FOOD CONSUMERISM

A Laboratory Manual for Meal Management

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Preface

This manual was developed for use in courses in meal management, food consumerism, food management, and/or consumer education. Much information must be processed before consumers can make wise decisions about foods and nutrition; working with this lab manual will help develop awareness, skills, and appropriate criteria needed in making such decisions.

Each unit in Food Consumerism follows a similar format. The introduction to the unit includes discussions of the basic concepts and current trends related to the topic, and an explanation of why the topic is important. The objectives provide expected learning outcomes. The references include both essential readings for the unit and suggested readings for those who wish to gain additional knowledge. The procedure section gives detailed instructions for students; self-instructional sample problems are included when necessary. Data sheets are included to assist the students in organizing data they have collected. The discussion section may be used to summarize and broaden the topic studied.

Each laboratory unit stands alone. A variety of units may be selected that will build on each other and complement other student experiences. Therefore, the lab topics may be used in any order. It is expected that instructors will adapt and expand the lab experiences to meet the needs of their particular course objectives and time requirements.

The following references are frequently cited throughout the manual, and should be made available for use by students in completing the laboratory exercises:

American Home Economics Association. *Handbook of Food Preparation*. Washington, D. C. 1975.

Kinder, F. and N. Green. *Meal Management*, Fifth edition. Macmillan, New York. 1978.

United States Department of Agriculture. *Family Food Budgeting*. Home and Garden Bulletin No. 94. Washington, D. C. 1976.

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Contents

Introduction

Consumers of food must make many decisions related to food consumption activities—planning, purchasing, preparing, storing, using energy, cleaning up, and recycling. *Food Consumerism* is designed to teach students to explore and practice various aspects of these behaviors. Students will also gain information upon which to make decisions in foods and nutrition that are appropriate to their personal and future professional needs.

The objectives of this manual are

1. To give the student experience with tools and guidelines for making decisions that are reasonable and appropriate for different situations related to nutrition and foods.
2. To help the student manage available resources to achieve optimum acceptability of meals and food products.
3. To help the student become an informed and effective manager of food resources.

The Human Ecological Model as described by Hook and Paolucci has been used in the activities and discussion throughout this lab manual. Those involved in the laboratory experiences will begin to appreciate the complexities and interrelationships of food consumerism activities for families.

The Human Ecological Model of man and his environment has four interrelated components: the individual, the natural environment, the constructed environment, and the behavioral environment. In food consumerism activities, all of these components are involved in decision making (Figure 1).

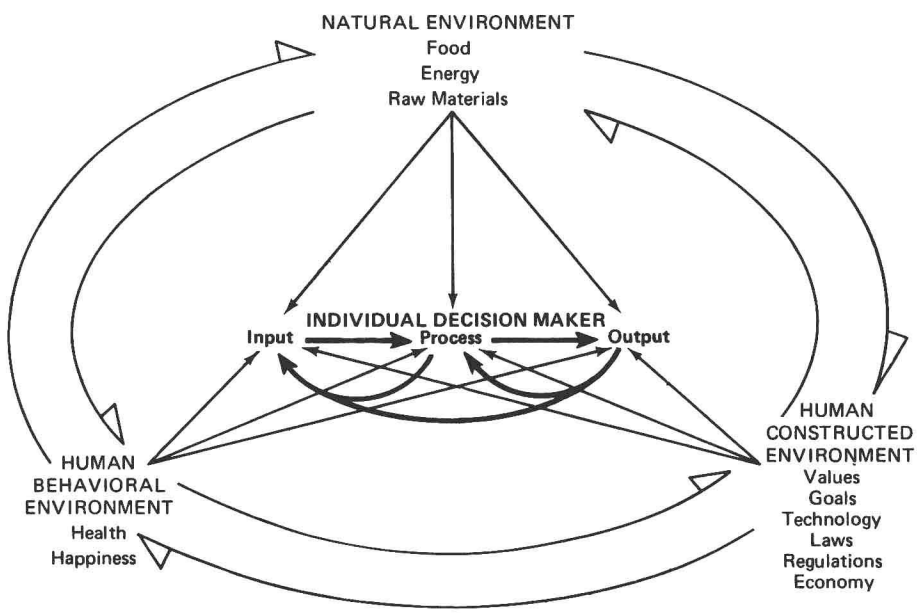

Figure 1. Human Ecological Model.
Adapted from: M. Jacobson-Bubolz, J. Eicher, and M. S. Sontag. The human ecosystem: conceptual clarification. Michigan State University. Accepted for publication, *Journal of Home Economics*, May 1978.

