





## Advances in Foodservice Technology

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*Chief Roddey*

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### Our Objective

- Understand the influences of technology on the equipment that is used in kitchens
- Become familiar with how foods have been influenced by technology
- Determine which technologies fit your operation

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### Delivering the Concepts

- Lets take a walk through food history
  - Food in History, 1988; Reay Tannahill
- Stepping into our modern kitchen operation
- Foodservice management & operations
- Our advancements in food

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## How About a Little History..

- Around the 1850s began the Food Supply Revolution partly fueled by the railroads
  - More workers, more food
  - Butchers dressed animals carcasses for sale
- Before the 1860s milk was supplied by local farmers
  - Less grazing due to more building
  - Milk supplies moved away from the local farmer
  - Result in poor quality milk, cheats, germs, mud, etc
- Mechanical cooling of milk began in the 1860s

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## American Wheat

- Between 1860-1900 400 million acres were cultivated
  - There were no concerns for soil conservation
  - In 1840 223 man hours for 100 bushel of wheat
  - In 1920 87 man hours for 100 bushel of wheat
- This efficiency is due to....

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## 1834 McCormick Reaper



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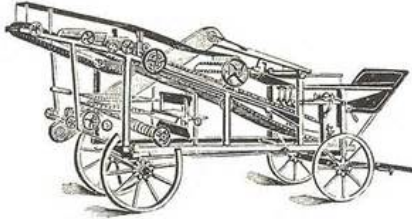
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### 1873 Pitts Thresher



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### 1858 Marsh Harvester



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### 1870s Appleby Binder & Knotter



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## Food Preservation

- 1900 Nicholas Appert introduces canning
- Freezing & chilling practical quantities of ice
  - Used by Chinese in ice houses, chilled by evaporation
- 1850s James Harrison designed and improved ether compressor opening an ice business
- Cold storage was a side effect of freezing
  - Bridged to storing meat, eggs, fruit, vegetable & dairy
- 1860s/70s Steam Trawler was introduced for hold and transport of fish

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## 4 Major Influencers of Today

- Cooking Stoves
- Cookbooks
- Restaurants
- The Rise of the Brand Name

**YOU WILL NEVER  
INFLUENCE THE  
WORLD BY  
TRYING TO BE  
LIKE IT.**

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## Cooking Evolution

- Until early 19<sup>th</sup> century we cooked on open fire pits or primitive brick ovens heated with coals



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## Cooking Evolution

- 1795 the first stove was invented as a means to feed the poor in Munich. It was then scaled down for home use using many flues, dampers and metal plates



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## Cooking Evolution

- Solid fuel stoves were in general use in the 1860s
- Gas stoves introduced in the 1880s



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## Cookbooks

- The 19<sup>th</sup> century cooking books introduced
  - 1845 The Modern Cook
  - 1845 Modern Cookery for Private Families
  - 1861 Book of Household Management
- 1896 Boston Cooking School Cook Book
  - Fannie Merritt Farmer one of the schools founders
  - The Fannie Farmer Cooking School Cook Book Standardized precise measuring that we see in cook books today

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## Rise of the Brand Name

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- The 1850s initiated Brand Names
  - Seal of quality & consistency
  - John Kellogg introduced peanut butter, granola & wheat flakes
  - Henry Perkey brought Shredded Wheat
  - Will Kellogg brother of John Kellogg introduced corn flakes
  - Product brands such as Grapenuts & Post Toasties
  - Also manufacture brands such as Kelloggs, Borden, Swift & Armour

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## Science Revolution

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- 1850s vitamins discovered by the Dutch
- 1905 Professor Pekelharing confirmed that unrecognized substances did exist
- 1950s the general picture of food values was established



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## The First Green Revolution

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- 1960s Experiments in Mexico cross-breeding plants
- 1960s International Rice Institute in the Philippines sought to find a rice as great as top wheat crops
  - Due to the fertilizers and pesticides being use killed the fish

