



## Product Testing Fact Sheet

### Introduction to Product Testing

It is important to test your food product to make sure that it will be safe to eat once it is purchased by your customers. Foods that do not meet certain specifications can encourage the growth of bacteria which can cause people to get sick (foodborne illness). A law by the Food and Drug Administration (FDA) called Title 21 provides specifications for different food products to minimize bacterial growth. The SC Department of Agriculture (SCDA) is contracted by FDA to ensure safety of SC foods. This fact sheet provides important information about the Title 21 requirements, and gives detailed instructions for getting your product tested through Clemson University.

### Objective of Product Testing

- To make sure consumers get a safe food product that does not encourage the growth of bacteria, leading to foodborne illness.
- To protect you and your business: If someone gets sick after eating your product you can be held responsible (a lawsuit could be brought against you).

### Description of What is Being Analyzed During Product Testing at Clemson University

- **Acidity and water activity** provide information about the potential for bacteria to grow in food. The more acidic the food (low pH) and the less water available in the food (low water activity), the less likely the food will promote bacterial growth. Federal and state food regulations state that a shelf-stable product that does not require refrigeration must have a water activity  $\leq 0.85$  and a pH  $\leq 4.6$ .
  - **Acidity** – measurement of the pH of the food. ([pH ranges of some common foods](#))

- pH:  $\leq 4.6$  - “acidic food” (Prevents the growth of harmful bacteria)
- pH:  $\sim 7.0$  - neutral
- pH:  $\geq 8.0$  - alkaline
- **Water Activity** – amount of “free” water (water available to grow bacteria) – Goal is  $\leq 0.85$ . (Examples of the amount of [water activity found in common foods](#))
- **Nutrient Analysis** – nutritional content of the food product’s ingredients and quantity are analyzed using a food ingredient database which will then generate a nutrition label with all the necessary information in the correct format. We will send you the label in a format that you can take to a printer and use on your product.

### Submitting a Food Product for Testing

- Print and complete the “Product Testing and Nutritional Labeling Request Form” available online at the Clemson Extension Food2Market website: [www.clemson.edu/extension/food2market](http://www.clemson.edu/extension/food2market). No substitutions for this form will be accepted. This form must be completed in its entirety and submitted with product samples and payment. Failure to submit this completed form will delay product testing results.
- Mail the completed “Product Testing and Nutrition Labeling Request Form” along with one sample from four different batches (4 samples total per product) and check made payable to “Clemson University” to: Clemson University, C/O Dr. Julie Northcutt; Product Testing Laboratory, Department of Food, Nutrition and Packaging Science, 223 Poole Agricultural Center, P.O. Box 340316, Clemson, SC 29634-0316.
- Note: UPS, Post Office and/or Fedex sometimes question the above address. Please tell them to send the package to the address above exactly as listed. It will get to the correct location by using this address.
- Packages must include Dr. Julie Northcutt’s name as listed above. If not included we cannot ensure that samples will be tested in a timely manner.
- Products must be mailed to the address listed above. Absolutely no in-person deliveries of product samples will be accepted.
- Broken, leaking or improperly sealed and marked samples will not be tested.

- If you are sending any products that are perishable, refrigerated or frozen please mark on the outside of the package if the box needs to be refrigerated or frozen upon arrival.
- Testing four batches allows us to demonstrate to SCDA that the product is consistent from one batch to the next. Examples of a sample: 1 sample = 1 cup salsa, BBQ sauce, etc. or 1 item such as 1 muffin, 1 piece of candy, etc.
- Product samples do not need to be sent with the form and payment when only a nutrition analysis is being performed on your product. Samples are required for pH and water activity testing only.
- Cash cannot be accepted for payment of product testing. Only checks made payable to “Clemson University” can be accepted at this time.
- Please note that products cannot be accepted when the Product Testing Laboratory is closed. Make sure that samples are not scheduled to be delivered on holidays, weekends or on the following dates:
  - November 3-4, 2014
  - November 26-28, 2014
  - December 1, 2014- January 5, 2015 (Note that samples received on or after December 1<sup>st</sup> will not be tested until the lab re-opens in January.)
  - March 16-20, 2015
- **For questions about the product testing process please contact Kimberly Baker at [kabaker@clemson.edu](mailto:kabaker@clemson.edu) or 864-226-1581 ext. 115 or Adair Hoover at [cpope@clemson.edu](mailto:cpope@clemson.edu) or 864-656-9986.** Do not call Clemson University’s Department of Food, Nutrition and Packaging Science. This office is unable to answer any questions regarding product testing.
- The Product Testing Laboratory is not responsible for lost, spoiled or broken samples.

### Test Results

- Please allow a minimum of four (4) weeks for testing results to be returned.
- Please keep in mind that Clemson University is an educational institution and all faculty, staff and employees have other responsibilities outside of working with the product testing lab.
- A copy of your results will be sent to you and the SCDA (or other applicable regulatory authority) via e-mail by default or by mail if e-mail is not available.

Maintain a copy of these results for your records as the SCDA (or other applicable regulatory authority) can audit your process at any time and you will be held liable if you do not have evidence of your product testing.

### Interpreting Your Results

- Products classified as an acidic food ( $\text{pH} \leq 4.6$ ) can continue to be produced and marketed within an inspected and approved facility.
  - A co-packer is a food processing plant that will produce and package your food product for you (AKA co-packers) [List of Co-Packers](#)
  - You may rent space from a co-packer or shared kitchen in order to make your product or you can hire workers at the co-packer to make the product for you.
  - Production of food products in home kitchens is not permitted.
- If your food product is not classified as 'acidic', you will receive recommendations about how to proceed which may include, but are not limited to, product heating, use of sterilized bottles for packaging, and attendance at a [Better Process Control School](#). You will also be required to schedule your process with the [FDA](#).

Parisi<sup>1</sup>, M. A., E. L. Steinberg<sup>2</sup>, and J. K. Northcutt. 2012. Product testing and nutrition labeling factsheets. Prepared for the Department of Food, Nutrition and Packaging Sciences, Clemson University. <sup>1</sup>Assistant Professor, Winthrop University, Rock Hill, SC and Adjunct Assistant Professor, Clemson University; <sup>2</sup>Graduate Research Assistant, Clemson University; <sup>3</sup>Professor, Clemson University.