Rutgers research spices up food safety debate

Since processed foods first began entering the American lexicon after World War II, man-made preservatives have been used to keep food safe. But as Americans have changed their attitudes about food in recent years, preservatives have gone out of favor with the rising popularity of organic foods.

Now, a pair of Rutgers University researchers have devised a natural, organic way of keeping food safe. The innovative process prevents food spoilage by using anti-microbial agents derived from spices.

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Uhrich and graduate student Ashley Carbone presented the findings of their work Wednesday at the 234th national American Chemical Society meeting in Boston.

The researchers employed natural anti-microbial agents derived from spices such as cloves, oregano, thyme and paprika to create biodegradable polymers, or chains of molecules, that block the formation of bacterial clusters known as "biofilms" on food surfaces and packaging.

The polymers, added to either the food or the packaging itself, degrade slowly, creating a time release of anti-microbials that inhibit food spoilage.

"We're talking about a sophisticated, intelligent approach to microbial food safety and an extension of food shelf-life," said Mikhail Chikindas, a microbiologist at Rutgers' Center For Advanced Food Technology. "It's kind of an organic approach to making foods safer," said Kathryn Uhrich, a Rutgers professor of chemistry and chemical biology. It's a novel way to control the formation of toxic (microbial) communities by using naturally derived compounds."

The researchers say such a system would also have potential in products that are not food, including medical and personal care products, textiles, and electronics. The Rutgers-developed technology is already incorporated into anti-microbial soaps and detergents that are being tested by manufacturers.

Read the full story in Thursday's Star-Ledger.