

Commercializing hypoallergenic peanut

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Dr. Jianmei Yu, a food scientist in the School of Agriculture and Environmental Sciences at North Carolina A&T State University is leading research on a post-harvest treatment for hypoallergenic peanuts. Credit: Lee Adams/School of Agriculture and Environmental Sciences, N.C. A&T State University

Hypoallergenic peanuts, peanut butter, and other peanut products are a step closer to grocery stores with the signing of an exclusive licensing agreement for the patented process that reduces allergens in peanuts by 98 percent.

North Carolina Agricultural and Technical State University signed the agreement with Xemerge, a Toronto-based firm that commercializes emerging technologies in food, agriculture, and a variety of other fields. Xemerge has opened an office at the Gateway University Research Park south campus in Greensboro.

"This is one of the best technologies in the food and nutrition space we have seen," said Johnny Rodrigues, Chief Commercialization Officer of Xemerge.

"It checks all the boxes: non-GMO, patented, human clinical data, does not change physical characteristics of the peanut along with maintaining the nutrition and functionality needed, ready for industry integration from processing and manufacturing to consumer products."

The process was developed by Dr. Jianmei Yu, a food and nutrition researcher in the School of Agriculture and Environmental Sciences, department of family and consumer sciences, and two former A&T faculty members, Dr. Mohamed Ahmedna and Dr. Ipek Goktepe, both of whom are now at Qatar University.

"Treated peanuts can be used as whole peanuts, in pieces or as flour to make foods containing peanuts safer for many people who are allergic," Dr. Yu said.

"Treated peanuts also can be used in immunotherapy," she said. "Under a doctor's supervision, the hypoallergenic peanuts can build up a patient's resistance to the allergens."

Research funding was provided by the Agriculture and Food Research Initiative of the U.S. Department of Agriculture.

The process treats roasted peanuts, removed from the shell and skin, with food-grade enzymes commonly used in [food processing](#). The treatment consists of soaking the peanuts in an enzymatic solution.

The treatment reduces two key allergens, Ara h 1 to undetectable levels and Ara h 2 by up to 98%. The resulting peanuts look and taste like [roasted peanuts](#). The peanuts are not genetically modified.

The effectiveness of the process was demonstrated in human clinical trials at the University of North Carolina at Chapel Hill, using skin-prick tests.

In contrast to various other approaches to eliminating [peanut allergens](#), the N.C. A&T process doesn't involve chemicals or irradiation, and uses commonly available food-processing equipment.

In collaboration with Xemerge, Dr. Yu is continuing to refine the process by testing the effectiveness of additional food-grade enzymes.

Peanuts cause serious allergic reactions in an estimated 0.9% of the U.S. population, about 2.8 million people. Highly sensitive children and adults can develop anaphylaxis, a severe allergic reaction, in as little as a few seconds from ingesting extremely small amounts. Anaphylaxis symptoms can include difficulty breathing; low blood pressure; swelling of the tongue, eyes or face; stomach pain, nausea and vomiting; skin rashes, blisters, itching, inflammation, and pain; and in some cases even death.

Provided by North Carolina A&T State University, School of Agricultural and Environmental Sciences

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