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EC 58-1412

Comparing Modern Poultry Housing Systems

by

John L. Skinner

Marven L. Vaughn

EXTENSION SERVICE UNIVERSITY OF NEBRASKA COLLEGE OF AGRICULTURE AND U. S. DEPARTMENT OF AGRICULTURE
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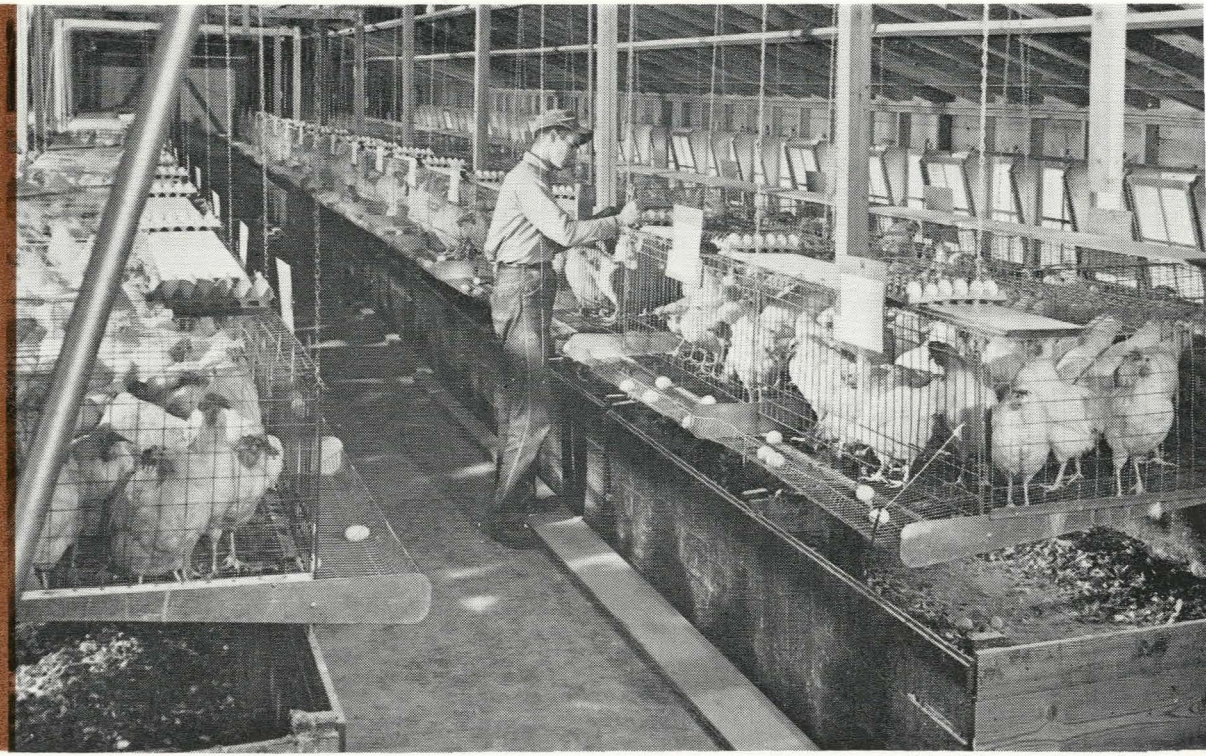


Photo Courtesy Oakes Mfg. Co., Tipton, Ind.

INTRODUCTION

◆ The quarters we provide for laying hens have a lot to do with their efficiency and ours. New methods and arrangements of the hens' living quarters have appeared in ever-increasing numbers in the midwest in recent months. Many Nebraska producers are asking the question, "What can we expect of these systems?" The following tables are intended to:

1. Give, in a general way, some of the considerations and points of concern, both pro and con, for the housing systems that are in use today;

2. Give some of the cost figures that are widely accepted as representative of, and based upon, these different systems of management.

