



Researchers at Virginia State University are working with industry to better understand the means of processing and packaging chickpeas for use in hummus production. This work will help improve processing methods and increase the shelf-life of hummus products.

Getting on the Hummus Bandwagon

Who cares and why?

Chickpea is one of the most important food legumes in the world. Based on the National Agricultural Statistics Service (2013), 206,300 acres of chickpeas were harvested in 2012, and total chickpea production in the United States amounted to roughly 370 million pounds. Currently, the majority of chickpeas produced in the U.S. are exported.

Chickpea is a major ingredient in hummus, a Middle Eastern and Arabic food dip or spread that is gaining in popularity in the United States. Sales of hummus in the U.S. reached nearly \$530 million in 2012, according to food retailers. Sabra Dipping Company, which manufactures and distributes hummus worldwide, has opened a new facility in Chesterfield, Va. Sabra is collaborating with food-science faculty at Virginia State University (VSU) to investigate chickpea processing properties and the effects of processing. In addition, researchers are seeking more information on novel packaging technologies that will potentially increase the shelf-life of hummus, thus benefiting the industry as a whole.

What has the project done so far?

Researchers at VSU conducted studies to determine the optimal processing method of chickpeas for hummus preparation. Three chickpea varieties were evaluated using boiling, pressure cooking and microwave-cooking techniques. Pressure cooking was found to be the best method for preserving the nutritional quality and functional properties of chickpea for hummus production. The nutritional, physicochemical and functional properties of six raw, commercially available chickpeas were evaluated to serve as the standard criteria for selecting proper chickpea varieties for hummus preparation. The shelf life for hummus is 70 days. The effect of using modified atmosphere packaging (insertion of a modified gas into a package's headspace) is being investigated for extending product shelf life. Currently, information related to standard criteria and modified packaging is not available due to proprietary considerations.



Impact Statement

- Identified pressure cooking as the optimal process for maximally preserving nutritional and functional properties of chickpea for food production
- Helped industry professionals determine standard criteria regarding nutritional, physicochemical and functional properties of chickpeas used for hummus preparation

Strategic Priority: This project addresses the following priority research areas, as outlined by NIFA: Nutrient Composition of Food (701); New and Improved Food Processing Technologies (501); and New and Improved Food Products (502).

What research is needed?

More research is needed in the areas of which chickpea varieties are best suited to processing, as well as into the correlations of changes in functional properties and structural properties of chickpeas during processing.

Want to know more?

Dr. Yixiang Xu, Principle Investigator
yixu@vsu.edu, (804) 524-5668

Additional links:

<http://www.umes.edu/ard/Default.aspx?id=46285>

Year and Institution: 2014, Virginia State University

This project is supported by the Virginia Department of Agriculture and Consumer Services through a Specialty Crop Block Grant through, from 2013-2015, and through USDA Evans-Allen Program, from 2014-2017.

