
Trap nests for poultry — Specification



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Introduction

The provision of nests, perches and facilities for laying, dustbathing and foraging in poultry housing increases the opportunities for poultry to exhibit innate behaviours. Provision and design of nests and other furnishings in poultry housing may make positive (behaviour) and negative (e.g. injury) contributions toward bird welfare. Gallinaceous birds (chickens, quail etc.) are motivated to perch, nest, dust-bath and forage as part of their behavioural repertoire. Provision of perches, nests and substrate for dust-bathing in poultry housing may allow the birds to express a greater range of these 'natural behaviours' during confinement in caged and non-caged housing systems.

Trap nests for poultry — Specification

1 Scope

This Committee Draft African Standard specifies minimum requirements for construction of trap nests which apply to poultry species including chickens, ducks, turkeys and quails, geese, guinea fowl, partridges, pheasants and pigeons etc.

This standard excludes ratites such as emus, ostriches.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

trap nest box

arranged contraption that after a hen enters it she is confined until released by the attendant. It is very simple and may be built at a small cost

3.2

poultry

all birds reared or kept in captivity for the production of any commercial animal products or breeding for this purpose or fighting cocks used for any purpose and all birds used for restocking supplies of game or for breeding for this purpose until the released from this captivity

3.3

nest box

man-made enclosure provided for hens to lay egg

3.4

nest area

place where birds gather to lay eggs

3.5

litter

bedding material eg wood shavings etc

3.6

breed

either a subspecific group of domestic birds with definable and identifiable external characteristic that enable it to be separated by visual appraisal from other similar groups within the same species

3.7

strains

families or breeding population possessing common traits

4 General requirements

The following guidelines shall apply to fulfil the requirements that underpin the welfare of housed poultry:

4.1 Nest boxes, where provided, shall be easily accessible to the hens

CD-ARS 1235:2025(E)

- 4.2** Nest boxes shall be provided to laying chickens in lay in non-cage housing systems.
- 4.3** Nest boxes shall be provided for meat and laying breeder birds, during egg production.
- 4.4** There shall be enough number of appropriately sized nests for the strain and number of hens in each group.
- 4.5** Nest areas should be enclosed and provide a suitable floor substrate to encourage nesting behaviour.
- 4.6** Nest area flooring shall not consist of wire or plastic-coated wire.
- 4.7** Nest areas shall be kept clean and operational.
- 4.8** During nest-area training, nest-area lighting shall:
- a) only be turned on in the morning;
 - b) be turned off in the afternoon; and
 - c) not be used once birds have learnt to lay in the nest.
- 4.9** Alternatives to electric wires should be considered. If electric wires are used along walls and corners to prevent floor eggs, these shall:
- a) only be turned on in the morning during nest-area training;
 - b) be turned off in the afternoon; and
 - c) not be used once birds have learnt to lay in the nest.
- 4.10** Nest shall be clean (without broken eggs, manure, etc.) and attractive to the hen.
- 4.11** Nests shall provide seclusion from the flock, be designed and have a floor litter that encourages nesting behaviour.
- 4.12** Nest boxes and roosting areas shall be easily accessible and shall not be so high above the floor level that birds may be injured when ascending or descending.
- 4.13** Nest litter, where used, shall be kept clean, dry, friable and moisture absorbent.

5 Specific requirements

The following guidelines shall apply to fulfil the requirements that underpin the welfare of housed poultry.

5.1 Laying nests

5.1.1 Size of nest box

A typical nest box should measure 50 cm wide x 60 cm deep x 60 cm high. The laying nest prepared by this size is enough for 5-6 layers. It is advisable to place the laying nests in the dark part of the house to prevent exposure to the sun. Don't make them too big, as the hen will not feel comfortable.

5.1.2 Type of nest materials

Wire, wood, plastic, metals, clay and concrete blocks can be used to make trap nest boxes. Materials used to make nest boxes shall be easy to clean and disinfect.

6 Design

6.1 Manual nest boxes

6.1.1 Manual nest boxes are designed to allow farm staff to open for the birds to leave as well as collect the eggs. Nest boxes are typically constructed from wood, but they can also be made from metal, plastic, clays and concrete blocks. (Figures 1 and 2).

6.1.2 Manual nest boxes should be built in blocks of 4, 5 or 6 boxes depending on the size of available materials. Sometimes, smaller blocks of 2 or 3 nests are made as in-fills to fit a particular house/pen layout.

