

Poultry housing and management in developing countries

Brooding and management of young chicks

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Hatched chicks should be active, uniform in size and healthy. Although newly hatched chicks can survive on their own body reserves for up to 72 hours, depending on environmental conditions, their survival is increased if they are provided with food and water within 24 hours of hatching. The sooner they are provided with these and a warm area, the higher the rate of survival. Chicks must not be chilled or overheated at any time.

BROODING SYSTEMS

Broody hens

Under natural conditions, the mother hen keeps the chicks warm by allowing them to nestle under her feathers. The chicks follow the broody hen around and learn to forage and drink by watching her behaviour. In small village poultry settings, hens can care for up to 15 chicks. Ideally, chicks should be provided with a commercial ration (Ahlers *et al.*, 2009) or other feed for at least the first two weeks, to improve the survival rate.

Spot brooding

For small flocks of up to 20 chicks, a small enclosure in the poultry house or a confined area can be set up. This can be made from cardboard or timber, with a heat lamp suspended over the enclosure to keep the chicks warm. When the chicks are provided with an ideal temperature, they spread uniformly over the enclosure. When chicks feel cold, they crowd under the heat source. If the pen is too warm, the chicks move away from the heat and pant with their wings spread out (Bell and Weaver, 2001).

For larger flocks of up to 400 chicks, circular enclosures are set up in the poultry house to retain them. These areas are usually made from Masonite or sheet metal, with a gas brooder suspended over them to provide the required temperature (about 35 °C immediately under the brooder). There should be sufficient space for chicks to move away from the heat source. Temperatures in the outer part of the enclosure may be as low as 20 °C.

Commercial layers are often raised in growing cages (of up to 20 chicks/cage) with warm-room brooding, or with a heat source over each cage in tropical climates. As the birds age, the stocking density is reduced by moving chicks to other growing cages.

Whole-house brooding

In large commercial operations, the whole shed is maintained at a temperature of 30 to 32 °C both day and night, using forced-air heaters. This can be achieved only if the shed is completely sealed. As most developing countries are located in the tropics, there is usually no need for whole-house brooding. When this

system is used, the house temperature is lowered by about 2 to 3 °C per week until it reaches ambient temperature, provided this is not below 18 °C.

Chick feeders

At one day old, feed for the chicks can be scattered on paper. After three to four days, the paper can be removed, and chicks provided with feed in shallow feeders on the floor or cages.

Chick drinkers

For village chicks, drinkers can comprise bamboo sections or water bottles. These should be cleaned and refilled daily. Feed and



Older style brooding cages for layer chicks: hot water pipes run along and above the brooder section at the back of the cages; an oil- or gas-fired heater heats the water



Oil or gas-fired hot air brooder units on side of shed for whole-house brooding: the entire brooding area is heated to the required temperature



Conveyor and pan automated feeding system for young chicks: for the first five days post-hatch every third pan in the line is replaced with scratch trays

water should be within 1.5 m of all chicks. In large flocks, automatic drinkers are typically used. These can be nipple, cup or bell waterers.

Daily management of chicks

Chicks should be checked four times a day, taking note of any abnormal behaviour and ensuring that they are healthy and not heat- or cold-stressed (Barnett and Glatz, 2004). They should be observed to see if they are able to eat and drink successfully from the equipment provided. Any dead chicks should be removed, and litter should be dry.

REFERENCES

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