

## **Soy Good! Edamame Multi-Snack Dip: Evaluation of Microbial and Quality Attributes**

Nguyen Dang, Denver Paradeza, Kirat Khushwinder Bains, and Sadhana Ravishankar

School of Animal & Comparative Biomedical Sciences, University of Arizona, Tucson, AZ

Edamame bean is a traditional Japanese delicacy that is rich in proteins, fiber, and antioxidants. In this project, a dip from edamame beans was created with two flavors: chili garlic and lemon ginger. These flavors are an inspiration from Asian cuisine, since chili, garlic, and ginger are widely used ingredients in Asian households. Microbial analyses were done with corrective actions taken to prevent cross-contamination during production. For each flavor, there were two types of samples: a sample with untreated ingredients and a sample with heat-treated ingredients (cooked under a pressurized cooker for 30 minutes). The final product samples were analyzed for aerobic plate count, coliform count, and yeast and mold count by serial dilutions of the product in 0.1% peptone water and spread plating on tryptic soy agar (TSA), MacConkey agar (MAC), and Dichloran Rose Bengal agar (DRBC), respectively. Only the TSA plates had growth for both flavors with no significant differences in microbial populations between the dips with untreated ingredients versus heat-treated ingredients. Further investigations into each raw ingredient revealed that onion contained sporeformers, causing the replacement of onion powder with roasted onion as an ingredient, which will be further tested for microbial quality. The pH and texture of the products were measured. Overall, chili garlic-flavored dip has a higher pH than lemon ginger-flavored dip due to the difference in the amount of lemon juice used. The chili garlic-flavored dip also had a higher value for firmness and stickiness than the lemon ginger-flavored dip. This was expected since the chili garlic-flavored dip contained chunks of roasted garlic and chili. A sensory analysis was conducted using untrained panelists who provided scores based on consistency, texture, flavor, aroma, and appearance. An overall liking score of 8 out of 9 was obtained for both dips despite a low score for appearance for both flavored dips.