ABOUT THE COVER

An attractive Colony Cage installation. Boards to confine droppings and feathers are not absolutely necessary and would have to be removed when cleaning.

5M-10-58

Table I.—General Comparison of Physical Features

Item of consideration	System of Management							
	Conventional floor with litter	Conventional litter floor but with double decked roosts	Floor with litter plus mechanical pit cleaner (solar or otherwise)	CAGES			Slat floor	Wire floor
				Single deck 8″	Double deck 8″	Colony 36 x 60″		
Floor space required per bird or its equivalent unit of equipment* (sq. ft.)	2½–3	1½–2	1–1½	2½	1½	1¼–1½	1–1½	1–1½
Roosts	usually used as single deck	2 levels of roosts, one directly over the other	2 or 3 levels of roosts	none	none	none	none	none
Automatic waterers	yes	yes	yes	yes	yes	yes	yes	yes
Feeders: hand	not recommended	not recommended	no	yes	yes	yes	no	no
hanging	yes, up to about 700 hens	yes, up to 700 hens	no	no	no	no	yes	yes
automatic	yes, from 700 hens up	yes, from 700 hens up	yes	can be used but relative cost is high			overhead type can be used to fill hanging feeders	
Ventilation	power preferred	power	power	power preferred	power	power	power	power
Insulation	pays off	necessary	necessary	necessary for all 3			necessary	
Type of nests	individual or colony, pad or roll-away	individual or colony, pad or roll-away	individual or colony, pad or roll-away	none required			individual or colony, roll-away	
Schedule of hen replacement	annual or as desired	annual	annual or as desired	continuous		periodic	annual	
Is it suitable for a hatchery supply flock	yes	yes	yes**	no	no	yes**	yes**	yes**

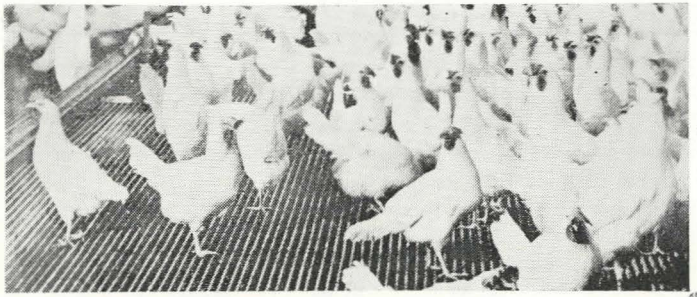
Table I.—General Comparison of Physical Features—*Continued*

Item of consideration	System of Management							
	Conventional floor with litter	Conventional litter floor but with double decked roosts	Floor with litter plus mechanical pit cleaner (solar or otherwise)	CAGES			Slat floor	Wire floor
				Single deck 8″	Double deck 8″	Colony 36 x 60″		
Clean-out period (probable)	annual plus spot removal at waterers	annual plus spot removal. May require semi-annual cleanout	pit, each 7 to 10 days balance annually	annual	7 to 10 days	annual	annual	
Schedule of egg gathering and chores	regular	regular	regular	somewhat flexible			regular	
Type of feeding program	all mash or mash plus grain	all mash or mash plus grain	all-mash	all-mash for best labor efficiency			all-mash	
Is cannibalism a problem?	may or may not be	yes, it often is	yes	no	no	yes	yes	yes
Are internal parasites a serious problem?	probably	may be	could be	no	no	no	no	no
Are external parasites a serious problem?***	yes	yes	can be	can be	can be	can be	can be	can be
Are flies a problem?	not usually	not usually	no	yes	no	yes	yes	yes
Major problems: 1.	dirty eggs	dirty eggs	cannibalism ventilation is critical so auxillary power should be available	replacements			birds want to roost on fixtures	
2.	cannibalism	clean out		high labor costs			cannibalism	

* Such as space cage takes plus ½ of aisle.