The individual decision maker can be a person, a family, a neighborhood, a community, or a nation, depending upon the ecosystem of focus. In this manual, the individual decision maker is a person and the ecosystem of focus is the family.

The various environments will exert different amounts of influence in different decision-making situations at different times, depending on the ecosystem of focus. This is illustrated by the double arrows depicting the interaction of environments in Figure 1. In some decisions, the decision maker interacts with the constructed environment more than with the natural environment. In other decisions, the natural and behavioral environments will have the most influence. Each decision made has influence from, and exerts influence on, each of the three environments.

For example, a consumer is making a decision to buy either homemade macaroni and cheese, frozen macaroni and cheese, or a boxed macaroni and cheese mix. All three involve components of the natural environment (food, energy, packaging materials), and the constructed environment (packaging, equipment, transportation). The behavioral environment is the ability of the food preparer, the satisfaction from preparing the food product, and the health of those who eat it.

Another distinction of the Human Ecological Model is that a decision affects all parts of the ecological environment; a decision made in one environment ultimately affects all the environments. Every decision in food consumerism has input in the form of information, skills, equipment, time, food, and so on. The individual manipulates the input by buying, cooking, or using his ability. Output may be a food product, meal satisfaction, or health. Output and process provide information, a basis for evaluation, and feedback. Output gives feedback for either the process or the input or both. Process provides feedback to input.

In the macaroni and cheese example, the food preparer knows how to make macaroni and cheese, and has the recipe, ingredients, equipment, and time (*input*). As the product is being made (*process*), the preparer discovers that the baking dish is not big enough for the whole recipe (*process* feedback to *input*). After the macaroni and cheese is baked (*output*), it is determined that the oven temperature was too high (*output* feedback to *process*), and that the family did not like it (*output* feedback to *input*). As a result, the next time the food preparer will try a different recipe, use a frozen product, or try a box mix (*input*).

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Hook, N., and B. Paolucci. The family as an ecosystem. *Journal of Home Economics*, May 1970:315.

Vaines, E. *An Ecological Systems Framework for Home Economics/Human Ecology: The Linkage of Environment, Energy, and Organism as Family*. Unpublished doctoral dissertation, Michigan State University, 1974, 317 pp.

Jacobson-Bubolz, M., J. Eicher, and M. Sontag. "The Human Ecosystem: Conceptual Clarification." Accepted for publication, *Journal of Home Economics*, May 1978.

UNIT

1

Laboratory Procedures

Students are expected to read the laboratory manual and text assignments before each laboratory session. Students should be knowledgeable in the basic skills of food preparation and food handling.

Students must treat equipment and utensils with care. In the event of any breakage or other damage, the student should inform the instructor.

Food Preparation and Sampling

1. Always fill a tasting spoon from a serving spoon. *Never* put a tasting spoon in the food. *Do not lick utensils.*
2. Use a pastry brush, a small piece of waxed paper, or a small piece of paper towel for greasing pans.
3. Wash fresh fruits and vegetables in plenty of water before using. Wash can lids before opening.
4. Handle a drinking glass only by the base and a cup only by the handle. Touch utensils and silverware by the handles. Use all other dishes and equipment in a manner that minimizes contact with hands.
5. Wash hands before handling food. Wipe hands on a paper towel, not on a dish towel.
6. Wash hands after using a handkerchief or touching hair.
7. Do not snitch pieces of food during preparation.
8. Use appropriate measuring techniques and mixing utensils.
9. Do not sit on supply table or counters.

Working and Cleaning Efficiency

1. Study directions and organize work before starting laboratory assignment.
2. Check equipment in units before and at close of period. Obtain missing pieces.
3. Arrange equipment for maximum efficiency. Put nothing on work surfaces except food and equipment. Keep work areas clean, uncluttered, and organized.
4. Respect cookbooks. Copy recipes onto cards or paper for use in the laboratory.
5. Preheat ovens when necessary. Allow about 10 minutes.
6. Keep dish towels off shoulders and arms.
7. Use trays and carts for gathering supplies.
8. Measure ingredients accurately. Use open containers first. Replace lids and covers. Clean up spills promptly.
9. Clean up dishes as you go along. Scrape, rinse, soak, and stack dishes before washing. Have as many dishes as possible washed before sampling food or serving meal.

