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Efficient Meat Production III
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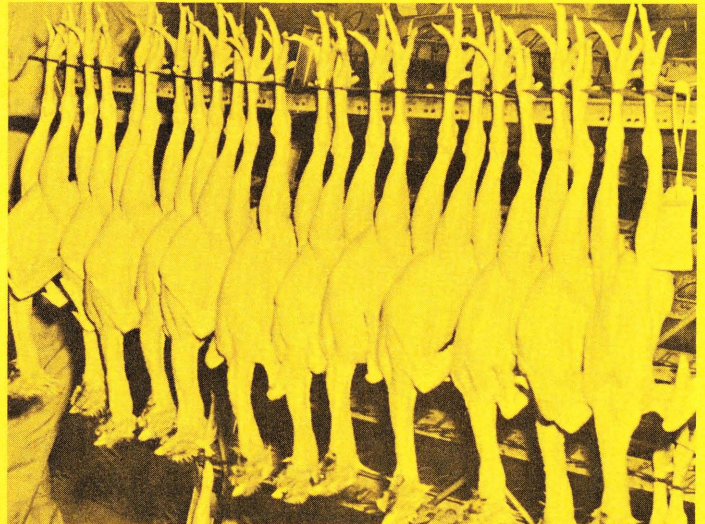
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Efficient Meat Production III

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



Dear 4-H'er:

Now that you have completed the experiments suggested in 4-H Bulletin 187, 4B you are ready to move on to more difficult experiments which are outlined in this bulletin.

These experiments will probably require more equipment and a greater skill on your part than those you have already completed. However, when carrying out the experiments described herein, don't forget to keep accurate records of production costs. Good luck!

GRADING POULTRY

Suggested for age group 14 and over

OBJECTIVE: Methods of killing and dressing poultry have definite effects on the appearance and grade of poultry; however, other factors such as genetics, feeding, handling and grower management practices can affect the grade and appearance of poultry before it ever reaches the processor.

MATERIALS: Birds - 20,9-week old broilers either grown or purchased by the member.
 Processing equipment (given in Experiment #2 of 4-H Bulletin 187.2C).
 Bulletins (available from Poultry Science Department, 113 Anthony Hall, MSU, East Lansing, Michigan).
 1. Poultry Grading and Inspection, Agriculture Information Bulletin No. 173, USDA.
 2. Processing and Marketing Farm Poultry, Marketing Bulletin No. 7 USDA.

PROCEDURE:
 A. Grade the 9-week old broilers according to the standards of quality for live poultry given in USDA Agriculture Information Bulletin No. 173.
 B. After giving the live birds a grade, process them as described in Experiment #2 of 4-H Bulletin 187.2C.
 C. Then once again grade the birds according to the standards of quality for dressed and ready-to-cook poultry given in USDA Agriculture Information Bulletin No. 173.
 D. Record the live and dressed grades on the attached report sheet.

- E. Questions:
1. How would you determine whether the bird is
 - (a) Fowl _____
 - (b) Stag _____
 - (c) Roaster _____
 - (d) Broiler & Fryer _____
 2. Can there be any evidence of disease in individual birds graded under U.S. Grades? _____
 3. Distinguish between defects and deformities. _____
 4. What are the factors on which the U.S. Grades are based?

a) Live _____ _____ _____ _____	b) Dressed & Ready to Cook _____ _____ _____ _____
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 5. Why is feathering an important factor in live grades?

(REPORT SHEET)

GRADING LIVE POULTRY

Name _____

Bird	Health and Vigor	Feathering	Con-formation	Flesh-ing	Fat Cov-erage (Finish)	Freedom of Defects	Grade
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

GRADING DRESSED POULTRY

Name _____

Bird	Conform- ation	Flesh- ing	Fat Cov- erage (Finish)	Freedom of Pinfeathers	Freedom of Bruises	Freedom of Freezer Burn*	Grade
1							
2							
3							
4							
5							
6							
7							
8							
9							
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
0							

*Applies only to stored frozen birds

SHRINKAGE DIFFERENCES BETWEEN CLASSES OF LIVE POULTRY
Suggested for age group 14 and over

OBJECTIVE:

Poultry is grouped according to "kind" and "class." "Kind" refers to the different species of poultry, such as chickens, turkeys, ducks, geese, guineas and pigeons. The kinds of poultry are divided into "classes" which are essentially of the same physical characteristics, such as fryers or hens. During the processing of the different classes of poultry certain classes such as broilers lose a greater proportion of their weight.

MATERIALS:

Birds - 10, 9-week old broilers and 10, 1½-year old laying hens either grown or purchased by the member.
Processing equipment (given in Experiment #2 of 4-H Bulletin 187.2C).

Bulletins (available from Poultry Science Department, 113 Anthony Hall, MSU, East Lansing, Michigan).

