

The Fight for Safe Food in America

A story of greed, cheating, harming people, and bitter political wrangling

VERUS

A tenacious Government Head Chemist and America's Women

In the late 1800s into the 1900s

Read this true story out loud. Don't rush, vary your voice and tone, be expressive, be engaging like you are telling the story to a classroom of eager listeners who want to know what happens next.

Allow the group to answer the questions the lesson asks.

What your group will need to make the first recipe.

Old milk bottle or something similar

Clear pitcher that holds 6 to 7 cups

A pint jar

Long handled spoon and a smaller spoon

Old looking bucket with quart of warm water in it

Long handle dipper

Quart of 2% or skim milk

Couple of tablespoons of molasses

Small container of pale yellow tinted Cool Whip.

Your lesson packet should contain a small bag of Plaster of Paris

As you read the directions out loud to the group let them figure out how to use the dipper to fill the pint jar, start with a small amount of Plaster of Paris until the milk looks like whole milk. Same with molasses. Have them pour their milk into the old milk bottle, then someone can swirl the calf brains on top.

Anne Engen, District III Director 2021

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Were your grandparents, or great grandparents raised on a farm?

Did they grow gardens of healthy vegetables and raise cows or hogs for milk and meat?

If they did they might have been spared some of the horrors you are going to hear about in this lesson. Their danger was, how close was the outhouse to the family's well.

Life in the 1800's and early 1900's could be a hard scrabble existence.

If you lived back then – would you have liked to make some extra money?

In the late 1800's there were no laws stopping people from adding anything to the food, spices or drink they were selling – a little sawdust, roasted bits of coconut shells for texture, borax, coal-tar or ground insects for color, formaldehyde and other chemicals.

Here is a simple recipe for making MONEY off of selling milk in the city. Lets make it.

Have group put together these ingredients in a clear pitcher, pour into old milk jar.

*Then ask the questions about their bucket and spoon. **Do not drink this milk.***

1. Skim off pale yellow cream and sell it for more money.
2. Add 1 pint lukewarm water for every quart of milk.
3. Add some Plaster of Paris for whitening (blueish milk doesn't sell).
4. Add dollop of molasses for creamy color and a little sweetness.
5. Top bottle with squirt of, not cream, but pale-yellow pureed calf brains.

Sell your 'milk' to the poorest families in the city whose hungry children end up undernourished. Shame on you! Every year thousands of children died across the country from altered and bacteria laden milk. How clean was the bucket you dipped your warm water out of? Used clean spoon to stir and add the unrefrigerated pureed calf brains? Do you think this fraud could have happened in Portland? Yes it did.

Here are more money-making schemes and recipes from that time.

Strawberry Jam – Mash apple peelings, add grass seeds & red dye.

Vanilla extract – Mix brown food coloring with alcohol.

Coffee – Here you have choices, gather wheat, beans, beets, dandelion seeds, peas or sawdust. Scorch it black, and grind it so it looks like real ground coffee. Your mug of 'coffee' will have a lovely shade of brown.

Flour – Goes further when mixed with a little crushed stone or gypsum which is a mineral. Or use cheaper corn flour whitened with sulfuric acid. 1

The United States was the only Western Country without a national law regulating food safety.

By the end of the 1800's, the rise of industrial chemistry brought about new chemical additives and compounds. Formaldehyde was used to embalm the dead, but could also preserve milk and turn decaying meats in Butcher's Shops or warehouses into something that looked tempting to buy for the family. Guess what Formaldehyde did for old, sour milk? It gave milk a slightly sweet taste which masked the tang of the sour milk. Who wants to lose money on leftover milk or meat, even though children died.

In the state of Indiana an estimated 400 children died from embalmed milk, meaning it had Formaldehyde in it, before the state passed its own Pure Food Law in 1898.

Synthetic dyes made from coal by-products could brighten the dull colors of your food and drink. Manufacturers could substitute saccharin for sugar, acetic acid for lemon juice, make aged whiskey and fine wines from lab created alcohol, dyes and flavors. Making food and drink taste, smell and look like something it was not! Not healthy.

For years in England, candy makers used poisonous metallic elements to decorate birthday cakes. Green leaves on the cake came from arsenic or copper, yellow was lead chromate, red lead gave the cake rosy flowers. Children were sickened and some died. Nothing was done about this practice until 21 people died after eating candy accidentally laced with deadly arsenic. England passed the 1860 Act for Preventing Adulteration in Food and Drink. Businesses who cheated had to pay a low fine.

BUT WHO WAS PROTECTING AMERICA'S FOOD?

Where is our Hero in this story? Well, he was born in a log cabin in Indiana on April 16, 1844, the sixth of seven children. At age 10 he helped his dad plow and plant a new crop, sorghum cane. He was fascinated that boiling down the grassy grain's juice it became a sweet syrup. He left college after one year to join the Union Army during the Civil War. He and his fellow soldiers were felled by not bullets, but a plague of measles. He returned home, went to Medical College, graduated, then found he was not fond of sick people. He taught school, then went back to college, this time at Harvard University to get a degree in Chemistry. Because he knew so much already they awarded his degree after a few months of classes.

