# **MSU Extension Publication Archive**

Archive copy of publication, do not use for current recommendations. Up-to-date information about many topics can be obtained from your local Extension office.

Efficient Meat Production II Michigan State University Cooperative Extension Service 4-H Club Bulletin N.A. Issued N.D. 10 pages

The PDF file was provided courtesy of the Michigan State University Library

# Scroll down to view the publication.

30\$

# **Efficient Meat Production II**

Suggested Experiments For 4-H'ers 12 - 14





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

#### INTRODUCTION

Chicken is an important food. Its food value and adaptability give it a high rating among the protein foods. Meals planned around chicken provide most of the essential nutrients.

Technological advances in production, processing, storage, packaging and transportation has allowed broilers to become one of our most abundant and cheapest meats.

The modern broiler is more plump, meatier, more compact and requires less feed to produce than the broiler of 15 years ago. It has a larger proportion of breast meat and is available in a wide variety of styles.

Because of competition from other meat animals, poultry meat must continue to be produced efficiently and cheaply. Experiment suggestions in this 4-H Bulletin are designed to better acquaint 4-H members with the factors involved in efficient meat production.

These experiments are designed for members enrolled in Efficient Meat Production II, or ages 12-14. You are free to choose experiments according to your age and likes. 4-H Bulletin 187.4C suggests some experiments that are more difficult and are designed for members 14 and over.

#### CUT UP BROILERS AND PARTS Suggested for age group 12-14

OBJECTIVE: With the tremendous increase in the broiler business, merchandising became a problem. A new technique for cutting up broilers has evolved. With this new technique has developed the sale of broiler and chicken parts - all necks, all backs, all breasts, all thighs, etc.

MATERIALS: Dressed oven ready broiler with giblets (1 broiler, 2-3 lbs.). Dressed oven ready hen with giblets (1 hen, 4-5 lbs.), Knife Scale (giving weight to one-tenth of a pound) Procedure A demonstrated in Marketing Bulletin No. 7 USDA (available from Poultry Science Department, 113 Anthony Hall, MSU, East Lansing, Michigan).

# PROCEDURE: A. Cut up both the broiler and hen into the various parts - thighs, breats, drumsticks, wings, back, neck and giblets (liver, gizzard, heart).

- B. Weigh each part and record the weights.
- C. Determine what percent each part is of the total weight.

part weight X 100 = %part weight of total weight
total weight

# D. Questions 1. What parts have the greatest sales value? Why?\_\_\_\_\_

- 2. Which would be higher in price, backs or liver? Why?

# PARTS OF A CHICKEN

Name

Parts	Weight of parts - (Broiler)	% of Total weight (Broiler)	Weight of parts - (Hen)	% of Total weight (Hen)
Drumsticks	an an an ann an an an an an an an an an	undersamte envendersamtenen andersetter, varantenen forsetter. Ter Annen andersetter for annen efter ender en andersetter som andersetter envendere	na fina da cana ana kana di ka Ana di kana di k	an fan fan fan ste fan de fan in gebruik werken de fan fan fan fan de fan fan de fan de fan de fan de fan de fa En de fan fan fan in de fan
Wings		1440°°°°. Ana amin'ny soratra dia mampiasa amin'ny soratra dia mampiasa dia mampiasa dia mampiasa dia mampiasa		
Breast		un during springer i divini galang dan dan aya si sanya mag dangka si	a allaya dia faka karana dia karana dia mana karana karana karana karana karana karana karana karana karana kar	
Back	a natural la constituir a la constituir a la constituir e de la constituir e de la constituir de la constituir		a di Ren akan di semi kupatan da serang kana kana dari serang kana serang kana serang kana da serang kana seran	
Thighs	anangan ang sang sang sang sang sang san	anaugusparanan di sebatan sebatan keranan kerangkan kerangkan kerangkan kerangkan kerangkan kerangkan kerangkan	nu gala 1, n. 1968 a. no sundistan gan nagata na gala na sundu g	
Neck	e - en angelen a la facto de la constante de la	ear earde filme finn antie Strager refer tiden der nat ad facele	ana tan 1914) ya magana magana ma ya nagana magana na kata na 1917 na 1919 na 1919 na 1919 na 1919 na 1919 na 1	11 - 11 - 11 - 11 - 11 - 11 - 11 - 11
Giblets		ng ng Sanawardi ng mangang ng n	neg vere bredersterer af franket der sone	
Total			ang san cust system (	

#### PROCESSING POULTRY Suggested for age group 12-14

OBJECTIVE: Killing and dressing poultry is performed largely in processing plants that are equipped to handle a large number of birds. Constant care must be provided to retain the original quality of the bird during the killing and dressing operations.

