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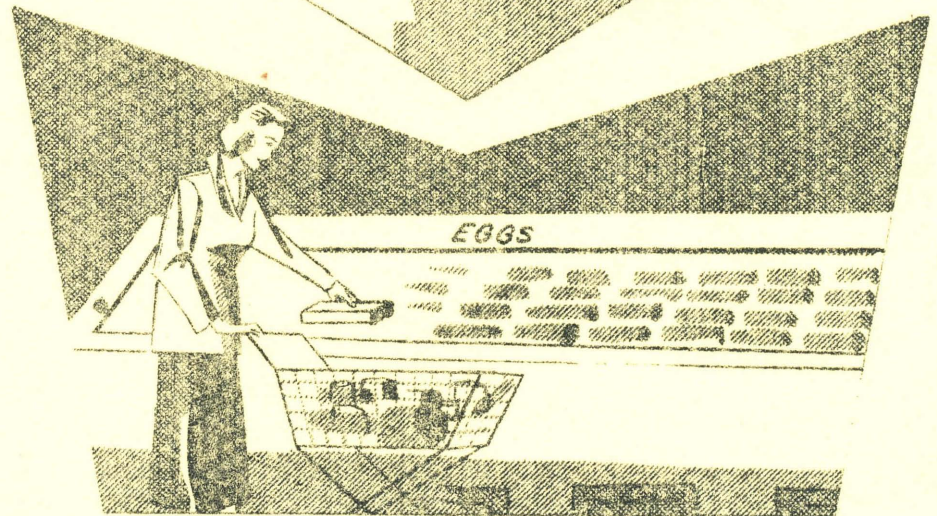
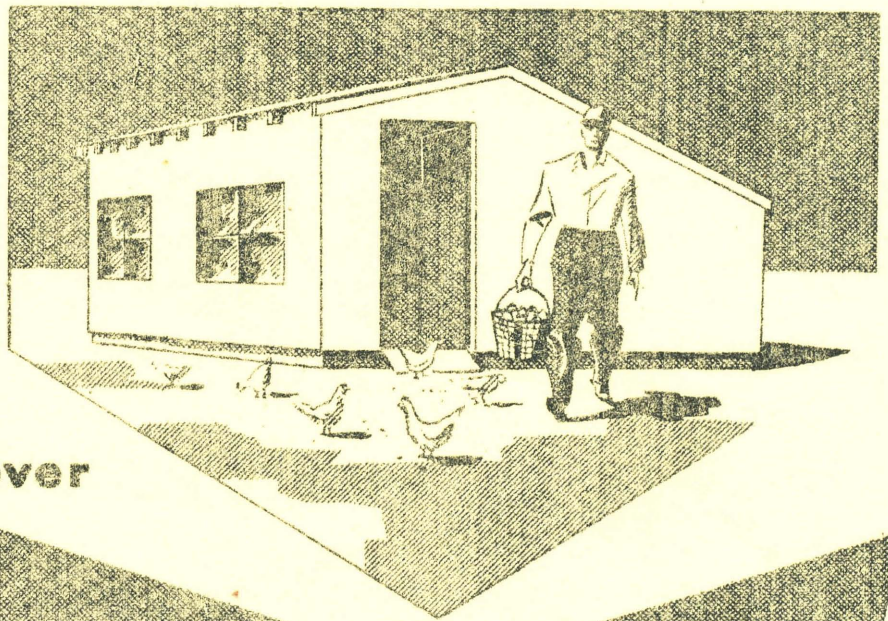
Egg Marketing III
Michigan State University Cooperative Extension Service
4-H Club Bulletin
N.A.
Issued N.D.
14 pages

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EGG MARKETING III

**Suggested
Experiments
For
4-H'ers 14 and over**



Michigan State University
Cooperative Extension Service
4-H Program
East Lansing, Michigan

Dear 4-Her:

Now that you have completed the Experiments suggested in 4-H Bulletin 187.2A, you are ready to move on to more difficult Experiments outlined in this bulletin.

In this bulletin are these topics:

What's In An Egg?
Does Advertising Pay?
How Much Does It Cost To Market Eggs?
Is There A Difference Between Candled Eggs and Broken-Out Grade?

These Experiments will probably require more equipment and a greater skill on your part than those you have already completed. You may want to make arrangements with your school chemistry teacher to use some of the equipment necessary for some of these experiments. You might also ask your teacher for some new ideas for experiments with eggs, and have her assist you with things you do not understand. Perhaps your club leader can be of help too. Good Luck!

WHAT'S IN AN EGG?

