Appendix C
Cake Ingredients
Table A.17. Cake ingredients.

<table>
<thead>
<tr>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cake Flour (White Lily Flour, White Lily Foods Co., Knoxville, TN)</td>
</tr>
<tr>
<td>2. Nonfat Dry Milk (Carnation Natural Nonfat Dry Milk, Nestle’ Food Co., Glendale, CA)</td>
</tr>
<tr>
<td>4. Salt (Morton’s Iodized Salt, Morton International, Inc., Chicago, IL)</td>
</tr>
<tr>
<td>5. Sodium Carboxymethylcellulose (CMC) (Aqualon, Type 99-7 MF, Wilmington, DE)</td>
</tr>
<tr>
<td>6. TIC Pretested Ticaxan Xanthan Powder (TIC Gums, Inc., Belcamp, MD)</td>
</tr>
<tr>
<td>7. Crisco All-Vegetable Shortening (Procter and Gamble, Cincinnati, OH)</td>
</tr>
<tr>
<td>8. Corn Maltodextrin 10-DE (Casco 01900, Batch 2318195000, Cardinal, Ontario)</td>
</tr>
<tr>
<td>9. Granulated Sugar (Kroger, Kroger Co., Cincinnati, OH)</td>
</tr>
<tr>
<td>11. Distilled Water</td>
</tr>
<tr>
<td>12. High-Fructose Corn Syrup-90 (Casco 026900, London, Ontario)</td>
</tr>
<tr>
<td>13. Pure Vanilla Extract (Harris Teeter, Charlotte, NC)</td>
</tr>
</tbody>
</table>
Appendix D

Consent Form
Title of Project: Evaluation of a Maltodextrin Gel as a Partial Replacement for Fat in a High-Ratio White-Layer Cake Formulation.

Principal Investigator: Leslie L. Archilla and Frank D. Conforti, Ph.D.

I. PURPOSE OF THE PROJECT

You are invited to participate on a sensory evaluation panel that involves assessing the various sensory characteristics pertaining to a particular formulation of a high-ratio white layer cake. Establishing such information will be correlated with objective measurements to ascertain the performance of a maltodextrin gel as a replacement for 25, 50, 75 and 100% of the shortening in a high-ratio white-layer cake recipe. Researchers in the Department of Human Nutrition, Foods and Exercise are conducting this project. Your participation is voluntary.

II. PROCEDURES

There will be a total of 14 sessions, with 4 training sessions held twice a week and 10 testing sessions held 3 times a week, for a total of approximately 5-1/2 weeks. Each session will be approximately 15 minutes, except for the 4 training sessions, which will be approximately 1 hour long. You will be presented with 3 samples at each test session. As a panelist, it is critical to the project that you attend each session. If you cannot attend a particular session, please let me know, so that arrangements can be made. Should you find a sample unpalatable or offensive, you may choose to spit it out and continue to other samples.

Certain individuals are sensitive to some foods such as milk, eggs, wheat gluten, strawberries, chocolate, artificial sweeteners, etc. If you are aware of any food or drug allergies, please list them in the following space and immediately inform the principal investigator prior to consuming any samples: ____________________________________________.

III. BENEFITS/RISKS OF THE PROJECT

Your participation in the project will provide useful information that can be used in the further development of a high quality low-fat high-ratio white-layer cake. All food additives have been approved by the Food and Drug Administration, so there are no risks involved, provided you do not have any unknown food allergies. You may receive the results or summary of the panel when the project is completed.

IV. EXTENT OF ANONYMITY AND CONFIDENTIALITY

The results of your performance as a panelist will be kept strictly confidential. Individual panelists will be referred to by code for analyses and in any publication of the results.
V. COMPENSATION

No compensation will be provided for panelists involved in this study.

VI. FREEDOM TO WITHDRAW

It is essential to sensory evaluation projects that you complete each session in so far as possible. However, there may be conditions preventing the completion of all sessions. If after reading and becoming familiar with the sensory project, you decide not to participate as a panelist, you may withdraw at any time without penalty.

VII. APPROVAL OF THE RESEARCH

This research project has been approved by the Institutional Review Board for projects involving human subjects at Virginia Polytechnic Institute and State University and by the human subjects review of the Department of Food Science and Technology.

VIII. SUBJECT’S RESPONSIBILITIES

I know of no reasons I cannot participate in this study, which will require participating in 4 training sessions held twice a week and 10 testing sessions held 3 times a week, for a total of approximately 5-1/2 weeks.

________________________________________  ________________________
Signature                                             Date

Please provide your address and phone number so I, Leslie L. Archilla, can reach you in case of an emergency, or if the schedule should change for some unknown reason.

Address: __________________________________________

Phone: ___________________________________________
IX.  SUBJECT’S PERMISSION

I have read the information about the conditions of this sensory evaluation and give my voluntary consent for participation in this project.

I know of no reasons I cannot participate in this study, which will require participating in 4 training sessions held twice a week and 10 testing sessions held 3 times a week, for a total of approximately 5-1/2 weeks.

__________________________________________  ________________________
Signature                                      Date
Should I have any questions about this research or its conduct, I may contact:

Leslie L. Archilla (540) 231-7708
Investigator
Graduate Assistant
Department of Human Nutrition, Foods and Exercise
Virginia Tech

Frank D. Conforti, Ph.D. (540) 231-8765
Faculty Advisor
Department of Human Nutrition, Foods and Exercise
Virginia Tech

H. T. Hurd (540) 231-9359
Director, Sponsored Programs
Internal Review Board, Research Division
Virginia Tech
Appendix E
QDA Attribute Definitions
QDA Attribute Definitions

1. **Moistness**: the amount of wetness perceived within the mouth.

2. **Sweetness**: The perceived amount of sugar content.

3. **Tenderness**: the amount of chewing resistance.

4. **Adhesiveness**: the degree to which the cake adheres to the teeth and palate.

5. **Cohesiveness**: the extent to which the cake remains intact during handling and chewing.

6. **Height**: the degree of upward distance.
Appendix F
QDA Scorecard
Sensory Evaluation of Cakes

Panelist #__________ Date:__________

Instructions: Please evaluate the sample presented to you in a clockwise fashion, starting at the (!) sign, and place a mark on each scale representing the intensity of each attribute. Write the numbered code on each sample above the corresponding vertical mark. Please rinse with water after tasting each sample. Thank you.

Moistness

| Dry | Moist |

Sweetness

| Bland | Sweet |

Tenderness

| Tough | Tender |

Adhesiveness

| Not sticky | Very sticky |

Cohesiveness

| Not crumbly | Crumbly |

Height

| Short | Tall |
Leslie L. Archilla was born February 23, 1973 in Puerto Rico. In 1980, she relocated to the United States with her family. She attended Virginia Polytechnic Institute and State University, where she received in December, 1995, a Bachelor of Science degree in Consumer Foods from the Department of Human Nutrition and Foods, and a minor in Biology. Upon completion of her undergraduate degree, she worked as a Culinary Administrative Assistant at Apollo Ship Chandlers, in Miami, Florida, editing menus and recipes for four cruise lines, and providing information for the recipe and menu portion of Apollo’s new computerized recipe program. In the fall of 1997, she returned to Virginia Tech to pursue a Masters of Science degree in Foods from the Department of Human Nutrition, Foods and Exercise, which she completed August 6, 1999. She plans on pursuing a career in the food industry.