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# FACT SHEET

L-978

## KEYS TO THE PRODUCTION OF EGG TYPE REPLACEMENT PULLETS

Texas hatcheries now produce between 12 and 13 million egg-type pullet chicks yearly. The monthly hatch ranges from 800,000 pullet chicks during August and September to 1,300,000 during March and April. This provides a relatively uniform supply of pullet chicks throughout the year.

The care and skill applied in raising pullets to laying age is a criteria for determining the success of the mature birds in the laying house.

One man can care for 50,000 pullets until laying age in houses equipped with mechanically-operated feeders, waterers and side wall curtains. He will need supplemental help for house cleaning, vaccination, debeaking, emergencies and relief.

Fundamental to a successful health program are "all in-all out," quarantine and isolation of each flock. Limit flock to one age and from one source. Do not permit other poultry on the premise. This program increases the chance for disease prevention.

### KEYS

- Start with pullorum-typhoid clean, sexed pullet chicks of desired genetic ability from a hatchery that will provide healthy chicks and good service.
- Clean the brooder house completely between each new brood of chicks — ceiling, rafters, walls, floor and the surrounding premise. At this time, repair, scrub and disinfect all equipment — waterers, feeders and brooders.
- Cover the brooder house floor with clean litter at least 3 inches deep. Wood shavings, processed pine bark, rice hulls and cane litter are

commonly used. Avoid moldy or musty litter to prevent aspergillosis (mold growth in the respiratory tract).

- Provide 1 square foot of floor space for each chick in the brooder house to 8 weeks of age. Then provide 2 square feet per bird for pullets that are to grow to laying age in the confinement of a poultry house.
- Gas, oil or electric brooders should have sufficient heating capacity to maintain comfortable temperatures in the coldest weather. Allow 10 square inches per chick under a hover-type brooder. This will provide space for 400 chicks under a 6-foot hover. Solid guard rings placed 4 feet from the hover prevent chicks from straying the first 4 days. Move the guard rings back 3 feet for 3 more days before removing them entirely. When the minimum room temperature is 70 degrees F. and above, chicken wire guards are suitable.
- Before the chicks arrive, have the brooder house ready with brooders operating and regulated to the manufacturer's recommended temperature. Regulate each brooder's thermostat range to allow a maximum temperature spread of only 5 degrees F. Fill waterers and feeders, and set up guard rings. Distribute chicks around each brooder. If undisturbed, chicks will quickly settle and be off to a good start. Lower the temperature about 2 degrees every 3 days until 70 degrees is reached and the chicks are well feathered. Observe the chicks' behavior to determine adjustments needed for comfort.
- Bulk feed bins and mechanical feeders provide substantial labor savings. Operate according to the manufacturer's instructions.

Prepared by Extension poultry specialists, Texas A&M University.

- Feed trough recommendations: (two-thirds as much with tube feeders)

Age	Feed space per bird (inches)	Depth of feeder (inches)
Through 2 weeks	1	2
3 through 6 weeks	2	3½
7 through 12 weeks	3	3½
12 weeks to laying house	4	4 or more

During the first 8 weeks feed a well fortified chick-starter ration containing 20 percent protein and about 900 calories of productive energy. From 8 weeks to 50 percent production feed a grower mash containing 15 percent protein. See L-593, *Feeding Flock Replacements*.

To start all birds eating fill the feeders to overflowing the first week. Then reduce the feed level in the feeders to 2 inches below the lip to prevent waste by "billing." As the birds grow, elevate the feeder lip to the pullets' shoulder height. This will help prevent feed waste and keep litter out. Keep feed troughs level. Feeders should have a 1-inch lip to deflect feed billed by the birds. Feed represents two-thirds of the cost of raising pullets. Unnecessary waste of feed results in a proportionate reduction in earnings. It takes about 22 pounds of medium-energy feed to raise a replacement pullet until it is in 5 percent egg production.

