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The production of Acrylamide found in American products and other cooked foods

Acrylamide formation is a recently discovered cancer causing chemical found in various American products and cooked foods. The Center for Science in the Public Interest has reported that several well-known brands of chips, French fries, cereals, and taco shells do contain higher levels of Acrylamide. In a large order of fast-food French fries, the Acrylamide amount is three hundred times more than the US Environmental Protection Agency allows in a glass of water. Multiple studies around the world are leading the way to identifying the root cause of Acrylamide and how it is formed. Food Chemistry Professors Donald S Mottram of the University of Reading, England, Bronek L Wedzicha of the University of Leeds, England, and Richard H Stadler of Nestle Research Center in Switzerland found that by heating Asparagine and Glucose to one hundred and eighty-five degrees Celsius produces substantial amounts of Acrylamide. The Candian Government along with Proctor and Gamble used similar methods to make the Acrylamide –Asparagine connection (Nature, 419, 448, & 449, 2002).

This data was analyzed using mass spectrometry. The data showed the reaction between Asparagine and sugar produces an N-linked Glycoside. Analyzing the isotopes, they were able to discern it is the asparagine that becomes Acrylamide. By measuring the levels of Acrylamide in fried and baked foods they were able to compare the data. The various cooking temperatures and times give rise to the variability of Acrylamide levels in the food. Determining the steps that regulate the rate of reaction and relating it to real foods, we might be able to find ways of