

## Agriculture/Food Industry

The agriculture and food industries saw their beginnings more than 10,000 years ago and have easily become the world's largest industries, according to World Wildlife Fund. They employ more than one billion people and generate over \$1.3 trillion dollars worth of food annually.

Along with food cultivation comes food safety and control of foodborne disease outbreaks. In 2014, the Centers for Disease Control and Prevention (CDC) monitored between 20 and 40 potential food poisoning or related clusters each week and investigated more than 220 multistate clusters.

From E. coli to salmonella, it is widely known that these types of bacteria have the ability to spread quickly. This year, the National Inventors Hall of Fame will induct two inventors who enhanced our understanding of microbiology and bacteriology and continue to influence bacteriologists and microbiologists today.

In addition, the National Inventors Hall of Fame will honor a pioneering woman inventor in the area of water control and irrigation. As the United States Department of Agriculture works towards shining a light on women in agriculture through their #womeninag campaign, the National Inventors Hall of Fame will in tandem honor the past and influence the future of women in agriculture.

### John H. Silliker & Welton I. Taylor

While working at Swift & Company, John Silliker met Welton Taylor. Swift, a food processing company, had experienced a salmonella outbreak in a dried egg yolk product meant for babies. Together, Silliker and Taylor developed a highly accurate method to test egg yolks for salmonella, a method that is still used today in labs around the world. The two also co-authored five papers on the role of salmonellae — the bacteria that causes salmonellosis food poisoning — and food safety.



**John H. Silliker** is globally recognized in the food industry for his fundamental and extensive contributions to the field of microbiology in preventing bacterial contamination of processed food. In 1961, Silliker left Swift & Company as Chief Bacteriologist and Associate Director of Research. He taught for several years, became chief microbiologist of the pathology department at St. James Hospital in Chicago and in 1967, founded Silliker

Laboratories, Inc. The company met with great success and became a leader in food safety testing and quality assurance with facilities in 45 locations in 16 countries. In 1997, Silliker was acquired by Mérieux NutriSciences Corporation.

In addition to his food safety patents, Silliker authored over 85 microbiology papers and received a number of awards and honors. A native of Canada, Silliker earned B.A., M.S., and Ph.D. degrees in bacteriology from the University of Southern California.



**Welton Taylor** was a globally-renowned clinical research microbiologist, educator, and inventor. During his career, Taylor advanced microbiology in outstanding and lifesaving ways. He developed rapid and effective methods for identifying the presence of three types of bacteria — including salmonellae — that cause food poisoning, methods eventually adopted by health care officials worldwide to

safeguard processed food. The World Health Organization, interested in Taylor's understanding of the family *Enterobacteriaceae*, requested his assistance at Central Public Health Labs in Colindale, London, England, and l'Institut Pasteur in Lille, France. The Centers for Disease Control named *Enterobacter taylorae* in honor of Taylor and his colleague Dr. Joan Taylor (no relation).

Taylor's patents and an estimated 40 published papers not only broke new ground, but formed the basis for further microbiological and bacteriological progress and continue to influence bacteriologists and microbiologists today. He earned his B.S., M.S., and Ph.D. degrees in bacteriology from the University of Illinois, Urbana-Champaign.



### Harriet W. R. Strong

Harriet Strong received a patent in 1887 for her invention of a system of dams and reservoirs for water storage and flood control. Her system consisted of a series of dams placed in succession so that the water in a lower basin would act as a brace for the dams above. The system also allowed for the collection and

saving of water until it was needed. Strong's legacy as a pioneer and innovator of water irrigation and conservation techniques significantly contributed to the development of Southern California as a major agricultural region.

Following her husband's death, Strong became the sole owner of an estate in San Gabriel Valley. She managed and developed the land while studying farming methods, horticulture, and water control. She planted prizewinning English walnut trees, oranges, pomegranates, and pampas grass, and drilled artesian wells and installed a pumping plant to sustain the crops. Strong's innovations in dry land irrigation and techniques in water conservation enabled her crops to provide profitable returns despite being grown on semi-arid land.

Strong was educated at the Young Ladies' Seminary of Miss Mary Atkins, now Mills College, and was also self-taught. She earned five patents in her lifetime, and her achievements established her as an authority on water control and irrigation. Following her death, two federal projects came to pass, both based on Strong's pioneering work: the Hoover Dam and the All-American Canal. In 2001, Strong was elected to the National Women's Hall of Fame.