During the first month encourage pullet chicks to maintain maximum feed consumption so that every bird will get a good start. From that time through the fifth month the major emphasis is upon developing a pullet with a strong, well-conditioned body.

Measure the progress of the growing flock by weighing a random sample of pullets each month. Compare these weights with breeder recommendations.

- Water trough recommendations:

Age	Water space per bird (inches)
Day old through 2 weeks	1/3
3 through 6 weeks	2/3
7 through 12 weeks	1

During the first 10 days of brooding, supply water in clean 1 gallon, wide-based fountains

with one fountain per 100 chicks. Then add mechanical water troughs. Move fountains gradually toward the troughs and remove them as the chicks learn to use the troughs. Five 8-foot mechanical waterers per 1,000 pullets are recommended. Distribute waterers evenly over the area. Keep the lip of the water trough adjusted to the chickens' shoulder height to prevent slobbering and keep out debris.

- To obtain good results at least 90 percent of the pullets started should be healthy and alive when the flock reaches 50 percent egg production. Raise each brood of pullets to laying age in complete isolation to avoid exposure to infections and infestations that other birds may carry.

A planned and executed vaccination program is necessary to help control some of the major virus diseases. Make regular checks of the birds' health for internal and external parasites. Upon the first suspicion of any unhealthy condition, get a qualified diagnosis and immediately begin corrective treatment. Remove and kill obvious culls. Promptly dispose of dead birds in an incinerator or a disposal pit. Debeaking helps control feather picking and cannibalism.

- Poultry house ventilation requires constant attention. During hot weather use any breeze to cool the birds. During cooler weather adjust the wall openings allowing enough air movement to keep the litter dry and at the same time avoid drafts. During quick weather changes make prompt and corrective adjustment of the wall curtains or panels to protect the comfort of the pullets.
- Use all-night, artificial lights during the first 3 days to get every pullet eating and off to a good start. After 3 days discontinue the night lights. Keep the light per day to a minimum on pullets through the fifth month. The lower light stimulation level allows the pullet to use the full growing period to complete the body development. When the pullets are ready to lay during the fifth month, they will respond promptly to the lighting conditions of the laying house and reach 50 percent production when they are about 6 months of age.
- Raising pullets in cages is new in Texas. This method involves using insulated housing, space heating, evaporative cooling, electric fan ventilation and special cages. Indications are that this method will expand.

- Transfer the pullets to the laying house as production commences, preferably when they reach 5 percent egg production. When catching and loading pullets for the trip to the laying house, handle each bird carefully to prevent bruises. Use only freshly cleaned coops and equipment to prevent exposure to disease. Avoid losing 5 months of good work by 1 day of inadequate care.

- Good management requires factual information about each flock's performance. The Replacement Pullet Result Summary provides an outline for recapping and analyzing the performance factors related to earnings.

To determine housing and equipment costs use D-794, *Continuous Depreciation Schedule* available from your county agent.

### REPLACEMENT PULLET RESULT SUMMARY (to 50 Percent Egg Production)

Costs (variable)	Value
Chicks – Pullets _____ hd. Hatch date _____	\$ _____
Litter .....	\$ _____
Fuel .....	\$ _____
Medication .....	\$ _____
Vaccination .....	\$ _____
Insurance on pullets .....	\$ _____
Hired labor .....	\$ _____
Starter _____ cwt	\$ _____
Grower _____ cwt	\$ _____
Feed: Laying ration _____ cwt	\$ _____
Grain _____ cwt	\$ _____
Total _____ cwt	\$ _____
Costs (fixed)	
Property taxes & insurance .....	\$ _____
Property depreciation & maintenance .....	\$ _____
Costs (total)	\$ _____
Income	
Pullets sold _____ head	Value \$ _____
Doz. eggs sold to	
50% av. prod. _____	Value \$ _____
Total income.....	\$ _____
_____ Pullets at 50% egg prod. (3 day av.)	
Net cost .....	\$ _____
Average cost per pullet housed .....	\$ _____
Livability _____ percent	Average weight _____ lb.
Age of pullets at 50% production _____ days	_____ date

Good management requires factual information about each flock's performance. The Replacement Flock Result Summary provides an outline for recording and analyzing the performance factors related to earnings.