6.1.3 There are several designs of traps: examples are shown in below figure:



Figure 1 — Nest trap designs: a, wire trap; b, wooden paddle trap; c, plastic trap nest

6.1.4 Nests shall be fitted with a trap mechanism which provides hens with easy access to the nest box but prevents more than one female entering the nest at a time.

6.1.5 Trap mechanisms does not cause damage to the hen on entering or exiting the nest.

5.1.6 The front of the nest box should be fitted with ramps (also known as step-ups or alighting boards) that allow hens easy access to the nests.

6.1.7 Ramps need to be wide enough to allow two hens to pass and be horizontal or at an angle to the floor.

6.1.8 The ramp angle shall not cause the female to become unbalanced. An additional benefit of ramps is in preventing females from carrying floor litter into the nest.

6.1.9 Ramps are usually between 12cm to 18cm high depending on the strain of bird used, heavier birds generally prefer lower heights.

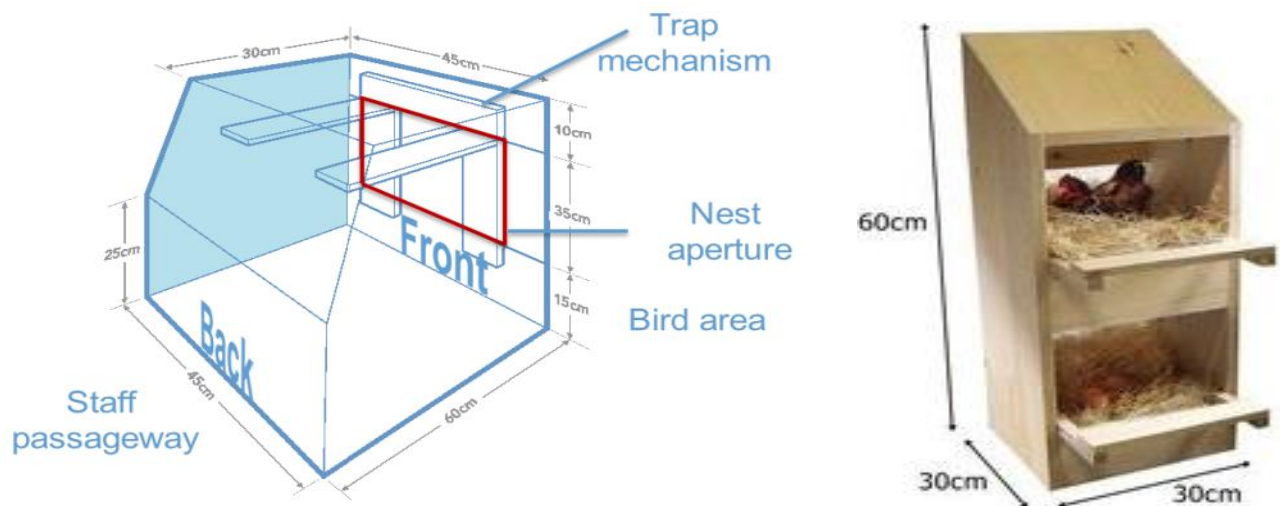


Figure 2 — Typical nest box dimension

6.1.10 The nest box should be large enough to allow a hen to turn around and stand easily within the nest. The correct size nest should allow the female to be pushed off the nest, collect the eggs (Figure 2) and check for broody birds.

6.1.11 Typical nest box dimensions are 50 cm wide x 60 cm deep x 60 cm high.

6.1.12 The minimum front opening height should be 35 cm and this should not be reduced by the nest trap.

6.1.13 Wider nests with a taller front opening are recommended for larger turkey strains.



Figure 3. — Plastic nest boxes placed on raised concrete platforms

6.1.14 Nest boxes can be constructed either with or without floors. Without floors (bottomless boxes) fit directly onto the concrete floor and thus the nesting litter is placed directly onto the floor. A bottomless box is also much easier to clean and can save washing time by up to 50%. Whilst bottomless nest boxes have some advantages (easier to clean and no alighting board required) they can be more difficult for farm staff to collect eggs and monitor broodiness due to being placed directly on to the floor. These problems can be alleviated by either lowering the house passageway between the nest boxes or by placing them onto a raised concrete platform (figures 3, 4 and 5).

7 Automatic nest boxes

7.1 Automatic nest box is a self-contained unit for poultry offering a convenient automated space for laying eggs featuring an automatic door, that trips and locks automatically, for entry and exit.

