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Development and commercialization of infrared dry-peeling technology for fruits and vegetables

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California urgently needs the continued development and commercialization of infrared heating based dry-peeling technology for fruits and vegetables to replace the current hot lye and steam peeling. The new infrared dry-peeling technology uses infrared heating to lose the skin of fruits and vegetables and eliminates the use of chemicals and water, and treatment of wastewater with high salinity. The technology has been developed through USDA and UC Davis and successfully demonstrated in a pilot scale at two tomato processors. It showed a superior performance with better peelability, firmer product and reduced peeling loss compared to lye and steam peeling. The removed skins can also be easily used as value-added food ingredients. The overall energy use is much lower than the current peeling methods. The demonstration data have been documented and available as project reports and publications. Tomato peeling industries in California typically uses 4.6 billion gallons of water annually to process 12.6 million tons of tomatoes. Therefore, infrared dry-peeling of tomatoes is a definite solution for water supply and salinity problems caused by steam and lye peeling methods. The technology has also successfully demonstrated to food processors for peeling pears. To implement the technology in commercial application, a large scale of demonstration for tomatoes and continued development of the technology for other fruits are needed. This technology should be given a top priority in California to save water and eliminate use of chemicals in the food processing to reduce the environmental footprints.

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