10. Leave oven door slightly ajar until oven is cool. Wipe up any spilled food or grease with soapy cloth. Rinse and dry thoroughly.
11. Clean under sink mats.
12. Wipe and dry counters. Place used dishcloths and towels in designated area.
13. Wrap bones in paper towel and place in wastebasket. Rinse jars and cans before discarding.
14. Place garbage in designated container.
15. Place cutting boards on counters for all cutting.
16. Wash cutting boards with soap and hot water. Dry thoroughly.
17. Spot clean napkins if necessary, and place on designated tray.
18. Spot clean tablecloths if necessary, and place on hanger.
19. Spot clean place mats if necessary. Return to storage cabinet. If you are unable to remove the stain, inform instructor.

Storage Efficiency

1. Return all clean equipment to *where you found it*.
2. Refrigerate milk in original container as soon as supply has been obtained. Do not put excess milk back into container; discard it instead.
3. Wrap fresh vegetables and fruit in plastic film and refrigerate.
4. Cover opened cans with plastic film and refrigerate.
5. Check with instructor for disposal of prepared food products.
6. Return potatoes, onions, fats and oils, dry ingredients, and unopened cans to supply table.

Safety Rules

1. Clean up spills immediately.
2. Keep unit drawers and cabinet doors closed.
3. Know where to find and how to use first-aid equipment.
4. Know where to find and how to use fire extinguisher.
5. Eliminate congestion and confusion by establishing a good working traffic pattern.
6. Report all injuries to instructor immediately.
7. Do not subject pitchers and other glassware to extreme changes in temperature. Rinsing glassware with moderately hot water will warm them up to withstand higher temperatures.
8. Do not place chilled baking dishes (except for Corning Ware) in a preheated oven. These baking dishes may be placed in a "cold" oven and allowed to preheat with the oven. Corning Ware may also be used on top of the range.

CRITERIA TO BE USED IN DETERMINING PERFORMANCE IN THE LABORATORY AND IN MEAL MANAGEMENT

Criteria for Laboratory Performance

1. Dresses properly for lab work.
2. Follows correct lab procedures.
3. Uses correct food preparation techniques.
4. Uses proper equipment safely.
5. Follows sanitation rules and methods.
6. Keeps work area as clean and neat as possible.

7. Follows through on instructions.
8. Gives assistance when needed.
9. Completes satisfactory cleanup.
10. Accomplishes work in time allotted.

Criteria for Meal Management

1. Plans menus with family and budget in mind.
2. Completes forms and turns in on time.
3. Uses appropriate table setting and meal service.
4. Uses recipes from accurate sources.
5. Gives appropriate instructions, both verbal and written.

UNIT

2

Sensory Evaluation of Food

Sensory evaluation of food is a method for describing taste, aroma, texture, appearance, color, and the overall acceptability of food. The results from objective tests of texture and color (firmness, brittleness) are often correlated with sensory evaluations to describe more completely the characteristics of food.

Two types of sensory evaluations are used with consumers, *difference* tests and *preference* tests. In a difference test, one is asked to indicate which sample is different from the others, or to rank the samples according to a characteristic. In a preference test, one is asked to indicate a degree of acceptability for one sample.

Sensory evaluations are conducted throughout all stages of the food development and marketing process. Trained judges can detect small differences in samples that the consumer cannot detect. However, the consumer has the most direct influence because he or she decides whether or not to buy the product.

OBJECTIVES

1. To define two categories of sensory evaluations: difference and preference.
2. To define and practice some specific types of sensory evaluations.
3. To discuss sensory evaluation methodology with emphasis on control factors.
4. To discuss application of sensory evaluation principles to family food-purchasing decisions.

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PROCEDURE

1. Difference Test—Food Ranking

Taste three samples of two different foods. Can you detect any variation among the samples? Can you taste the different levels of sweetness? In the spaces that follow, indicate the sweetness ranks using the code number of your samples.

Sweetest _____ _____

In-between _____ _____

Least sweet _____ _____

2. Preference Test—Forced Choice

Make a choice of the sample you prefer. Even if you liked all the samples, or disliked all the samples, you must make a choice.

