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Cranberries and Health

More than just a side dish

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Those of us of a certain age remember the Great Cranberry Scare of 1959. Just weeks before Thanksgiving that year, a government official announced that cranberries from the Northwest were contaminated with a cancer causing pesticide. Food panic commenced. Grocery stores removed both fresh and canned cranberries from their shelves.

“Well, I don’t care what some secretary in Washington says, we’re having cranberry sauce at my house Thanksgiving. Mr. London at the A&P saved me two cans,” proclaimed Clio Flanagan, a revered Athens, Alabama, seventh grade science teacher, in response to this warning. The secretary who had her upset was Arthur Flemming, Secretary of Health, Education and Welfare, and one of the most important cabinet members in the Eisenhower administration. Even Mamie Eisenhower drank the Kool-Aid and served applesauce with non-pardoned turkey that Thanksgiving.

My teacher’s response to what has since been dubbed our nation’s first mass chemical-related food scare is etched in my memory. First of all, I adored Mrs. Flanagan. She wasn’t afraid of bugs and snakes. She could recite the periodic table from memory. Her knowledge of chemicals was also practical, as she had the blackest hair in town and a chemical sensing nose that could detect mere traces of any Avon product. She would announce on the first day of school each year that she was allergic to all Avon products and ban any student from her classes who dared come to school wearing anything Avon.

Secretary Flemming thought he was protecting us from a chemical villain called aminotriazole, a very effective herbicide used to kill bog weeds that choked out cranberry production. Rats fed an aminotriazole-laced diet developed thyroid cancer, thus the alarm. The tainted cranberries contained only trace amounts of this chemical. As additional information became available, Mrs. Flanagan’s decision to proceed with cranberry sauce was vindicated. A person would need to consume some “15,000 pounds of cranberries every day for several years to get cancer” according to a later press account of the event. Mrs. Flanagan inoculated me with a healthy dose of skepticism that has served me well to this day.

The public panic in 1959 was short lived. Today, cranberries are the darling of health food followers, especially in matters of the bladder. Cranberries are touted as a preventive and even as a treatment for urinary tract infections. The overwhelming majority of urinary tract infections are caused when E. coli bacteria from the colon go wandering and attach to the epithelial cell layer in the urinary tract. They climb right up into the bladder and beyond. Once attached, these guileful bacteria construct a microbial mucosal matrix called a biofilm.

The biofilm fixes the individual bacteria to each other and adheres the group to the surface of cells in the urinary tract.

Cranberries contain a unique plant chemical compound that disrupts infection-forming biofilm. Like millions of tiny Tonya Hardings, this chemical bashes bacterial fimbriae – hair-like appendages that allow attachment. Without the ability to attach to the cells lining the urinary tract, bacteria cannot bind together to create a biofilm and are washed away by a tepid flow of urine. Cranberry products do decrease the frequency of urinary tract infections in women and children, according to a few well designed peer reviewed studies. Pure cranberry juice actually outperformed cranberry extract pills in one study.

There may be more to cranberries than just urinary health. The primary culprit causing tooth plaque and subsequent decay is a bacterium called *Streptococcus mutans*. Recent research showed that a subtype of polyphenol unique to the cranberry also disrupts the ability of these oral bacteria to bind together, preventing the formation of plaque. No plaque means no colonies of bacteria producing acid forming chemicals that initiate tooth decay. Researchers are looking into harnessing the power of these plaque pillaging chemicals as protective chemical additives to toothpaste and mouth wash.

Cranberry lore confirmed by some preliminary research suggests that cranberry products have other cardiovascular, intestinal and immunological benefits. The added sugar needed to make cranberry juice and sauce palatable presents a caloric problem, but Thanksgiving isn't a day to fret about calories.

"The bioactives in cranberry juice, dried cranberries and a variety of other cranberry sources have been shown to promote an array of beneficial health effects," said a scientist connected to a cranberry producers' trade group. "Given the complex nature and diversity of compounds found in berry fruits and how they interact with each other, I believe we've only scratched the surface when it comes to identifying the potential power of the cranberry."

Back to the great cranberry cancer panic. It was the first nationwide scare involving a chemical additive to food. Its media coverage temporarily paralyzed the cranberry industry.

Subsequent chemical food scares included cyclamate and saccharine sweeteners, nitrites and DES in meats, red dye Number 2, Alar on apples and benzene in bottled water. But no food scare hit the American public with the intensity of that Category 5 cranberry storm in 1959.

"During the height of the alarm a housewife is said to have returned several cans of cranberry sauce to her local market – exchanging them for three cartons of cigarettes," according to an editorial in the *New England Journal of Medicine*. "In the long run people will not believe what they wish not to believe, and vice versa, illustrating one of the difficulties that the educational process encounters."

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Cranberries and the Native American connection

Cranberries are an indigenous North American fruit. They grow on small vine-like shrubs that thrive in cold water bogs and marshes. Louisiana wetlands, perfect for crawfish, are too warm for cranberries. Most cranberries, whether fresh or in the can, consumed in Louisiana come from commercial growers in Massachusetts, Oregon, Washington, New Jersey and Wisconsin. The berry that partners so well with Thanksgiving turkey and dressing begins as a pink flower in spring transforming into a red berry by late summer.

American Indian tribes living in areas conducive to cranberry bogs harvested the berries as an important food source. The tart and acidic berries are an excellent source of Vitamin C that prevents scurvy. The American natives ate cranberries raw and dried them for preservation purposes. They pounded dried cranberries, venison and animal fat into a paste that was America's first energy bar.

Every schoolchild learns that the Native Americans helped the Pilgrims with their first Thanksgiving. Supposedly cranberries were a part of that first feast. Early European settlers tinkered with these “sour berries” adding honey or sugar, which evolved to what we now know as canned cranberry sauce.

This diminutive crimson fruit has a long history of medicinal lore dating back to numerous Indian tribes, including Tonto's Potawatomi nation. The Indian medicine men believed cranberries could protect or cure a multitude of ailments including tumors, ulcers, dysentery, scurvy, dropsy and urinary tract infections.

As is often the case in passed down lore, kernels of truth exist. Like limes, cranberries have a high Vitamin C content. Dried cranberry consumption during winter months helped protect Native Americans from scurvy. And New England ship captains, without access to lime trees, sailed with barrels of dried cranberries doling out a daily handful to sailors as a North American scurvy preventive.