



POULTRY HOUSING AND HANDLING

CPS

PLAN 5000 NEW: 9:76

Modern poultrymen tend to specialize in one type of production and poultry housing must be geared to each individual operation. Houses for various enterprises, such as turkey, egg or broiler production, may differ greatly in size, appearance and arrangement of facilities. However, they also have some similar requirements. A good location and a well-insulated building equipped with proper ventilation, heating and lighting systems are important in poultry housing for any type of operation.

LOCATION

Poultry houses should be located on a well-drained site of adequate size, not only to serve present needs but also for future expansion. The buildings should be separated to ensure reasonable protection against fire and to allow ventilation around them.

Every construction project must be planned. Consider all-weather road access, drinking water, electric power, storage facilities and manure utilization. Before any new construction, obtain approval of local authorities.

VENTILATION

Various ventilation systems are available. Canada Plan Service plans illustrate the commonly used cross-flow system consisting of manually adjusted, air-intake slots on one or both sides of the building and banks of exhaust fans on one side. An ideal system should provide maximum flexibility between the minimum and maximum output according to the age and weight of the birds and the outside temperature. For proper ventilation, buildings must be adequately insulated against local climatic conditions.

A good ventilation system:

- Keeps litter dry;
- Prevents condensation and sweating;

- Maintains a suitable and uniform temperature;
- Provides a rate of air change appropriate to age and weight of the poultry and to outside weather conditions;
- Prevents drafts; and
- Provides fresh air uniformly to all poultry in the building.

A standby generator is valuable for maintaining ventilation during electric power failures. In the absence of a generator, construction plans should include insulated panels that can be opened for emergency natural ventilation.

HEATING

A heating system is necessary for certain types of production, such as brooding young poultry, and to provide supplementary heat to improve cold-weather ventilation. The choice of a system depends on cost and local availability of equipment, cost of available energy, and cost and availability of insurance on the heating equipment chosen. The system must be easy to regulate and must operate safely.

Types of heating equipment used by the poultry industry include:

- Oil-fired or electrically heated hot-water systems using black iron or fin pipes for radiation;
- Electric radiant heaters for brooding, with electric unit heaters for supplemental heat; and
- Propane brooders and unit heaters.

These temperatures are guides only; always adjust the temperature according to behavior of chicks. If it is too hot, the birds cluster along the cardboard enclosures. If it is too cold, they stay under the brooders and stop eating and drinking.

Lighting

Since natural light does not provide the desired day lengths for various poultry management systems, artificial lighting is used almost exclusively in modern poultry housing. All outlets should be controlled by wall switches and time clocks. If a variable level of lighting is desired, a rheostat or additional controls should also be provided.

General recommendations for lighting installations are as follows:

IN LAYING HOUSES

For birds on litter, slats or wire, install ceiling outlets 12 ft apart on center. In addition, on a separate circuit, provide one 10-watt dim-light outlet for each 400 sq ft of floor area, in a row slightly back of the bright-light outlets towards the roosts.

For birds in cages, install ceiling outlets every 12 ft on centerline of aisles between double-tier cages; and every 10 ft on centerline of aisles between triple-tier cages.

For feed and preparation area, install one outlet for every 100 sq ft.

IN BROODER HOUSES

For broilers and started pullets, install ceiling outlets 12 ft apart on center.

CAGE HOUSING

Hens for commercial laying are generally kept in cages. This reduces the amount of floor space needed and makes it easier to supervise and eliminate undesirable birds. Housing in cages lends itself well to mechanization.

Canada Plan Service plans for cage houses are designed according to the *Canadian Farm Building Code 1975*, which states:

CAGE HOUSING FOR EGG-STRAIN LAYING CHICKENS

- Cage floor area for multiple-bird laying cages should be 64 sq in. per bird at 3 ½ lb (two birds in a cage 8 x 16 in., three birds in a cage 12 x 16 in., etc.). For 4 ½ lb birds, the cage floor area should be increased to 72 sq in. per bird (two birds in a cage 8 x 18 in. etc.).
- Cage floor area for multiple-bird breeder cages should be 96 sq in. per bird (for example, 20 hens and two cockerels in a cage 22 x 96 in. and 23 in. high).