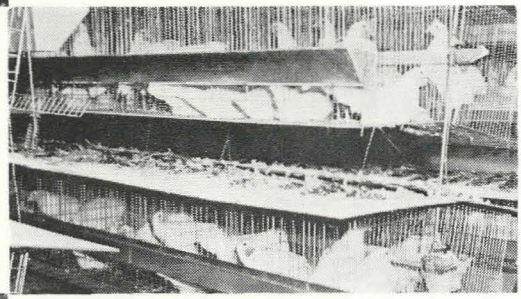
** Limited information on this under Nebraska conditions so information is drawn or inferred from experiences elsewhere.

*** Wild birds in or near power vent fans can be the source of much external parasite infestations.

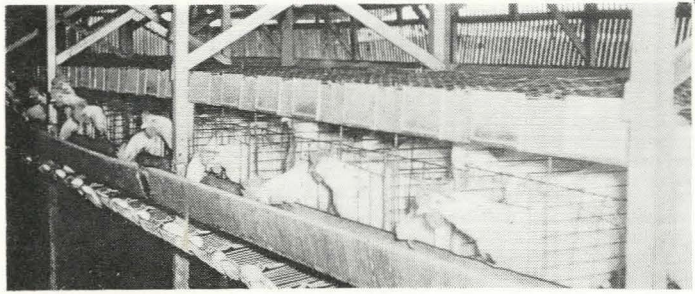


Slatted Floor

Photo courtesy Poultry Tribune, Mount Morris, Ill.



Double deck cages



Single deck individual cages

Table II.—Comparative Costs of Chicken Housing Systems (per bird)*

Item	Conventional	System of Management						
		Conv. plus Dbl. Dk. Roosts	Conv. plus Mech. Pit	Cages			Slat Floor	Wire Floor
				Single Deck	Double Deck	Colony		
(based upon minimum floor space as outlined in Table I)								
Housing**	$5.00	$3.00	$2.00	$5.00	$3.00	$2.50	$2.00	$2.00
Floor material, litter or confining unit	$0.10	$0.08	$1.05	$1.15	$1.30	$1.40	$0.60	$0.82
Equipment:*** feeders, waterers, nests, etc. (initial cost)	$0.91	$1.07	$1.82	none ****	none ****	none ****	$1.04	$1.04
Total cost per bird (initial cost)	$6.01	$4.15	$4.87	$6.15	$4.30	$3.90	$3.64	$3.86
Labor at $1.00 per hour (per year of operation)***	$0.41	$0.34	$0.28	$0.46	$0.53	$0.42	$0.32	$0.32

(The various pieces of equipment were computed from retail prices of an average of all of the commercially available brands of that item being sold in Nebraska, Feb. 1, 1958.)

* Per hen cost of initial investment.

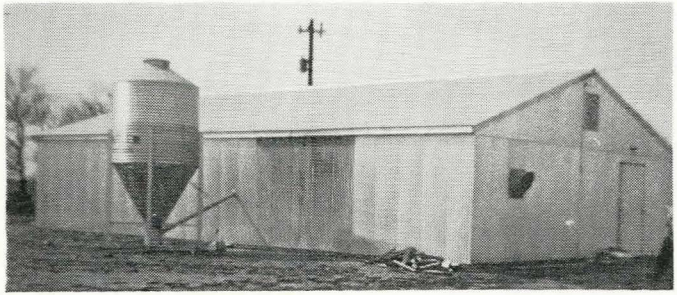
** The cost of the material and labor to build an acceptable, modern-type poultry house in Nebraska, January 1958 as determined by a survey of hatcherymen in the state.

*** The cost of caring for the bird while she is in the laying house and cleaning it afterward, but does not include the labor of raising the hen's replacement.