MATERIALS: Live broilers (5, 2½-3 lbs) Knife Shackles Scalding tank Thermometer Tap water (128-132° F) Procedure given in Marketing Bulletin No. 7 - USDA (available from Poultry Science Department, 113 Anthony Hall, MSU, East Lansing, Michigan).

PROCEDURE: A. The bird is killed and bled by cutting the veins and arteries which run down each side of the neck. The cut is made at the base of the neck and on the under side of the neck, taking care not to cut the windpipe.

B. After bleeding, immerse the bird in water of temperatures from  $128^{\circ}$  to  $132^{\circ}$  F. Immerse the bird for one minute by continuously dunking the bird in the water and then removing it from the water.

C. Remove all the feathers from the bird after scalding. D. Remove the crop, the neck, intestines, heart, liver, gizzard, lungs and oil sac. E. Save the giblets (heart, liver, gizzard). F. Wash bird thoroughly - - the bird is now ready for chilling, freezing, wrapping and cooking. G. Weigh the bird at the following times and record the weights. 1. Before bleeding (live weight) 2. After bleeding and feather removal (dressed weight) 3. After eviscerating - removal of crop and intestines leave giblets and neck in the bird while weighing (drawn weight). H. Questions: 1. What are the disadvantages of hard scalding (160°-180° F)? 2. What advantages has dry plucking in so far as storage is concerned? 3. Why must poultry be cooled immediately after dressing?

4. What percent of the weight is lost during the killing and dressing process?

-

## PROCESSING POULTRY

Name\_\_\_\_\_

Bird No.	Live Weight	Dressed Weight	Drawn Weight
1			
2			
3			
4			
5			
Average	(A)	(B)	(C)

Average	live weight (A)
Average	dressed weight (B)
	drawn weight (C) loss live to dressed
Percent <u>C X</u> 100 B	loss dressed to drawn
Percent <u>C</u> X 100 A	loss live to drawn

#### FEED WASTAGE Suggested for age group 12-14

- OBJECTIVE: The major cost item in the production of poultry meat is feed. This single item accounts for 55-65% of the total cost in producing a pound of poultry meat. Therefore, any saving of feed will greatly enhance the profit margin of the broiler operation.
- MATERIALS: Broiler type chicks grown to two weeks of age by the member or purchased at two weeks of age (40-50 chicks) Brooding and growing facilities for two groups of chickens.

PROCEDURE: A. When the chicks are two weeks of age divide them into two equal groups, 20-25 chicks in each group (separate pens) and feed for 6 weeks.

B. Place the feeders over wire covered boxes; but don't make the wire covered boxes so high that the chicks can't eat.
C. Fill the feeders in Pen #1 25% full and in Pen #2 100% full.

D. Feed these birds at least 2 times daily.E. Record weekly the feed fed (1bs) and the feed wasted (1bs) for a six-week period (2 to 8 weeks of age).F. Report your results.

- 1. Feed fed Pen #1 & 2
- 2. Feed wasted Pen #1 & 2
- 3. Feed consumed Pen #1 & 2

4. Pounds of feed wasted due to different feeder management.

## FEED WASTAGE

Name

Week	Feed Fed Pen #1	Feed Wasted Pen # 1	Feed Fed ₽en #2	Feed Wasted Pen # 2
re				
2				
3		an dhaodhlir fain - ais in gcainn an adainn adainn dha na nag car i s na ann ann an	an Chandraich ann an guir ann ann an stàr an thagan ann ann ann ann ann ann ann ann ann	
4	an a	995 fen y université d'argent connect aux andresses des rélations d'an aux and	analandel ( ) / r & marina analanda dalam taka maka mata kata kata kata kata ka	
5	angeren versen som	na gynnaeth an gwenn yw yn gwrei gan yw gwrei gan yw gwenn gwraffor yw gan gwenn yw gwenn gyn gyfar gyfar gyfa	an enterna de la constante en transmission de la constante de la constante de la constante de la constante de m	nan na San Alau na far ann a' mar ann a' mar ann ann ann an ann ann ann ann ann an
6	an UN CARTA CONTRACTOR AND	andananantan karafasata panun muni muni muni muni muni muni muni m	an an ga mayang a cristanda si ga ang san ang s	
Total	(A)	(B)	(C)	(D)