Suggested for age group 14 and over

OBJECTIVE: When you buy an egg, what do you get? This experiment will help you answer that question in rather specific terms; and help you see how proper egg handling and marketing helps to make eggs a better product.

(Do either Procedure A or B)

MATERIALS: Fresh egg (day old)
 Aged egg (room temperature for 10 days)
 Gram scale - - - For Procedure A (available from National Agricultural Supply Company, Ft. Atkinson, Wisconsin)
 Graduated cylinders (100 to 1000 ml.) - - - For Procedure B (available from Aloe Scientific, 5655 Kingsbury, St. Louis 12, Missouri)
 Pipette (either 9 or 17.6 ml.) - - -For Procedures A and B (available from National Agricultural Supply Company, Ft. Atkinson, Wisconsin)
 Dinner plate
 Small paper cup

PROCEDURE:

A. What's In An Egg - - -by weight?

1. Weight a fresh egg to nearest gram.
2. Wet a dinner plate and break egg on plate.
3. Weight a paper cup to nearest gram and record weight.
4. Wet pipette on both inside and out, and pipette thin albumen into paper cup. Weight cup and contents to nearest gram and subtract weight for cup. Record.
5. Remove yolk by very carefully lifting it from albumen and place in cup. Record weight to nearest gram.
6. Pour rest of contents (thick albumen) from plate into cup. Record weight to nearest gram.
7. Record weight of shell to nearest gram.
8. Repeat procedure for aged egg and record on attached sheet.

B. What's In An Egg --- - by volume?

1. The parts of the egg are figured by the amount of water displaced. Fill 1000 ml. cylinder with 500 ml. water. Place a whole egg in cylinder and record rise in water.
2. Wet a dinner plate and break egg on plate.
3. Fill 100 ml. graduate with 20 ml. of water.
4. Wet pipette on both inside and out and pipette thin albumen into graduate. Record rise in water level. (Be careful to record new water level before placing another part of egg in the graduate).

5. Remove yolk by very carefully lifting it from albumen and place in graduate (yolk may have to be broken to fit in graduate). Record rise in water level.
6. Pour rest of contents (thick albumen) from plate into graduate. Record rise in water.
7. Place shell in 100 ml. graduate (It may have to be "crashed in order to fit.) Record rise in water.
8. Repeat procedure for aged egg and record on attached sheet.

WHAT'S IN AN EGG?

NAME

BY WEIGHT:

<u>FRESH EGG</u>		<u>AGED EGG</u>	
Whole egg	grams 100%	.....	grams %
Thin Albumen	grams ..... %	.....	grams %
Thick Albumen	grams ..... %	.....	grams %
Yolk	grams ..... %	.....	grams %
Shell and Membranes	grams ..... %	.....	grams %

BY VOLUME

<u>FRESH EGG</u>		<u>AGED EGG</u>	
Whole egg	ml ..... %	.....	ml %
Thin Albumen	ml ..... %	.....	ml %
Thick Albumen	ml ..... %	.....	ml %
Yolk	ml ..... %	.....	ml %
Shell and Membrane	ml ..... %	.....	ml %

MY FINDINGS: (circle the correct answers)

1. The amount of thin albumen INCREASES DECREASES as the egg ages.
2. The amount of thick albumen INCREASES DECREASES as the egg ages.
3. Shell thickness IS IS NOT affected by age.
4. The yolk becomes BIGGER SMALLER as an egg ages.

DOES ADVERTISING PAY?

Suggested for age group 14 and over

- OBJECTIVE:** The number of eggs Americans eat per year has been declining in recent years. In 1951 each person in the U. S. ate an average of 392 eggs; in 1960 each person ate only 325 eggs. What has happened? Has there been a lack of promotion? To measure the usefulness of promotional material, you are conducting this study.
- MATERIALS:** 10 egg customers
6 different types of carton insert promotional leaflets (available from Michigan Allied Poultry Industries, Anthony Hall, M. S. U., East Lansing, Michigan - - -order one (1) of each kind for each customer).
- PROCEDURE:**
- A. Divide your egg customers into two groups with approximately the same number of eggs being sold to each group. For 6 weeks enclose insert promotional leaflets in the eggs sold one group, but not in the other group.
 - B. At the end of 6 weeks compare the number of eggs sold to the two groups. Also record the comments of customers relative to the carton insert leaflets.
 - C. Report your results.

DOES ADVERTISING PAY?

