World Poultry Foundation

Worksheet A: Poultry House Capacity

A common mistake for brooder units is to place too many birds in the house. This creates crowding issues which can lead to losses from heat stress, stunting due to inadequate feeder and waterer space, and severe litter conditions which can increase incidence of parasite infections and bacterial challenges.

It is important to accurately measure the inside walls of the structure to determine the correct square footage to know how many birds can be properly housed. Consider any penned areas or posts that subtract from the overall floor space in the calculation of the size of the brooding chamber.

To calculate the floor space, multiply the length of the inside wall by the width of the house.

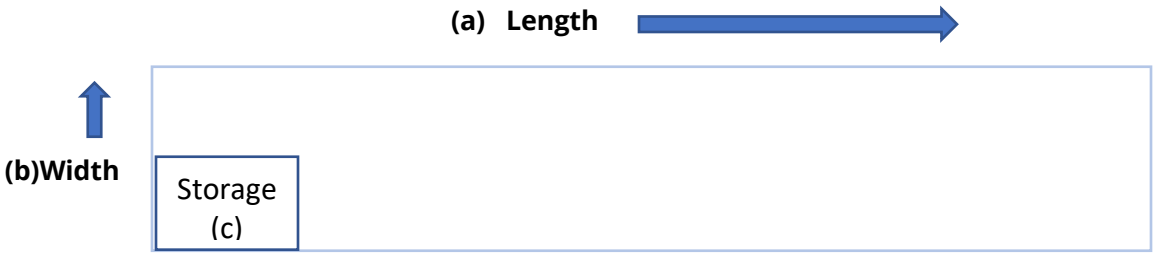
If the inside wall is 10 meters and the width of the house is 5 meters, then the total floor space is 50 square meters. Subtract any storage areas from the total. If there is a 2m x 4m storage (8 square meters), then the total usable space would be 42 meters (50m less the 8 meters for storage).

At most, the capacity should be 15 birds/square meter so in this instance the capacity of the house would be 630 birds (42 square meters x 15 birds = 630).
Measure and determine the USABLE floor space and multiply by 15 birds as the maximum capacity of the structure.

Worksheet A: Poultry House Capacity (continued)

Example

(a)	(b)	(c)	(d)	(e)	(f)	
Length (m) of sidewall	Width (m) of sidewall	House size (square m) (a) x (b)	Less Storage area	Total useable floor space (c) – (d)	Birds per square meter	Capacity (e) x (f)
10m	5m	50m	8m	42 m	15	630



For calculating capacity, fill in your numbers below and follow instructions.

(a)	(b)	(c)	(d)	(e)	(f)	
Length (m) of sidewall	Width (m) of sidewall	House size (square m) (a) x (b)	Less Storage area	Total useable floor space (c) – (d)	Birds/sq. meter	Capacity (e) x (f)
					15	

Worksheet B: Weighing Chicks

Example: A total of 30 chicks at 14 days of age are weighed in a bucket (10 chicks at a time). The three separate sample weights were:

- First weighing is 3306g
- Second weighing is 3318g
- Third weighing is 3345g

Total weight is 9969g (3306+3318+3345 = 9969).

We need to subtract the weight of the empty bucket which was 454g.

453g X 3 weighings = 1359g.

9,969 – 1,359 = 8610g which is the weight for all 30 birds.

8610g divided by 30 = 287g per bird.

The average weight for each bird in the flock is 287g.

Example

	(a)	(b)	(c)	(d)	(e)
	Weight (g) of empty bucket	Weight (g) of bucket with birds	Weight of birds only (b) – (a)	Number of birds in bucket	Average weight per bird (c) / (e)
Weighing 1 (f)	454 g	3306 g	2852 g	10	285.2 g
Weighing 2 (g)	454 g	3318 g	2864 g	10	286.4 g
Weighing 3 (h)	454 g	3345 g	2891 g	10	289.1 g
Average weight (f + g + h) / total number of birds			8607 g	30	286.9 g

Worksheet B: Weighing Chicks (Continued)

Fill in your numbers and calculate average weight

	(a)	(b)	(c)	(d)	(e)
	Weight (g) of empty bucket	Weight (g) of bucket with birds	Weight of birds only (b) – (a)	Number of birds in bucket	Average weight per bird (c) / (e)
Weighing 1 (f)					
Weighing 2 (g)					
Weighing 3 (h)					
Average weight (f + g + h) / total number of birds					

Worksheet C: Crop Fill

A good practice is to check the crop fill of your chicks no longer than 12 hours after delivery. The crop is a little pouch at the bottom of the neck just before the breastbone. The crop should be full and soft. If it is empty the chick is not eating. If it is hard, the chick is eating but may not have enough water to push feed through its digestive system. A good rule is that for every 1 gram of feed a chick eats, it will need approximately 2.5 grams of water. After 12 hours since delivery, randomly pick up 10 chicks and feel the crop. At least 8 out of the 10 should have feed in the crops and after 48 hours, all chicks should have feed in the crop.

- Should chicks not be having their crops full, that could mean any of the following:
- Chicks do not have enough water or the water quality is poor
- The feed size is too large
- Food and water are poorly distributed, unsuitable or not accessible
- The chicks are too hot or too cold and not eating
- Stocking density is too high
- Sick or distressed chicks

Should a problem occur, work to correct it and continue to check every four hours to see if there is an improvement.

Crop Fill Goal

Time After Delivery	Target Percentage of Flock With Full Crop
2 hours	75%
8 hours	80%
12 hours	85%
24 hours	95%
48 hours	100%

Photo: Checking for crop fill
Courtesy of Dr, Scott Gillingham; *iChicken*

Worksheet D: Properly Locating Thermometers in Poultry Houses

Thermometers are critically important tools for promoting poultry performance. Locating the thermometers in the right place in the poultry house so that poultry house temperature can be monitored and adjusted appropriately is key to bird comfort.

Thermometers should be located so they measure the temperature the birds are experiencing. This means thermometers must be located where birds are congregating. Generally, the best location for a thermometer is close to feeders and waterers. The thermometer should be hung on an adjustable cord or chain just high enough over the heads of the birds that the birds cannot reach them. It will likely be necessary to raise the height of the thermometer as the birds grow.

The thermometers must be located far enough from the heat source to be certain the thermometer is measuring the temperature of the poultry house and not affected by any source of heat, such as a wood or coal burning pot or electrical heat lamp. The thermometer should be located approximately 30 cm (1 foot) from the edge of a heat source.

- Do NOT place thermometers on the wall of the poultry house.
- Do NOT place thermometers near door, curtain or window openings in the poultry house.
- Do NOT place thermometers in drafty areas.
- Do NOT place thermometers in direct sunlight.
- Do NOT place thermometers in corners, behind equipment or in areas not representative of the true temperature the birds are experiencing.
- Do NOT place thermometers too high. Having the thermometer at eye level may be convenient, but the temperature at human eye level does not accurately measure the temperature the birds are experiencing.
- Do NOT place thermometers too low. Birds are curious and will peck at and play with anything hanging too close over their heads.