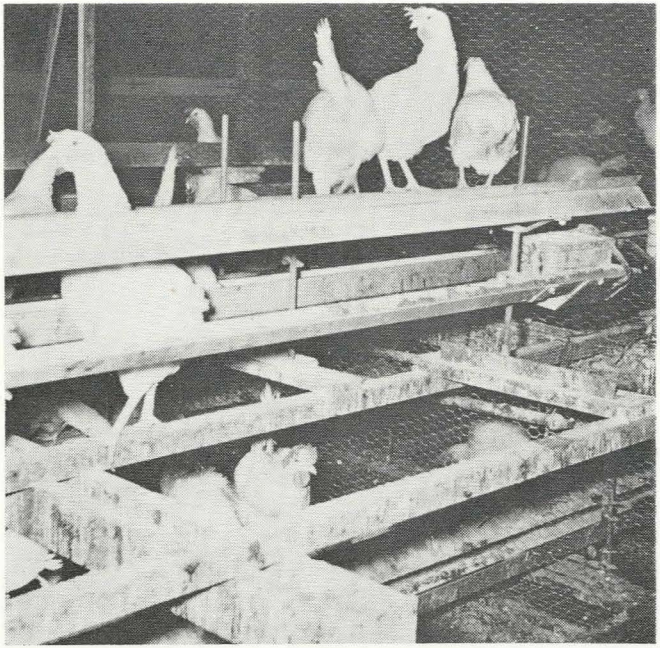
**** Included as a part of the unit cost of the cage.

Three Best Liked Features of Each Management System (as reported by users).

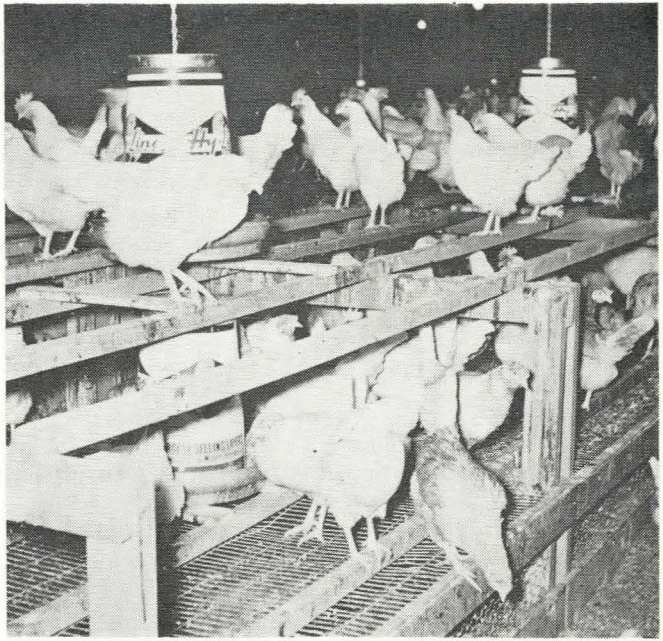
Conventional floor	1. a proven system. 2. may want to produce hatching eggs and know this system will be acceptable. 3. appearance of birds is better than with other systems.
Conventional floor plus double decked roosts	1. low initial cost per bird. 2. low labor requirement. 3. low maintenance costs.
Conventional floor plus mechanical pit cleaner	1. low cost per bird housed. 2. low labor requirement (lowest of systems covered in this publication). 3. relative comfort of the birds.
Single deck cakes	1. ease of caring for birds. 2. accurate records easily obtained. 3. an opportunity to keep building at full capacity.
Double deck cages	1. accurate records easily possible. 2. an opportunity to keep at full capacity. 3. an equal chance for every bird.
Colony cages	1. small groups reduce social order problems. 2. buildings can be kept at near capacity at all times. 3. constant flow of eggs easily obtained.
Slat floors	1. low cost per bird and large capacity of house. 2. low labor requirement. 3. produces a relatively clean product.
Wire floors	1. maximum in cleanliness. 2. can easily be made at home to further reduce the housing cost. 3. low labor requirement.



Modern windowless house with controlled lighting and ventilation



Double deck roosts



Power choring