

Appendix III: Sensory Evaluation

I. Selection of Sensory Panel

Fifteen people, staff and graduate student at Virginia Tech, were recruited for the sensory evaluation of fish samples. The group was heterogeneous in nature, having nearly equal numbers of both sexes and individual ranging from 20 to 50 years of age. The panel underwent a series of training sessions before the study began. The sessions served to acquaint all panelists with fish products and the tastes associated with oxidation and spices. The panelists also reviewed the proper protocol to follow and the sensory evaluation form.

During the training sessions, panelists were presented with rainbow trout samples that had been frozen stored for two years, and thus had considerable oxidation. Since there was limited supply of oxidized fish samples, researchers also presented fresh fish samples that had various levels of oxidized fish oil added. Panelists were asked to evaluate which of the fresh fish + oil samples most closely matched the two-year old sample. Researchers found that by adding 1 ml of oxidized fish oil to 100 g of fresh fish, the oxidized flavor and odor notes from the two year old sample could be most closely matched.

Over several sessions, researchers used fresh fish with varying levels of oxidized fish oil (0, 0.25 ml, 0.50 ml, 0.75 ml, and 1.0 ml per 100 g fish tissue) to familiarize the panelists with varying extents of oxidation. All panelists demonstrated the ability to distinguish between higher levels of oxidation, namely at the 0.75 ml per 100 g tissue level and higher. To familiarize panelists with the flavor and odor notes associated with natural antioxidants, the fresh fish were first treated with the antioxidants blends and then

the oxidized oil was added. Panelists demonstrated the ability to distinguish between higher levels of oxidation, namely at the 0.75 ml per 100 g tissue level and higher, with an herbal background flavor note, as well.

II. Sensory Evaluation Forms

The semi-trained panel was presented with the following sensory evaluation form. This form was used for all levels of butchery.

Name: _____

Date: _____

Please taste the pair of coded samples you have been given. When you are finished with this pair, pass it through the window and another pair will be presented. Please make a decision as to which sample is more oxidized. If no difference is apparent, enter your best guess, however uncertain. You must make a choice. Between samples you may cleanse your palate with the water and crackers provided.

Circle the sample code of the more oxidized sample.

To determine effect of dipping time on the herbal flavor intensity of fish samples, 35 untrained panelists were asked to assess which sample within a pair had the most herbal flavor. The sensory form for this study is presented below. In a separate study, 35 untrained panelists were asked to assess the acceptability of the control and treated filleted samples after twelve months of frozen storage at -29°C . A nine point hedonic scale was used. The evaluation form presented in this study is on the following page.

Judge Number: _____

Instructions:

1. For each pair, taste the two samples in the indicated order.
2. Determine which sample has the most intense herbal flavor. You must make a choice.
3. Rinse your mouth with water between tasting samples.

Sample Codes _____ _____

Which sample has the most intense herbal flavor? _____

Sample Codes _____ _____

Which sample has the most intense herbal flavor? _____

Thanks for your participation!

Name: _____

Date: _____

Please taste the coded samples in the order presented, as below. Make a decision as to the level of acceptance of each sample, by checking the appropriate box. Use whole number intervals, do not check between boxes. Between samples you may cleanse your palate with the water and crackers provided.

Thank you for your participation and don't forget your candy.

Sample Code	ACCEPTANCE LEVEL								
	Dislike Extremely	Dislike Very Much	Dislike Moderately	Dislike Slightly	Neither Like nor Dislike	Like Slightly	Like Moderately	Like Very Much	Like Extremely
	1	2	3	4	5	6	7	8	9

What is your age? _____

Sex? M or F

How many times do you consume fish per month? _____

VITAE

Aretha Genevieve Turner was born on August 14, 1974 in Portsmouth, Virginia. She is the daughter of Mr. and Mrs. General Johnson and Gertha Mae Turner. In June 1992, Aretha graduated valedictorian of Oscar Frommel Smith High School. In the fall of that year she entered Virginia Polytechnic Institute and State University (VPI&SU) as a chemistry major. During the summer of 1995, Aretha received a summer internship opportunity in food chemistry, working under the direction of Dr. Susan E. Duncan. This project spurred her interest in food science and after completing her bachelor's degree in May 1996, she entered the Master's program in the Department of Food Science and Technology at VPI&SU.

Aretha is a member of the Institute of Food Technologists and is active in several civic organizations. The author has accepted a research and development position with the H.J. Heinz Company upon the completion of her master's degree.