

## Food Technology: Equal Partner for a Healthy Future

To improve their lives, consumers worldwide grasp at new technologies like a drowning person to a raft. In the United States and the developed world, we routinely work on PCs or Macs, listen to our MP3 players, and search out “apps” on our handheld devices. When going out to dinner, we use a GPS system to find the restaurant. And in developing countries, many of these technologies also are used; all are envied and sought after.

Now consider the extraordinary case with food technology. President Obama’s wife Michelle tends a White House vegetable garden, which is a wonderful activity to show people where food comes from. But she contends that doing so allows us to avoid processed foods. In effect, she is telling us to avoid food technology.

Food technology is not a pejorative term. Why is it that consumers and many health professionals in the developed world treat it that way while all other technologies are viewed as a boon to humankind? Imagine the uproar if we insisted on the use of manual typewriters, overheads, 2 x 2 slides, chalkboards, and 78 rpm records.

There is a yearning for the world which author Michael Pollan so eloquently describes in his books *The Omnivore’s Dilemma* and *In Defense of Food*. Please understand that no one is going to argue the nutritional virtues of fruits and vegetables picked in your own backyard,

rushed to the kitchen, and eaten. However, most consumers don’t have a garden or year-round growing climate and must depend on the supermarket.

Fresh produce takes about 21 days to travel from the field to the supermarket (one shudders at the carbon footprint) but only hours to get from the field to the processing plant for freezing or canning. As a result, the processed products are often superior in nutrition and flavor to what we call fresh in the supermarket.

It is an often overlooked fact that the food industry produces

the food we eat. This leaves us with the inescapable conclusion, though a revelation to many, that in order to change the food supply, *we must work with the food industry* to produce the most nutritious and best-tasting, healthy foods possible.

Technology at its best is an optimization of what we do in the kitchen and in nature. Consider the process for making honey. The bee ingests nectar, adds invertase (a nonnutritive food additive) in its gut, and then regurgitates the resultant mixture in the hive. Other bees ingest and further refine it in their guts prior to regurgitating the final product into the honeycomb. There is nothing wrong with honey, although it is recommended that toddlers not eat it as it may contain spores

of *Clostridium botulinum*, a deadly pathogen. But modern technologies would never use such a process, nor be allowed to by regulatory agencies, for many reasons including food safety.

A lack of understanding of food technology and its many contributions is even evident in the Dietary Guidelines Advisory Committee, which I was privileged to serve on in 2005. There is generally only one food scientist selected for the Committee who is thought of mainly as a contributor to food safety. This is shortsighted

functional qualities and nutritional profiles, use the proper balance of macronutrients, decrease caloric density, create fresh foods in new forms, and utilize food as a vehicle to carry physiologically significant bioactives in a stable and bioavailable form. And, finally, through research at the genetic, molecular, and technological levels, we may be able to bring personalized nutrition to consumers in the future.

Why limit the bounties of technology only in the area of food? After all, in Massachusetts a hundred years ago, there

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at best. The Committee should have more food scientists and undergo a structural change involving a different charge from Congress. Since the guidelines aren’t followed by most people, the Committee could be charged to recommend more appealing foods and diets achieved, in part, by utilizing technology. We must emphasize nutrition, sensory quality, food safety, convenience, acceptance, and cost whether food be whole from nature or processed and formulated.

How can technology achieve this? Safety, flavor and taste, convenience, and cost may be self-evident. However, nutrition may not be as obvious. Technology could increase nutrient density through breeding and/or fortification, create fats with the proper

was not much else but salt cod and beans to eat in winter. We have certainly improved our diet by utilizing technology.

The Earth is adding 100 births every 42 minutes and we owe these new global citizens the benefits of technology to provide enough food. Instead of deriding technology, let’s take advantage of it so that we can have a modern food supply for a modern world which includes both fresh and processed healthy foods at a price that people can afford and in a form that’s appealing, convenient, and safe. **FT**

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