1. Poultry Grading and Inspection, Agriculture Information Bulletin No. 173, USDA.
2. Processing and Marketing Farm Poultry, Marketing Bulletin No. 7, USDA.

PROCEDURE:

A. Process the birds as described in Experiment #2, of 4-H Bulletin 187.2C.

B. Weigh the birds at the following times and record the weights.

1. Before bleeding (live weight)
2. After bleeding and removing feathers (dressed weight)
3. After removing crop and intestines (drawn weight), weigh the neck, heart, liver and gizzard with the bird in this case.

C. Report your results

1. Average live, dressed and drawn weights for broilers and hens.
2. Percent loss live to drawn (shrinkage) for broilers and hens.

D. Questions

1. Which classes of live poultry showed the greatest shrinkage during processing? Why? _____

2. Which classes of live poultry would show the greatest shrinkage during transportation? Why? _____

SHRINKAGE

Name _____

BROILER			LAYING HENS			
Bird	Live Weight	Dressed Weight	Drawn Weight	Live Weight	Dressed Weight	Drawn Weight
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total	(A)	(B)	(C)	(D)	(E)	(F)

	Broiler	Hen
Average live weight	_____	_____
Average dressed weight	_____	_____
Average drawn weight	_____	_____
% loss live to dressed $\frac{B}{A} \times 100 =$	_____	$\frac{E}{D} \times 100 =$ _____
% loss dressed to drawn $\frac{C}{B} \times 100 =$	_____	$\frac{F}{E} \times 100 =$ _____
% loss live to drawn $\frac{C}{A} \times 100 =$	_____	$\frac{F}{D} \times 100 =$ _____

BREED COMPARISONS
Suggested for age group 14 and over

- OBJECTIVE: At the present the greatest demands from processors and consumers is for a yellow skinned, white feathered bird. A good broiler chick should have:
1. The ability to live
 2. Fast growth
 3. Quick feathering
 4. Good finish at 8-9 weeks
- Considerable difference exists between the different breeds in several of the above mentioned factors.
- MATERIALS: Birds - 20-25 broiler type chicks and 20-25 egg laying type chicks. Brooding and growing facilities for two groups of chicks 1 day to 9 weeks of age.
- PROCEDURE:
- A. Brood and grow the two groups of chicks from 1 day of age to 9 weeks of age, separately (pen #1, broiler, pen #2, egg laying)
 - B. Maintain records weekly, feed fed, daily mortality, 9-week body weight and 9-week live grades (for live grading of poultry see experiment #1 of this 4-H Bulletin).
 - C. Report your results:
 1. Feed fed Pen #1 & 2
 2. Average body weight Pen #1 & 2
 3. Mortality - % for Pen #1 & 2
 4. Feed efficiency for Pen #1 & 2
 5. Live grade for Pen #1 & 2

BREED COMPARISONS

Name _____

Week	Broiler (Pen #1)		Egg Laying (Pen #2)	
	Feed Fed	Mortality	Feed Fed	Mortality
1				
2				
3				
4				
5				
6				
7				
8				
9				
Total	(C)	(D)	(E)	(F)

Feed efficiency

$$\text{Pen \#1 } \frac{C}{A} = \underline{\hspace{2cm}}$$

$$\text{Pen \#2 } \frac{E}{B} = \underline{\hspace{2cm}}$$

BREED COMPARISONS

Name _____

Bird	Broiler (pen #1)		Egg Laying (pen #2)	
	Body Wt. (9 wk.)	Live Grade (9 wk.)	Body Wt. (9 wk.)	Live Grade (9 wk.)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
Total	(A)		(B)	

COSTS OF PRODUCING POULTRY MEAT
Suggested for age group 14 and over

- OBJECTIVE: Mechanization has greatly enhanced broiler production; however, low farm prices of broilers makes it necessary for the broiler producer to be efficient. In order to know if he is efficient, the broiler producer must have accurate records. A major point to consider in any poultry enterprise is the return you receive for your labor.
- MATERIALS: Broiler chicks 1 day of age (25-50)
Brooding and growing facilities (1 day age to 9 weeks of age)
- PROCEDURE:
- A. Brood and grow a broiler strain of chicks from 1 day to 9 weeks of age.
 - B. During this same period figure and record all expenses:
 1. Chick cost
 2. Feed cost
 3. Fuel cost (gas, fuel oil, coal, electric, etc.)
 4. Insurance cost
 5. Medication cost
 6. Equipment cost (depreciation @ 20% yearly)
 7. Interest on investment (5%/year)
 8. Building cost (depreciation @ 5% yearly)
 9. Litter cost
 10. Other expenses
 - C. Keep record of number of hours of labor.
 - D. Report your results:
 1. Labor income (Total income - total expenses)
 2. Hourly wage (Labor income \div hours of labor)
 3. Rank the cost items (1, 2, 3, 4, etc.)