Meet **Harvey Washington Wiley** who spent his life fighting for food safety in America. He may be one of the reasons you aren't sick right now.

Harvey was tenacious! **And you probably have never heard of him.**

1874. Wiley's first job was being Purdue University's first and only Chemistry Professor. He analyzed anything that someone brought to him, rocks, soil, the quality of water and lots of foodstuff. He's a tall, skinny, inquisitive 30 year old bachelor.

1878. He spent his sabbatical studying in the new German Empire. Bringing back new specialized devices for analyzing food chemistry which his boss scoffed at and made him pay for these crazy devices out of his own pocket.

1881. Wiley remembered how as a kid he boiled down his dad's sorghum to make syrup. He devised a better process. He was asked then to look into the purity of commercially sold honey and maple syrup. Seemed to be too easy to use the new cheap corn syrup, add some coloring and label it Fancy Maple Syrup. He also uncovered that some honey never saw a bee, and some 'beekeepers' no longer had beehives.

Wiley stood up for truth and made powerful enemies.

One Purdue College trustee looked down his nose at Wiley, saying “progress is the “devil's” tool, others said Wiley rode a high-wheel bicycle to campus wearing knee breeches. Wiley was seen playing baseball with students. Oh my! Wiley had had enough, he packed his bags and moved to Washington DC.

1883. Wiley became the first *Chief Chemist for the Agriculture Department*. He rented a room with a family staying with them for 20 years even helping their children with their homework. The government gave him and his team a small lab in a damp, stale basement. The chemists in late 1800s earned about \$600 per year. Their funding for projects went UP or Down with every new Secretary of Agriculture.

1885. First project for the chemists, look into the purity of dairy products. They found much of the butter in markets had nothing to do with dairy products as their microscopes revealed the crystal make up of the fake butter.

Let's Play A Guessing Game about what is really in this so called butter.

In France oleomargarine was made of Olive oil, in America it was made of what?

Let your group guess. *Beef tallow and finely ground animal stomachs.*

How about this product called **Suine**? Sounds fancy doesn't it. *Made from suet.*

Would you buy **Lardine** for your family? *Pork fat, by-products of slaughter houses.*

Armour & Swift had a more appealing name they borrowed from England, **Butterine**.

Salesmen said you can't tell it from butter, yet a third of what was sold as farm fresh butter was fake. Really just oleomargarine which animal parasites could survive in.

Butter Act of 1886: Define butter as made exclusively from milk or cream with possible addition of dye or salt. False labelers could be fined \$1,000.

1887-1892. Spices, Teas, Cocoa, and Coffee. Powdered mustard was 100% adulterated. Ginger was burned shells, cracker dust, ground seed husks and dyes. Pepper was mostly charcoal and sawdust. Cayenne pepper had bits of red brick dust. Teas might have some real tea leaves, rest could be rose, beech, willow, or poplar leaves. Cocoa was stretched with clay, fine sand, iron oxides, dusted with finely powdered tin.

About 87% of all coffee samples had been adulterated or had no coffee at all. Someone had the bright idea to mix flour, molasses, bit of dirt, chicory or sawdust, press into small molds to make fake coffee beans. These dried coffee pellets to be stirred into barrels of real coffee beans to increase earnings. Light colored, cheap coffee beans could be darkened with charcoal or powdered iron then polished with the new product called Vaseline. Wow, you now had expensive looking Java coffee beans.

Wiley's and his growing team published USDA Bulletins year after year for the public.

1897. Harvey Washington Wiley was now 53 years old. He saw a young woman working in the USDA library and was smitten. He grabbed the arm of the library manager asking "Who is that? I'm going to marry that girl." The manager replied, "Perhaps it would be well for you to meet the young lady before proposing". Her name was Anna Kelton, nickname, Nan, a 21 year old college graduate. They politely dated but Anna's mother thought him too old. And that was that! Wiley was crushed.

1898. Spanish American War in Cuba. Combined manufactures pumped out tin cans of cheap beef and fat scraps, cutting back on salts to preserve, (some using formaldehyde) sealing the cans with lead and shipping the cans to very hot, humid Cuba for our troops. Wiley's team was asked to help answer why a 19 year old private died after eating a tin of corned beef. His meal can was full of neurotoxic metal lead, which had seeped out of the container. Lead solder was the popular way for sealing tin cans but the U.S. set no standards on amounts of lead or copper. Europe regulated lead levels in cans.

Wiley was now able to freely release his findings on lead, and his writings appeared in scientific and popular magazines.

1901 -1903. The rise of big companies. DOW CHEMICAL made food preservative. PFIZER -borax and cream of tartar. LIQUID CARBONIC CO. put the fizz in drinks. MONSANTO produced saccharin, and NABISCO owner said "No Eastern lawyer is going to tell me what we can eat out here in North Dakota!"

