

Writing Lab Reports for NS415 Food Science with Lab

Nanna Cross

Kaplan University

Writing Food Science Lab Reports

This food science course with lab is designed as a way for students to learn principles of food science through the preparation of food products and observing and reporting the results. The food science lab report follows the same guidelines as a lab report in biology or chemistry courses. Follow APA manuscript style for writing lab reports (Kaplan, 2009). Include a cover page and a separate page of references. Follow APA style for margins, line spacing and font size and style (Kaplan, 2009). Generally this means margins of 1 inch on all sides, double spaced with a font size of 10 to 12 point, Times New Roman or similar style font.

Follow these guidelines for writing lab reports for NS415, Food Science with Lab. The lab report should be a minimum of two pages up to a maximum of five pages (not including the cover page, tables, photographs or references). Use Standard American English, past tense and an active voice. Use scientific terms described in the text (Bennion and Schuele, 2010) and the glossary of common terms from the food preparation laboratory manual (Conforti, 2008, pp. 196-208). The report should be easy to read and understand by your peers.

Format

A food science lab report summarizes the steps in the scientific process used to answer a question or test a hypothesis. Most food experiments compare a standard food product with variations in ingredients or preparation. There are five parts to a lab report as outlined below: Introduction, Materials and Methods, Results, Discussion and References.

Introduction

This section asks the question, *what is the problem or what is the purpose of this laboratory experiment?* **Objectives** and **Food Science Principles** are listed in the assigned unit in the laboratory manual, *Food Selection and Preparation* at the beginning of each experiment. Select one or two that fit the experiment to include in your report. A hypothesis is a possible explanation for the lab results and is related to the Food Science Principles. An example of an objective is, “to evaluate the affect of mixing muffin batter on the shape, texture and cell structure of muffins.” For a muffin experiment that compares the number of strokes when mixing the batter, a hypothesis could be, “mixing the muffin batter for 20 strokes will result in a muffin with a peaked top and tunnels.”

Materials and Methods

Generally the ingredients, tools and preparation steps (mixing, cooking temperature and cooking time) of the experiment are included in this section. Include the standard product and variations being evaluated. For example, “a standard muffin and a variation using twice the amount of both fat and sugar were prepared for this lab.” Note any changes you made in the ingredients or method of preparation, for example, “butter was substituted for vegetable oil in this experiment.” For the purpose of this course, it is appropriate to describe the materials and methods in a sentence or two, for example, “the recipe for Basic Oatmeal Cookies and directions for measuring ingredients, mixing, baking and cooling were followed (Conforti, 2008, p.9).” Note any exceptions, for example an exception for this recipe could be, “white sugar was substituted for brown sugar.” The amount of detail for your lab report is different from conducting research in which every detail is important in the event that someone else wants to repeat the experiment.

Results

Briefly describe the results including both sensory and objective evaluations. Examples of **sensory evaluation** are flavor, odor, sound (when eating), taste and texture. An **Objective evaluation** would be appearance or shape, color, height of a loaf of bread or muffin in inches, the appearance of tunnels in a muffin, or a collapsed top of a cake. Include photos of your experiment so that you have evidence that the lab was completed. Insert copies of tables from the assigned unit of the Laboratory Manual and add your results into the tables. Your written narrative can be brief, just report your results in one or two sentences and refer to the table and figures (photos). Reporting results in a table gives the reader a quick comparison of different treatments for each lab experiment. Using tables will also save time since it is not necessary to write the same information in detail in your lab report. Check out these instructions, [Inserting Tables into Word Documents](#). An example of the table for Unit 1 of this course has been inserted below. The purpose of the experiment was to evaluate the effect of temperature on the perceived sweetness of ice cream tasted at different temperatures. The results can be easily recorded by checking the appropriate box in the table.

Table 20.1 EVALUATION OF SWEETNESS INTENSITY			
Sweetness Intensity	Sample #1	Sample #2	Sample #3
Most sweet			
Moderately sweet			
Least sweet			

Discussion

Analyze and interpret your results. Summarize what you learned and whether or not the objective(s) were met. Explain how the Food Science Principle was (or was not) illustrated by your experiment. For example, “the expected results for muffins mixed for 15 strokes for the standard muffin had a peaked top and tunnels. The explanation for this is that I used a hand beater for mixing resulting in an over mixed batter and overdevelopment of gluten.” It is not necessary to repeat an experiment for your lab report if the results were not as expected. Do use the Food Science Principles and review the instructions for the experiment to understand and explain your results.

Incorporate answers to assigned unit questions in the laboratory manual using a paragraph format. Write the answers to the questions without listing the questions or numbering your answers. Suggest a new hypothesis to be tested related to the lab experiment. Cite references used to answer the questions or explain your results. .

You should be able to find the answer to most questions either in the text, *Introductory Foods* or the lab manual, *Food Selection and Preparation*. The PowerPoint used in seminar is designed to cover concepts (and answers to the questions) necessary for writing lab reports. The PowerPoint files are available on Doc Sharing.

References

Follow APA Style and use reliable sources. These can include your text and laboratory manual as well as Web Resources listed within the units of the course home page. Cite references in the text of the lab report, for example, (Bennion & Scheule, 2010 p. 21). List all references at the end of the lab report. Include chapters and page numbers in the text or

laboratory manual. Other sources in addition to your text and laboratory manual are listed below.

- Institute of Food Technologists. (Institute of Food Technology, 2010)
- USDA National Agricultural Library (USDA National Agricultural Library, 2010).
- Food and Nutrition Research Journal (open source journal).
- Pub Med
- Food Science and Technology Abstracts
- Kaplan's Online Library

References

APA Manuscript Style. (2009). My Studies. Writing and Math Centers. Writing Center.

Writing Reference Library. Research, Citation & Plagiarism. Retrieved from

<https://kucampus.kaplan.edu/Platform/AcademicSupport/AcademicSuccess/PeerTutoring/Writing/resources/resource43.aspx>.

(2010). Chapter 1: Food Choices and Sensory Characteristics. In: Bennion, M., Schuele, B.

(Eds.), *Introductory Foods*. 13th Ed. (pp. 1-18). Upper Saddle River, NJ: Pearson Education, Inc.

(2008). Glossary of Common Terms Used in Food Preparation. In: Conforti, F.D. (Ed.) *Food*

Selection and Preparation. A Laboratory Manual. 2nd Ed. (pp. 196-208). Ames, IA: Wiley-Blackwell.

Food Technology. (2010). Institute of Food Technologists. Retrieved from

<http://www.ift.org>.

NAL Catalog. (2010). USDA National Agricultural Library. Retrieved from

<http://agricola.nal.usda.gov/>

Food and Nutrition Research Journal (open source journal). Register at:

<http://www.foodandnutritionresearch.net/index.php/fnr/user/register>

PubMed. U.S. National Library of Medicine . National Institutes of Health. Pubmed.gov.

Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed>

Food Science Central. Food Science and Technology Abstracts. Retrieved from

<http://www.foodsciencecentral.com/>