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## Additives or Adulterants

- WWII marked the era of adding back into foods what manufacturing had taken out
  - Flour - specific proportions of iron & Vitamin B
- The trend really kicked off in the 1960s with the emergence of convenience foods
  - Canned, dehydrated, freeze dried & frozen
- The 60s & 70s saw the emergence of risky additives
  - MSG, saccharin, nitrates & nitrites
- 1977 USFDA banned saccharin cancer causing

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## And Finally

- Pests & pesticides
  - 1940s Chemicals
  - Natural predators
- 1980s spurred The 2<sup>nd</sup> Green Revolution
  - Genetic modification of plants
  - Why?

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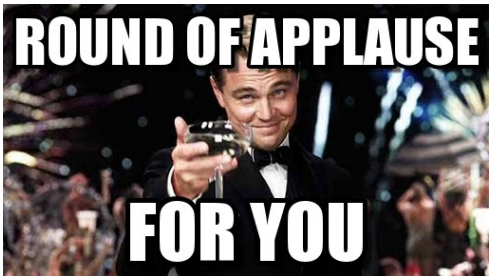
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## History Lesson - Check



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## Foodservice Kitchens Today

- Stove Advancements
- Oven Advancements
- Steam Technology
- Blast Chill/freeze
- Cook-Chill Capabilities
- Holding Systems
- Processing Equipment



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## Foodservice Management

- Food & Production Software Systems
  - Menu Management
  - Recipe Programs
    - Production Recipes
    - Nutritional Analysis
  - Product Tracking
  - Production Logs
  - Temperature Tracking



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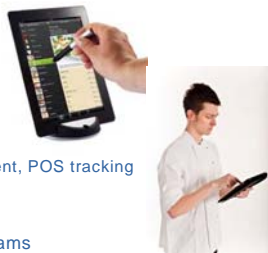
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## Technology Applications

- Order Systems
  - Tablet menus
- Phone/tablet apps
  - Consumer/Customer
    - Orders, menus, specials
  - Chefs
    - Recipes, table management, POS tracking
  - Mobile payments
  - Social media
  - Marketing & loyalty programs



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## Cost Control Systems

- Purchasing
- Inventory Control
- Food Costing
- Labor Tracking



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## Foodservice Operations

- Food Transport Capabilities
- Hot Food Hot
- Cold Food Cold



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## Sanitation

- Equipment
- Color/ingredient specific applications
- Natural or green products
- Ultraviolet sterilization
- Biodegradable supplies



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### Food We Use Today

- Allergen-free food
  - Non-wheat noodles
    - quinoa, rice, buckwheat
- Pasteurized food
  - Packaged
- Irradiated food
  - Meat, produce, juicing, parasites, spices
- Ethylene gassed food
  - Tomatoes, citrus, bananas



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### Foods We Use Today

- Ancient Grains
  - Kamut, Spelt(Frika), Amaranth, Quinoa, Millet, Triticale, Einkorn/Emmer/Farro, Teff, Sorghum
- Micro Greens
  - Among the 25 microgreens tested, red cabbage, cilantro, garnet amaranth, and green daikon radish had respectively the highest concentrations of vitamin C, carotenoids, vitamin K, and vitamin E.
  - In general, microgreens contained considerably higher levels of vitamins and carotenoids, about five times greater, than their mature plant counterparts, an indication that microgreens may be worth the trouble of delivering them fresh during their short lives
    - USDA Agricultural Research Service



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### Foods We Use Today

- Micro Vegetables
- Seeds
  - Chia "Strength"
  - Flax



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## Hybrid Produce

- Plumcot
- Broccoflower
- Grapple

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## Exotic Fruit

- Rambutan
- Dragon fruit
- Paw paw
- Guava






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## Summing It Up

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- Become familiar with how foods have been influenced by technology
- Determine which technologies fit your operation

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**Thank You for Your Attention**



*Chief Rolling*

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