Eggs Purchased (Dozens) By Customers Each Week

Time Weeks	CUSTOMERS																			
	With Carton Inserts										Without Carton Inserts									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1																				
2																				
3																				
4																				
5																				
6																				
Total																				

COMMENTS: (what customers said about inserts)

HOW MUCH DOES IT COST TO MARKET EGGS?

Suggested for age group 14 and over

- OBJECTIVE:** Efficiency in egg handling is being streamlined and is fast matching the efficiencies of production methods. A major point to consider is the return per hour you receive for doing the marketing.
- MATERIALS:** Nothing more than a pencil, paper and clock or watch.
- PROCEDURE:**
- A. For a one month period measure the time required to clean, grade, package, deliver and perform other tasks involved in preparation and selling of your eggs.
 - B. During the same period figure all expenses:
 1. Eggs - - - what they actually cost you
 2. Cartons, cases and flats - - - what they actually cost.
 3. Transportation - - - if your (family) car or truck is being used to either pick-up or deliver eggs a fee of 10¢ per mile should be used.
 4. Equipment - - - most equipment (candling light, egg washer, etc.) can be depreciated over a 3 to 5 year period. Monthly rate can be figured from that.
 5. Electricity and water - - - used in candling, washing and storing eggs.
 6. Other expenses - - - such as carton inserts, sanitizer-detergent, PENB dues, etc.
 - C. At the end of month subtract expenses from income. The amount left over is LABOR INCOME. Divide labor income by number of hours involved in the preparation and selling of your eggs. This will be LABOR INCOME PER HOUR.
 - D. Fill out income statement.

HOW MUCH DOES IT COST TO MARKET EGGS?

NAME

INCOME STATEMENT

For Period From To

INCOME:

DOLLARS

(1) Egg Sales

Dozens sold:

- a - Jumbo @ \$
- b - X-Large @ \$
- c - Large @ \$
- d - Medium @ \$
- e - Small @ \$
- f - Other @ \$

(2) Other than egg sales (rebates, etc.)

TOTAL INCOME

EXPENSES:

- (1) Eggs purchased
- (2) Cartons and cases
- (3) Transportation (@ 10¢/mile)
- (4) Equipment (dep. @ 20% yearly)
- (5) Utilities (electricity and water)
- (6) Other expenses (sanitizer - detergent, oil, carton inserts, etc.)

TOTAL EXPENSES

LABOR INCOME (total income minus expenses)

Total hours worked

LABOR INCOME PER HOUR

IS THERE A DIFFERENCE BETWEEN CANDLED GRADE
AND
BROKEN - OUT GRADE?

Suggested for age group 14 and over

OBJECTIVE: Candling is not an exact measure of egg quality. It involves the factor of human judgement --- which varies from person to person and from day to day for the same person. To achieve a higher standard of quality control, a break-out measurement of egg quality in terms of "Haugh Units" is used. This is a simple scale reading based on egg weight and the micrometer measurement of the height of its thick albumen (white).

The objective of this experiment is to compare the accuracy of candling as opposed to the break-out method.

MATERIALS: Egg quality slide rule (available from the Kaw Company, 223 E. Hanover Street, Trenton 8, New Jersey)
Egg scale
Egg candler
Dinner plate
"Marketing Eggs" - - - Farmers' Bulletin 1378 (available from Poultry Science Department, 113 Anthony Hall, M.S.U., East Lansing, Michigan)

PROCEDURE:

- A. Select at random 6 eggs per month which you have candled and given a U.S.D.A. grade (AA, A, B or C). Weigh and then break these eggs and compute a "Haugh" score (following directions on slide rule). Also grade broken egg according to U.S.D.A. standards. Follow this procedure monthly for at least 6 months.
- B. Report on attached sheet.

IS THERE A DIFFERENCE BETWEEN CANDLED
GRADE AND BROKEN - OUT GRADE?

NAME

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

IS THERE A DIFFERENCE BETWEEN CANDLED
GRADE AND BROKEN - OUT GRADE?

NAME

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

IS THERE A DIFFERENCE BETWEEN CANDLED
GRADE AND BROKEN - OUT GRADE?

NAME

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

IS THERE A DIFFERENCE BETWEEN CANDLED
GRADE AND BROKEN - OUT GRADE?

NAME

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

IS THERE A DIFFERENCE BETWEEN CANDLED
GRADE AND BROKEN - OUT GRADE?

NAME

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

IS THERE A DIFFERENCE BETWEEN CANDLED
GRADE AND BROKEN - OUT GRADE?

NAME

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			

Month

Egg No.	Candled Grade	Broken - Out	
		Grade	Haugh Score
1			
2			
3			
4			
5			
6			