

QUALITY COMPARISON OF REGULAR- AND
QUICK-COOK OATMEAL

by

SANDRIA LEIGH MCMILLON GODWIN

B. S., Kansas State University, 1971

104

349

5839

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

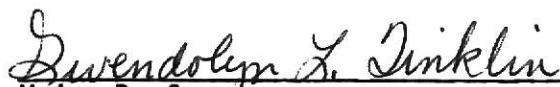
MASTER OF SCIENCE

Department of Foods and Nutrition

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1973

Approved by:


Major Professor

LD
2668
R4
1973
663
C.2

TABLE OF CONTENTS

	Page
INTRODUCTION	1
MATERIALS AND METHODS	3
Procedure	3
Methods of Evaluation	4
Analysis of Data	5
RESULTS AND DISCUSSION	6
SUMMARY	16
APPENDIX	17
ACKNOWLEDGEMENTS	20
REFERENCES	21

INTRODUCTION

The use of convenience foods increased 34% from 1955-65 (Bivens, 1969) but the public still demanded more (Seone, 1971). Convenience foods, as used in this report, refers to foods which have services added to the basic ingredients to reduce the amount of preparation required in the home (Harp and Dunham, 1963). Hoofnagle and Gallimore (1971) reported that consumers have been conditioned to readily accept convenience foods appearing on the supermarket shelf. Quick-cook oats is a good example of a convenience food.

The oats for regular- and quick-cook oatmeal are processed in much the same way. They are cleaned, then dried and roasted for one to one and one-half hours. The roasted oats are placed in a huller where they are thrown against a rubber liner to loosen and remove the hull from the groat, the edible part of the oat kernel. Whole groats are used in the manufacture of the regular-cooking oats; whereas, for quick-cooking oatmeal the groats are cut into two or three pieces. Both products are steamed to soften them slightly, then rolled to the desired thickness (Anonymous, 1967).

The sale of quick-cook oats has surpassed that of the regular-cook products because of ease and quickness of preparation (Anonymous, 1967). Consumers place a high value on time and wish to save it, according to Kinder (1973). Davis et al., (1971) and Muschik (1971) found that time-saving was most important to the majority of consumers who reported using convenience foods. Kolmer and Gartner (1971) reported that quick-cook oatmeal required approximately two-thirds as much preparation time as regular-cook. McWilliams (1966) stated that quick-cooking cereals have disodium phosphate added to decrease the amount of heat required to penetrate the granule. However, the manufacturer of the oatmeal used in the present

study indicated no additives in the quick-cook oatmeal. Thus, the only known difference between the two uncooked products was the thinness of the flake (Anonymous, 1967; Terminology Committee of AHEA, 1971).

In a study conducted at Kansas State University, persons from 2183 households in 2 Kansas counties were interviewed. Hot breakfast cereals were reported to be consumed in 78% of those households with 71% of them using the quick-cooking variety (Tinklin, 1973).

The public is influenced in its acceptance and selection of food by many factors, including convenience and quality of the product (Amerine et al., 1965) as measured by sensory, chemical, and physical means (Palmer, 1972). Quality, according to Stewart and Amerine (1973) can be referred to as the summation of the physical and chemical properties of food, including kinesthetic factors, appearance factors, and odor and flavor components. Harp and Dunham (1963) reported that the quality of a product may be more important than convenience to some consumers. Studies have been reported which compared the quality of several types of convenience foods (Anonymous, 1963; Anonymous, 1970), but none were found which compared the quality of oatmeal products.

The present study was conducted to ascertain any quality differences existing between regular- and quick-cook oatmeal.

MATERIALS AND METHODS

Packages of one brand (Quaker) of regular- and quick-cook oats were purchased at one time from a local supermarket. The oats of each type were mixed, to insure homogeneity of the products, and stored at 18°C until used. A randomized complete block design with 15 replications was used in the preparation of the oatmeal.

Procedure

The manufacturer's directions were followed, except household measures were changed to weights and controls for cooking; these changes were established in preliminary work. The formula included 960 ml water, 6 g salt, and either 141 g regular-cook or 129 g quick-cook oats. The water and salt were brought to a boil in a heavy 2-1/2 qt cast-aluminum saucepan. When ready to cook, oats were added to the salted water gradually during a 30 sec time period and stirred once each second. The stirring pattern used consisted of 5 horizontal strokes, 5 vertical strokes, 5 clockwise circular strokes, and 5 counter-clockwise circular strokes. Stirring was repeated after all oats were added to the water, at the end of each min of cooking, and prior to covering the pans. Quick-cook oats were cooked a total of 1 min 30 sec, whereas regular-cook oats were cooked 5 min 30 sec. Following cooking, pans were covered, removed from the heat, and placed on an electric warming tray for 4 min to maintain uniform temperature until evaluated.