From Scientific Discovery to Routine Work: High-Pressure Processed Food

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Summary

P. W. Bridgman first described in 1914 that egg white (albumen) coagulated using high-pressure treatment of 7000 atm for 30 min at room temperature (20℃). This discovery was not recognized as the finding of a new cooking method but well-known in a specific scientific world as the first description of high-pressure induced protein denaturation. The author first indicated in 1987 that high-pressure induced coagulation of egg includes the principles of food processing and cooking, and therefore high pressure is widely used for food processing and preservation in addition to conventional heating and cooling. The high-pressure method produces foods of natural taste, flavor, and nutrients with special texture and high-pressure processed jams with natural color and taste appeared on the market in Japan as the first commercial food in 1990. During the 92 year-passing from the initial discovery, this article briefly describes how high-pressure processing becomes acceptable as a routine method in food industries, including several impressive episodes.