To determine housing and equipment costs, use D-754 Continuous Depreciation Schedule available from your county agent.

Week 1 through 4  
Week 5 through 8  
Week 9 through 12  
Week 13 through 16  
Week 17 through 20  
Week 21 through 24

**REPLACEMENT FLOCK RESULT SUMMARY**

During the first 8 weeks of the growing period, the following information should be recorded:

From 8 weeks to 16 weeks 8 months  
From 16 weeks to 24 weeks 12 months  
From 24 weeks to 32 weeks 16 months  
From 32 weeks to 40 weeks 20 months  
From 40 weeks to 48 weeks 24 months  
From 48 weeks to 56 weeks 28 months  
From 56 weeks to 64 weeks 32 months  
From 64 weeks to 72 weeks 36 months  
From 72 weeks to 80 weeks 40 months  
From 80 weeks to 88 weeks 44 months  
From 88 weeks to 96 weeks 48 months  
From 96 weeks to 104 weeks 52 months  
From 104 weeks to 112 weeks 56 months  
From 112 weeks to 120 weeks 60 months

At the start of the growing period, the following information should be recorded:

Number of birds in flock  
Number of birds in flock at 8 weeks  
Number of birds in flock at 16 weeks  
Number of birds in flock at 24 weeks  
Number of birds in flock at 32 weeks  
Number of birds in flock at 40 weeks  
Number of birds in flock at 48 weeks  
Number of birds in flock at 56 weeks  
Number of birds in flock at 64 weeks  
Number of birds in flock at 72 weeks  
Number of birds in flock at 80 weeks  
Number of birds in flock at 88 weeks  
Number of birds in flock at 96 weeks  
Number of birds in flock at 104 weeks  
Number of birds in flock at 112 weeks  
Number of birds in flock at 120 weeks

Value of flock at start of growing period \$ \_\_\_\_\_

Value of flock at 8 weeks \$ \_\_\_\_\_

Value of flock at 16 weeks \$ \_\_\_\_\_

Value of flock at 24 weeks \$ \_\_\_\_\_

Value of flock at 32 weeks \$ \_\_\_\_\_

Value of flock at 40 weeks \$ \_\_\_\_\_

Value of flock at 48 weeks \$ \_\_\_\_\_

Value of flock at 56 weeks \$ \_\_\_\_\_

Value of flock at 64 weeks \$ \_\_\_\_\_

Value of flock at 72 weeks \$ \_\_\_\_\_

Value of flock at 80 weeks \$ \_\_\_\_\_

Value of flock at 88 weeks \$ \_\_\_\_\_

Value of flock at 96 weeks \$ \_\_\_\_\_

Value of flock at 104 weeks \$ \_\_\_\_\_

Value of flock at 112 weeks \$ \_\_\_\_\_

Value of flock at 120 weeks \$ \_\_\_\_\_

Transfer the balance to the laying house as production commences, preferably when they reach 5 percent egg production. When reaching 10 percent egg production, transfer the balance to the laying house. Handle each bird carefully to prevent bruising. Use only freshly cleaned cages and equipment to prevent exposure to disease. Avoid losing 2 months of good work by 1-day-old chickens.

Chicks - Pullets \_\_\_\_\_

Cost (variable) \_\_\_\_\_

Cost (total) \_\_\_\_\_

Income \_\_\_\_\_

Property depreciation & maintenance \_\_\_\_\_

Cost (total) \_\_\_\_\_

Total income \_\_\_\_\_

Survival percent \_\_\_\_\_

Average cost per pullet housed \_\_\_\_\_

Age of pullets at 50% production \_\_\_\_\_ days

Percent livability \_\_\_\_\_

Average weight \_\_\_\_\_ lb

Age \_\_\_\_\_ days