Did You Know?

Pickles are a multi-billion-dollar industry in the United States, and it's trending ever hotter today as more and more craft brands show up in stores and farmers' markets all over the country. But did you know ARS has helped commercial pickle-making meet the highest standards of quality, environmental impact, and food safety over the years? And ARS continues to do this important work today.

Pickling is one of mankind's oldest ways of safely preserving food. But today, we require objective measures to ensure that pickles always meet the highest food safety standards.

In the late 1990s, the U.S. Food and Drug Administration (FDA) wanted to add tighter food safety controls for all acidified foods, including pickles. While everyone knows that heat and acid stop bacteria, no one knew the exact numbers for doing that during pickling and for doing that while not hurting the quality of pickles. So the researchers at the ARS Food Science Research Unit in Raleigh, NC, took on the task of identifying those precise processing conditions.

Today, all U.S.-produced pickled vegetables—cabbage, peppers, tomatoes, etc.—and all the different dill pickles—bread and butter, sweet, sour, kosher, etc.—follow standards based on ARS researchers' work.

Putting precision in commercial pickle-making has been the mission of the ARS lab in Raleigh since it opened in 1935.

Microbiologist John L. Etchells, who headed the ARS lab until 1974, first brought pasteurization to the industry—a huge step in preventing spoilage and making room-temperature, shelf-stable products possible.

Food Technologist Henry Fleming, who led the ARS lab next, developed a process that ended the problem of bloating—pockets of gas ballooning up within cucumbers during fermentation that disqualified about one-third of each batch from highest value use.

Fleming also began working on the pickling industry's major environmental problem of brining salt disposal. Today, among the lab's projects is developing pickling fermentation technology based on calcium chloride rather than sodium chloride so that, instead of becoming potential pollutants, processing leftovers could be used to improve farmers' and homeowners' calcium-deficient soil.

Just 1/8 cup of pickles counts as one of the five recommended daily servings of fruits and vegetables!

*Written by **Kim Kaplan**, ARS Information Staff.*

Executive Editor
Sandy Miller Hays

Managing Editor
Tara T. Weaver-Missick

Writer-Editor
Mina Chung

Designer-Editor
Carol Nathan

Contributors
Jennifer Gilbert
Tracy Havermann
Kim Kaplan
Joy McDaniel
Beth Redlin
Geoffrey Rinehart
Domi Sanchez
Mike Strauss