(c) Feeder trough space should be 4 in. per bird with two or more birds per cage.

(d) Where carts are used for feeding and egg gathering, a clear passage of 32 in. should be provided between cage rows and to longitudinal walls.

(e) Clear end passages of 8 ft from cage equipment to end walls should be provided, if required, for turning feed and egg carts.

Arrange hoppers and drinking troughs so that the birds do not need to travel more than 4 to 5 ft to drink. For each pound of food consumed, a bird drinks 2 to 3 lb of water. The quantity of water ingested has direct influence on the consumption of mash and therefore on the growth of the bird.

TEMPERATURE GUIDE

Age of birds	Suggested temperature under brooders, 2 in. above floor near edge of hood	Temperature of building
Up to 1 week	35°C (95°F)	24°-27°C (75°-80°F)
1 – 2 weeks	32°C (90°F)	21°-24°C (70°-75°F)
2 – 3 weeks	29°C (85°F)	23°-24°C (73°-75°F)
3 – 4 weeks	27°C (80°F)	22°-23°C (72°-73°F)
4 – 5 weeks	21°-24°C (70°-75° F)	21°-22°C (70°-72°F)
Over 5 weeks	Reduced by 1°C (2°F) per week to 18°C (65°F)	

Housing for laying chickens and breeding flocks

FLOOR HOUSING

Requirements for various floor systems			
Accommodation	Deep litter; dropping pits under roosts	Combined wire or slats (¹ / ₂ – ² / ₃) and deep litter (¹ / ₂ – ² / ₃)	All wire or slats (minimum)
Floor area per hen			
-egg-strain breeds	2 sq ft	1.0 sq ft	0.5 sq ft
-heavy breeds (over 5 lb)	3 sq ft	1.5 sq ft	1.0 sq ft
Feeding space per 100 hens	If hand-fed, 20 ft of double-sided troughs; or four round hanging feeders (pan diameter 16 in.) For automatic feeding reduce feeding space by 50%.		
Watering equipment per 100 hens	Two watering cups; two 5-gal fountains; or 60 linear in. of drinking troughs		
Nesting space per 100 hens	20 nests, 10 x 13 in. high for both light and heavy breeds or 1 community nest 2 x 8 ft.		

FLOOR SYSTEMS FOR BROILER CHICKENS, ROASTING CHICKENS AND PULLETS

Requirements at various ages (weeks)

Accommodation	0 – 2	3 – 6	7 – 10	11 – 20
Floor area per bird (sq ft)	0.5	0.75	0.75	1.5 (light breeds) 2.0 (meat breeds)
Length of feeding trough per bird (in.)	1	2	3	3
Watering equipment per 100 birds	Two fountains of 1 gal each	Automatic trough 60 in. long; or two fountains of 3 gal each	Automatic trough 60 in. long; or two fountains of 3 gal each	Automatic trough 100 in. long

HOUSING FOR TURKEY BREEDING FLOCKS

Accommodation	Requirements	
Floor area per bird , all breeds	5 sq ft	
Feed space per bird	3 linear in.	
Watering space per bird	1.5 linear in.	
Nest space per five hens	One nest, 14 x 24 x 24 in.	
Daily feed consumption per bird	Broiler strain	Heavy strain
- toms	0.75 lb	1.0 lb
- hens	0.5 lb	0.75 lb
Broody space *	0.5 sq ft of wire floor, no bedding, well lighted.	

*Area separate from breeding pen used to isolate 'broody' breeder hens and restore egg production.

POULTRY PRODUCTION CYCLE

Broiler chickens	8 to 9 weeks
Young roosters	12 to 13 weeks
Laying pullets	18 to 20 weeks
Hens (laying period)	13 to 15 months
Broiler turkeys	13 to 14 weeks
Large female turkeys	19 to 21 weeks
Large male turkeys	23 to 25 weeks

Before the arrival of a new group of birds, clean and disinfect the poultry house thoroughly.