonella* in raw meat and poultry since the development of its Salmonella Initiative Program in 2006. In response to the increase in *Salmonella* cases, CDC says it plans to “increase the capacity of several health departments so that outbreaks can be better detected and investigated.” (CDC, April 9, 2009) While improvements can always be made, the U.S. food safety system is regarded globally as the gold standard for food safety.

Are processed/pre-packaged foods contributing to obesity, diabetes, and cardiovascular disease in the U.S.?

The American Dietetic Association's (ADA) position statement on the "Total Diet Approach to Communicating Food and Nutrition Information" states that the total diet is the most important focus of a healthful eating style. This type of approach to eating, rather than focusing on specific nutrients or foods, can help reduce consumer confusion about food and health. All foods can fit into a healthful diet if consumed in moderation and along with regular physical activity. Classifying certain foods or food categories as "good" or "bad" may foster unhealthy eating behaviors.

Can organic farming alone feed the world's growing population?

No. In a report by the Deutsche Bank Climate Change Advisors, produced in collaboration with The Nelson Institute's Center for Sustainability and the Global Environment at the University of Wisconsin, Madison (June 2009), organic farming was singled out as having the potential "to contribute substantially to the global food supply while reducing environmental impacts." However, it questioned whether the organic methods currently in use can be used on a large enough scale to feed the growing population. "The caloric needs of the planet will soar 50% by 2050." With the global population expected to reach nine billion by 2050, investment in both genetically engineered crops and organic farming could help to ensure a reliable food supply.

Can I consume a nutritious diet on a limited budget?

Yes. The U.S. Department of Agriculture (USDA) offers a program called the Thrifty Food Plan (<http://www.cnpp.usda.gov/USDAFoodPlansCostofFood.htm>), which serves as a national standard for consuming a nutritious diet at low cost. It provides cost-effective meal plan options that people of specific age and gender groups can consume at home to maintain a healthful diet that meets current dietary standards. The cost of the meal plans for each age/gender category is calculated based on average national food prices, adjusted for inflation. Based on 2009 data, a family of four earning less than \$3,300 per month (or less than \$40,000 per year) could purchase the necessary foods and ingredients to prepare and consume 21 nutritious home-cooked meals (that's three meals per day) for just \$117.50 per week.

For more information on modern food production, visit the [Agricultural Practices & Food Technologies page](#) of the International Food Information Council Foundation Web site, www.foodinsight.org.



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