



**BENCH SCIENCE** Unlike the Flavr Savr, the first transgenic tomato, which was recalled in 1997 amid bad publicity, now seeds and breeds resilient to climate change and suitable to local and regionally based markets are on the research menu at a growing number of plant science institutions across the United States.

**BUMPER CROP** Honeybees don't pollinate tomatoes because they can't get the pollen, and the flowers don't produce nectar. But recent studies show that many native bees know the trick to extracting tomato pollen, and the plants they pollinate produce larger and more numerous fruit. Growers can attract more native bees through biodiverse hedgerows and intercropped planting.

**BLISSSED OUT** Michael Moss's 2013 *New York Times Magazine* story about engineered food brought widespread attention to the "bliss point," a magic combination of salt, sweet, and flavor common in marinara sauce formulations and snack foods. The taste compels eaters to want more, even if they aren't hungry.

**HEALTHY KIDS** In 2010, the U.S. Congress passed the Healthy Hunger-Free Kids Act, which updated the rules regarding the nutritional standards of the National School Lunch Program (NSLP) and other child nutrition programs, resulting in increased access to fruits and vegetables for millions of children.

**LUNCH LINE** No, the USDA didn't literally declare pizza a vegetable in the final 2012 rule on the NSLP nutrition standards. Rather, the ruling over-valued the portion size of tomato paste that constitutes a vegetable serving, keeping it possible for pizza manufacturers to produce a product that schools can declare as containing one vegetable serving.

**RUBBISH** Tomato waste is full of untapped nutritional goodness, yet every year around four million tons of tomato by-products are tossed out in Europe alone. Researchers have found that the skin and seeds could be a nutritious food additive. A new process for removing impurities from tomato sludge could also keep mountains of tomatoes out of the waste stream.

**FIGHT THE BLIGHT** Late blight, a disease that has been plaguing East Coast tomato plants with increasing frequency, has been monitored and managed with the help of plant breeders, researchers, and product developers. Organic growers, who do not use chemical fungicides, are especially vulnerable to this pathogen, and many have successfully avoided blight-caused damages and losses thanks to the creative work of plant pathologists and biologists.

Compiled by Ann Brody Guy with Maywa Montenegro and Sally Smyth  
 TOMATO PHOTOS: iStockphoto

# ANATOMY OF A TOMATO

Where does your food come from? We follow a single item from farms to schools, stores, restaurants, processing plants, and even bookstores.

**MACHINERY** After the mechanical tomato harvester was introduced in 1960 and California tomatoes were bred to meet its needs — with tough skins and simultaneous ripening — nearly all the state's tomato crop was converted to machine harvest. The result was a split in the tomato business that still persists: California growers process almost all the canned tomatoes and tomato paste consumed in the United States while 90 percent of the more strenuous, lower-paying salad-tomato picking jobs moved to Florida.

**EXPOSÉ** In his book *Tomatoland* (2011) and numerous articles and media appearances, Barry Estabrook documented the working and living conditions of Florida tomato workers, which range from extreme poverty to outright slavery.

**SMALL VICTORY** The Campaign for Fair Food, a partnership effort between Florida farmworkers and consumers urging corporations to engage in fair and safe labor practices, succeeded in getting major food buyers, including Taco Bell, Pizza Hut, McDonald's, Whole Foods, and Trader Joe's, to agree to a 1¢ raise and a pledge that no worker who picked their tomatoes was being exploited.

**TOXIC CLOUD** The official Florida guidebook for commercial tomato growers documents 110 different chemicals that growers can spray on tomato fields. In *Tomatoland*'s "Chemical Warfare" chapter, Estabrook documents numerous birth defects and illnesses associated with tomato pickers routinely exposed to these chemicals.

**LEGAL HURDLES** Small and mid-size farmers worry that the Food and Drug Administration's well-intentioned Food Safety Modernization Act will conflict with their use of water and environmental conservation practices, including the use of hedgerows and diverse cropping strategies. Likewise, the new regulations could require capital investments that are out of the reach of some small and mid-size food processors.

**CHECK, PLEASE** That caprese salad on your plate might have been served by someone earning \$2.13 an hour, the federal minimum wage for tipped workers. Seven of the ten lowest paying jobs in America are restaurant jobs, resulting in food service workers having twice the food stamp usage and three times the poverty rate than the rest of the U.S. workforce.

**GESUNDHEIT** Two-thirds of all food workers report cooking or serving food when they are ill — most food service workers don't receive paid sick leave and can't afford to miss work. The public health implications are quantifiable: 90 percent of food-borne illnesses in the United States can be traced back to sick food workers.