Feed Consumed Pen #1, A-B	Rome summerse causer and a defendencia provide a decord a superior de referencia de ser superior de ser superio naria
Feed Consumed Pen #2, C-D	መቀታ እንደጀምረት መካታ ካታ የሚያ ምርጉ የሆነ በርስ ያስፈርጉ ተገኘ በሚያ ያስር ይሆን የሚያ የሆነ በርስ የሆነ ይሆን ይሆን የሆነ በርስ የሆነ በርስ የሆነ በርስ የሆነ በ በርስ የሆነ
% Wasted Pen #1, <u>B</u> x 100	State-spin-scande-so-spind State-scalars/2006 states, Lindon-Jan State Strands Strands Amil 12 stationersemble State
% Wasted Pen #2, <u>D</u> x 100 C	and a second

-6-

## DEBEAKING Suggested for age group 12-14

OBJECTIVE:	Cannibalism often results in heavy death losses as well
	as lowered market value due to unsatisfactory feathering
	or bare backs when the flock is sold. The causes of can-
	nibalism are not well understood, but faulty breeding,
	improper nutrition, overcrowding, overheating, and too
	much light are some of the factors involved. Debeaking
	is one method of control.

MATERIALS: Broiler type chicks - one day of age (40-50 chicks) Brooding and growing facilities for two groups of chicks

PROCEDURE :

A. Divide the chicks into two equal groups, debeak one group and place each group in separate pens (20-25 chicks per pen). Place the debeaked group in Pen #1 and the non-debeaked in Pen #2.
B. Rear these birds to at least 9 weeks of age and keep records of feed consumption (weekly-1bs), body weight, (9 week) and mortality (daily). Record whether the mortality was due to cannibalism.

C. At 9 weeks of age rate the birds as to feathering (1=good, 2=fair, 3=poor).

- D. Report your results:
  - 1. Feed fed Pen #1 and #2
  - 2. Average body weight Pen #1 and #2
  - 3. Mortality % for Pen #1 and # 2
  - 4. Feather score for Pen #1 and #2
  - 5. Feed efficiency for Pen #1 and #2

#### DEBEAKING

Name

Week	Feed Fed Pen ∦ 1	Mortality⊁ Pen #1	Feed Fed Pen #2	Mortality Pen #2
1				
2				
3				
4				
5				
6				
7				
8				
9				
Total	(A)	(B)	(C)	(D)

\*Record what percent of the mortality was due to cannibalism in parenthesis ( ).

Feed Efficiency Pen #1  $\underline{A} =$   $\underline{E}$ Pen #2  $\underline{C} =$  $\underline{G}$ 

# DEBEAKING

37
Name
ውር።በንደረውቶስ አሁም ስያያምርያቀውታሪያት የመስትሪት ግምቦቸው የኮኖተተኛውቶት ይሰርው በትዕለአን ርም ይካሬያት ቅብለው አውሮ አብርውቶት ርያስ ያካርር እ። የይህ አባር ትህም እንደ ትህም አብር ትህም እንደ ትህም እንደ

