

Thesis: This essay is going to cover the pulsed light method of processing food as a non-thermal processing method.

Research Components:

- I. Background
 - A. FDA approved pulse light as a method of preservation in 2002.
 - B. Also referred to as high-intensity light
 - C. Method first discovered in the 1920's and then in the 1970's researchers began studying it.
 - D. This method has not been taken up on a large scale in the food industry, even though the FDA has approved this method.
- II. Effects of processing
 - A. Used for sterilization of surfaces, liquids, and fresh produce
 - B. Used to inactivate bacteria, mold, spores, and viruses in different food materials.
 - C. Used to package food
- III. Methods to accomplish
 - A. A broad spectrum radiation, delivered as intense, intermittent pulses
 - B. Uses ultraviolet light
- IV. Trends or consumer demands
 - A. Demanding fresh, natural, and minimally processed methods
 - B. The marked demands the use of pulsed light in post harvest decontamination.
- V. Impacts, benefits, and concerns
 - A. Benefit: Preserve the sensory and nutritional qualities in foods
 - B. Concern:
 - C. Impacts: Workers exposed to ultraviolet lighting may have negative health effects.

Sources:

Keener and Krishamurthy (2014). *Shedding Light on Food Safety: Applications of Pulsed Light Processing*. Retrieved from:

<https://www.foodsafetymagazine.com/magazine-archive1/junejuly-2014/shedding-light-on-food-safety-applications-of-pulsed-light-processing/>

In this source, I was able to find information about the background, effects of using pulsed lighting, and some trends of consumer demands.

Bhavya and Hebbar. (2017). *Pulsed light processing of foods for microbial safety*. Retrieved from: <https://academic.oup.com/fqs/article/1/3/187/4082109>

In this source I was able to learn more about the effects and methods of processing using Pulsed Lighting.

Rowan. (2019). Pulsed Light as an emerging technology to cause distribution for food and

adjacent industries- Quo vandis?

I used this site to learn about consumer concerns and about consumer demands for this type of preservation.