Ketchup or catsup was then a cheap sauce of stewed pumpkin rinds dyed red, vinegar, and paprika put in any old bottle and full of 100% preservatives.

Wiley's chemistry lab had identified 152 patent preservatives by 1901 but now the manufacturers were getting tricky.

1901. The usual way to test the effects of an additive in food or drink was to mix a solution of it and inject it into rabbits. If the rabbits didn't die quickly the additive was said to be nonpoisonous, safe for humans.

Wiley's way was to get a \$5,000 grant, create a sterile kitchen and dining room in the basement of the Department of Agriculture, hire a good cook, buy white tablecloths, and order strictly **fresh** food with no trace of preservatives. But first he had to advertise for 12 young robust men who had passed the civil service exam, promising them 3 free meals a day plus \$5 a month, in exchange for being in this study. They could not eat snacks. Had to record their health. Collect their urine and feces and bring them to the chemistry lab for analysis.

The first additive was Borax to be delivered in the men's butter. He knew they liked rolls with butter. They figured it out, borax then put in their milk, but they finally had to take borax capsules. The plan was 2 weeks of doses for table one, no doses for table two, than switch. Half the men got sick, lost weight but no one died from all the tests.

News papers picked up this story, they named it **The Poison Squad** and suddenly Dr. Harvey Wiley was a household name.

1902 -1904 WHERE ARE THE WOMEN'S VOICES IN THIS STORY?

Wiley was impressed by the organization skills of the women's clubs in our country. Women could not VOTE but they could march, protest and raise a ruckus.

Alice Lakey invited Wiley to speak to her Village Improvement Association. Alice and Harvey became allies in the fight for safer food. She persuaded women's clubs local and national to petition congress. Alice asked Dr. Wiley to publish a bulletin on "Food Adulteration and Simple Methods on their Detection". He did. Here's some samples. Neon bright green pickles or French Peas = added copper sulfate. Test ice cream, by adding a few drops of tincture of iodine, if it turns bright blue it was skim milk thickened with cornstarch. You were cheated.

Fannie Farmer. As a child she suffered a polio infection, lost ability to walk. She was 30 before she was strong enough to attend Boston Cooking School to learn about germs, microbes that cause illness, and principles of nutrition. She ended up head of the school. She wrote *The Boston Cooking-School Cook Book* which included food chemistry and nutrition information beside recipes. She wanted it published, her editor scoffed and sputtered. Fanny insisted saying many women could not afford to attend college. The editor finally agreed to print her cookbook, but **she** would have to pay for the first printing. She said okay, BUT she would retained control of the rights to her cookbook . In a decade she sold 400,000 copies. Women were educated, families healthier. Fannie became wealthy. She wrote *Food & Cookery for Sick and Convalescent*. Dr. Wiley praised her efforts.

1904 St. Louis World's Fair: Wiley knew the power of a million women backing his fight for food regulation. He said “Now let the food adulterer quail, for we have the women on our side”. He and his team set up 2 acres of displays at the fair of tainted food and drinks sold in the United States showing the adulteration and dangers. Including 40 brands of ketchup. Plus a display of odd bottles cut and twisted to hide that they held less than advertised. About 20 million people attended this World's Fair.

1904: But, what has happened to getting a Pure Food Act passed. Well, on one side through the years were Harvey Wiley, Alice Lakey and the American women AND on the other side were food processors, wholesale grocers and manufacturers. In the middle was the United States Congress who let the bill die over and over. Surprisingly some Senators from the southern states voted no because it was a “Northern Idea”.

1906. Finally on February 26, 1906 The **Pure Food and Drug Act** passes after a century of bitter political wrangling.

1910. Harvey Washington Wiley is now 66 years old, living in his own 3 storied home in D.C. He bought one of the first steam powered automobiles in town so he could drive out to the country farm he purchased. But a collision with a horse-draw wagon had him back riding a streetcar while it was repaired. That's when ANGELS stepped in. As Wiley waited for his streetcar in late October, he glanced up and there was Anna Kelton! Remember Anna from the library? Now 32, she smiled, glad to see him. He asked if she would like to see a show or go to dinner. By the first week in December they were engaged and married soon after.

The marriage made headlines across the country. Here is one headline.

“Greatest Enemy of Food Germs Falls Victim of Love Microbe”

Wiley not only gained a wife but she was also an active suffragette.

Soon their home was filled with two sons, Wiley a father at 67 years old.

1912. Harvey Wiley resigned after 30 years as Chief Chemist for the United States.

1930. At age 80, Harvey Washington Wiley died. His tombstone read
“Father of the Pure Food Act”

1956. For the 50th anniversary of the Pure Food & Drug Act,
a 3 cent U.S. Postage stamp featured a portrait of Wiley.

The research for this lesson comes from Deborah Blum's book; The Poison Squad.