Preferred sample _____ _____

3. Difference Test—Triangle

You will be presented with three samples: two are alike and one is different. Taste, smell, feel, and look at all the samples in order to detect which sample is different. Do this for both sets of samples.

Sample 314 _____ Sample 628 _____ Sample 542 _____

Sample 411 _____ Sample 222 _____ Sample 331 _____

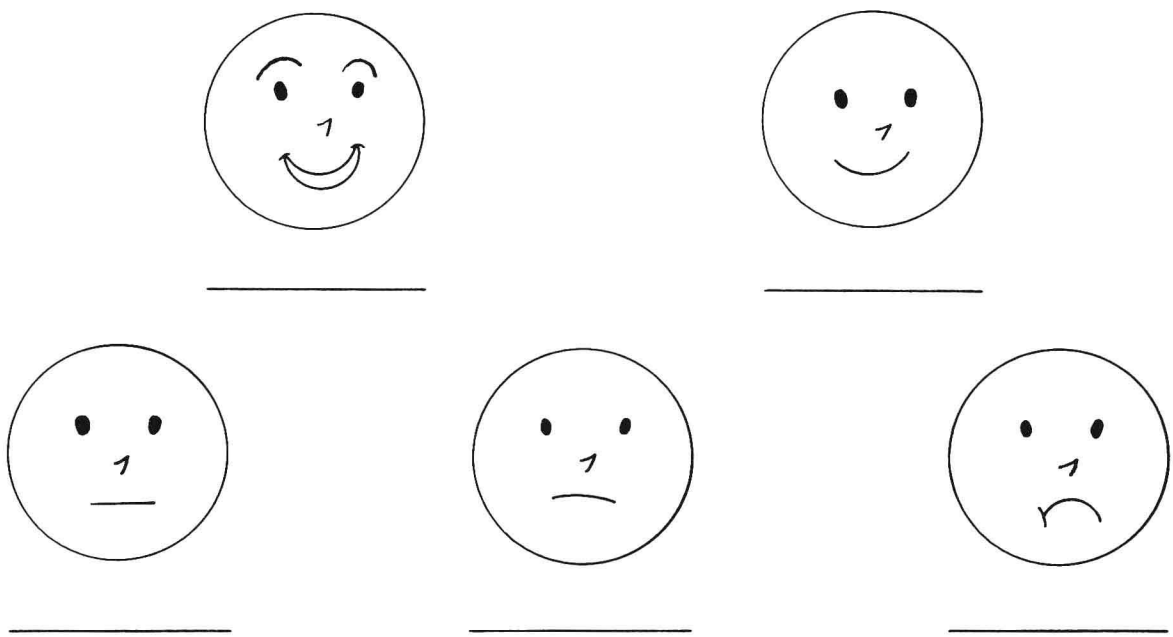
What differences did you detect in the odd sample? Explain the differences in characteristics that apply to this sample.

	Food	*Food*
color		
flavor		
aroma		
texture		
appearance		
mouth feel		

Calculate the cost per ounce of each product. Would the cost difference influence your selection of one product or another?

4. Preference Test—Smiley Face Hedonic

This is Smiley Face Hedonic (Preference) Score Card. It is a simple and graphic way to give an indication of your feelings. Use this score card to *indicate your feelings about nonfat dry milk.*



5. Preference Test—Rating Scale

You are asked to taste the samples of milk and other foods and indicate on the following charts how much you like or dislike each sample. The rating scale of 1 to 5 compares with the Smiley Face Hedonic Score Card.

Rating Scale

1 = like extremely
2 = like moderately
3 = neither like nor dislike
4 = dislike moderately
5 = dislike extremely

Code	*Milk*	*Rating*	*Most Outstanding Characteristic*	*kcal 8 oz*	*g Protein 8 oz*	*mg Ca 8 oz*	*g Fat 8 oz*	*Cost 8 oz*

Additional comments:

Code		*Rating*	*Most Outstanding Characteristic*					

Additional comments:

DISCUSSION

1. How would sensory evaluations be used in a commercial food company? Restaurant? Family situation? Hospital?
2. Which type of consumer preference test do you like best, Smiley Face or Rating Scale? Why? When do you think each type of test should be used?
3. What information does the Forced Choice give to the experimenter?
4. Why might food companies use Ranking Tests for their food products?
5. Why is it important to do sensory evaluations on food products?