Bird	Body Weight (9 week) Pen #1	Feather Score (9 week) Pen #1	Body Weight (9 week) Pen #2	Feather Score (9week) Pen # 2
1	ang manananini niner danadorini ortonom data jan jaturi nya o kutin Mana tako zi jiwang nineti n	a uzy manaza kanny semechtete témer ngooritt zachnes synemisingt somfortzekn viti tity-servity-men om	a dana kanga danagkan kangkan panangkan na mangka panana panan ( dana dapangan na maka	an manana manana manana ana ana ana ana
2	ar frei fan Erne fan gener fan skriver fan Frei fan	₽₽₽₽₽₽₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	n fyr men yn referiadau yn egyn y fallan yn er yn ar yn fyr ar yn far yn yn ar yn y Yn fyr yn er yn gyn yn gyn gyn gyn gyn gyn gyn gyn g	ander einer Berleinen angegenen um versen sternen an die einen versen sie der um Streiten gegen. gin eine Socht
3	՟՟՟՟ՠ֎՟֍֎՟֎՟ՠ՟֎֎ՠ֎ֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈֈ	ֈֈ֎ֈ֎ֈՠ֎ՠ֎ՠֈ֎ֈ֎ՠՠ֎ՠ֎֎֎֎֎֎֎֎֎֎֎֎֎֎֎֎֎֎֎	ana, a yan ing tarupi yang ngangaranan ang ing ngang sang mang ang ing ing ing ing ing ing ing ing ing i	in Vanou panano na ana kanang kanang kanang kananan dan orang kanang kanang kanang kanang kanang kanang kanang
4	n ne war wanne baar waar na ee a woor o staat goorna waann. Dit yn sindgaan a star Jaak when	an (na tan tan digetin Conn i 1 307 4) ata daga kaga kaga kaga kaga kaga kaga kag	an frank fan seringen i menningen i konstant som er frank men sering han som andere som er som er som	averg angenere, ander angeneger an province examples to be used in position of the grant of the set.
5	anun dan un versionen er einen den annen den seinen den den den einen den der eine den einen den einen den eine	na n	aryadamovizatiyadirrid SCAC takon aciyatirdariya kikaniko olo iyanabilki nimikari di dirini ka	ann an Anna Anna an Ann
6	ŢĸĸŦĸĊĸĊĸĹŎĬŎŦĊŢŢġĸĸĊĸŦĸŦĸĊĸſŎĬĸĸġĸŦŦĦĊŧĸĸĊŎŢŎĸĸĸŎŢĸĊĹŎġŎŢġĸĊġĸţĸĸĸŢĸĸŎŎŎŎŎŎŎŎŎ	na mandrinanna annar I Pagainn an annar an annar ann an annar ann an annar ann ann	n da mendiar na s'anna adristica dan da an sa an signa di sa an sa an distant da mana di sa si sa sengan a san	pala ne na Meriada da Santa Yanan da na da da Cartan yang na
7	en 19 suntan se den konstan Salan Green van Alaban kalpen kan van 194 il die Leisbornen, metersker	in feweris - an Croit au an air an an Anna Anna Anna Anna An Anna An Anna An Anna An Anna Anna An Anna Anna Ann	διατού του διαδού Κ. αυτού 5.40. Υξικός ματό και ό βατη το βατού Καριστικό Κολοβουλας Caudid βιατη βαστάτατα τ Τ	n 5 fean - Sean an Sean Sean Sean Ann an Ann an Ann an Ann ann an Ann
8	han unstande referende van de de de de en de	nege govervælgent slære legen en op vælde se en en belæge som gener en per helpfor ven i "som slære gener	Der Ster digtader Färnelle Stanten son met Kängigan. I film Heffe Bestingen Sperier von Halffel Heffelige für Sp	seren responsen bener bener bereiten herriten herriten in den ber sin den men benere den men den men herriten
9	ng anaka na pang maganakan dan kana ang mang na na pang pada dan Banang ng na na	u ali nan taman di mandan mananan pina anan dipana mang dinang dipang papana, dina tangka mener sebat	nallitine ann an ann ann ann ann ann ann ann an	nenne helmu helm
10	augergenaut generude indozen ingenerue on generute in gibt wieders of Winner Strater storment of diffe	agna ng ang ang ang ang ang ang ang ang	all de si line (paparis e ant en l'arte duite anno de sin de s	and Look Person and Conserve Cak Boundary, w council approve Provide a New Approximation and a service and a se
11	an an fairde i sun a faith na Chain na sea sealach a' fairte gu ann an Suinn an Anna a fair an an Anna ann	undanen dar varan mendendi den dan dari dari dari dari dari dari dari dari	Salanna Shon san sana ka Court yan salake na ka sa	na 2014 de derena de calence eggen cultan en de la construction de la construction de la construction de constr La construction de calence eggen cultan en de la construction de la construction de la construction de construct
12	naun lan an anna marandara 20 a dh'anna an na bhairte annan channa anna an anna an anna an a	langan C. Shino Magangan uga ku ja pili jamin kupa upak dinganangkan sa Panadan Ani napahan 188	a na fan sen fan se fan sen fan sen fan sen fan sen fan sen fan sen fan fan sen fan fan sen fan sen fan fan fa	
13		ምንያዊው ምሳ የምሳ 5 ሳይሮ መይገራ ላይ የቀላ ላይ ረሳ ፡፡ የተሳ መለስቁታ ባለበት ፡፡ ተላ ያለውያ ላይ የሰላ ነው የታይሮን ነበር ባ ያለውን ለመስከመስ መካከት ውስጥ	a di Ananana mananana na mananana mananana manana manana manana manana manana manana manana manana manana manan	
14	naunu zerunda kenden erada medianan ar nenden unden adamerad fordeter val forgeter val fordeter val fordetal un		an yang mang manang mang mang mang mang mang	n Ol, problementan of America and Castra and Sandara and Castra and Andread American Sandara a Sandar
15		auffraux dis landed and a summa data for addre effer Line dis landed of Diffrau annound Canal Sonn de very a summa		
16		989 (400 - 200 (400 (400 (400 (400 (400 (400 (400		
17		n da kanan taran kanan kan Kanan taran kanan kana		
18		unen an an andra an		
19				
20		ander verfahrendet i vers met ende van die en stadie sonderen oden sonderen die verden die sonderen die sonder		
21				
22				
23				
24	and we will be a real weat by the state of the			
25				e Charles and the second s
Total	(E)	(F)	(G)	(H)