7.2 Eggs are automatically collected in a tray.

7.3 All traps made of zinc coated metal.



Figure 4 — Nest open (middle) and closed (left and right)

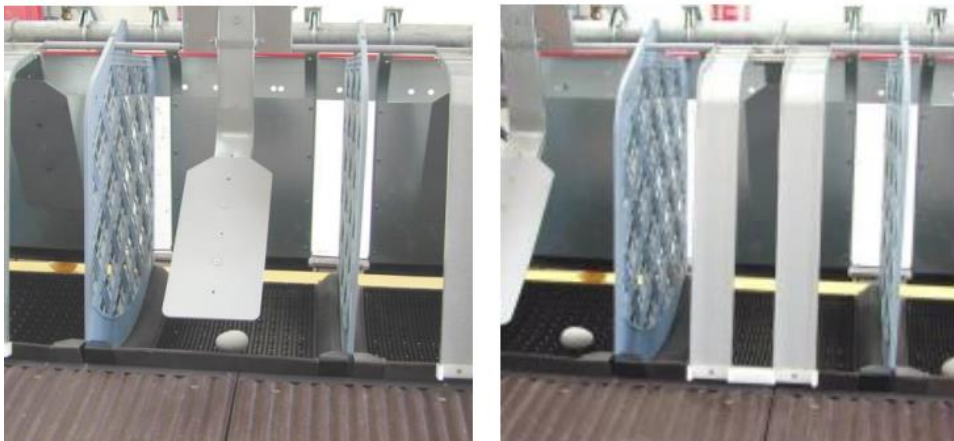


Figure 5 — Wide nest open (left) and closed (right)

Annex A
(normative)

Nest box management

A.1 Pre-stocking preparation

A.1.1 Ensure that the nests and mats have been cleaned and disinfected as part of the house cleaning process prior to the arrival of the new flock.

A.1.2 At least 8 cm depth of nesting material is required in the box and it will need to be topped up regularly and contaminated material removed, especially at the start of the laying period when there is an increased level of nesting activity.

A.1.3 Ensure that proper maintenance and testing of the nests has been carried out.

A.1.4 Ensure that the planned stocking density is correct for the house area and that you have sufficient nest boxes for the hens to prevent floor eggs and maximize production of good quality settable eggs.

A.1.5 Ensure that the alighting ramps are clean, at the correct height for the strain and, if sloped, that the incline is not too steep, to prevent hen slipping.

A.8.2 Positioning of nests

A.8.2.1 Ideally houses should be no more than 10 meters wide which facilitates 2 rows of nests positioned length-ways down the house.

A.8.2.2 Nests should be in a darkened area of the house or the nests need to be darkened at the start of production.

A.8.2.3 In open-sided houses nest boxes should be positioned in the centre of the shed so they are protected from the wind, rain and direct sunlight. In closed environment sheds nests can be placed near the outside walls.

A.8.3 Slope of nest floor

In automatic nests, the nest floor is sloped to allow the rapid roll-out of eggs from the nest onto the egg belt. Nest floors that are excessively sloped may not be comfortable, causing hens to seek alternative nesting sites outside of the system, generally provide nest floors with 12 % to 18 % slope. This range is widely accepted by laying hens, but there may be a hen preference for 12 % compared to 18 %.

A.8.4 Egg belts

Egg belts should be cleaned regularly and, if damaged, replaced between flocks. Egg belts that have been soiled with broken eggs may give the nest an objectionable smell, causing the hens not to use the nests. In automatic nests, the brushes that hide the egg belt from view of nesting hens may become worn, revealing the moving egg belt. Hens can be disturbed by the movement of egg belts and leave the nest. Not running the egg belts during the peak egg laying times can mitigate this problem.

A.8.5 Nest lights

String LED lights placed inside automatic nests can be used to attract hens to the nests in the morning. Nest lights are typically turned on one hour before and turned off one hour after the house lights come on. Nest lighting can be especially effective during the nest training period. Nest lights can be discontinued after the hens are consistently using the nests.

A.8.6 Training layers to use nests

During the first week of egg production, the females shall be encouraged and trained to use the nest boxes.

Visit the laying house four or five times per day to familiarize the birds to daily activities. Do not walk through the passageways as this will disturb the birds whilst they are learning to use the nests. Do not add litter to the floor area during the training period.

A.8.6.1 Manual nest training

A.8.6.1.1 Make nests available 24 hours per day beginning no later than 7 days post-lighting.

A.8.6.1.2 Traps should be either tied open or completely removed from the nest entrance (depending on trap mechanism) until egg production reaches 25 % to 35 %. Easily accessible nest boxes will encourage the female to enter the nest.

A.8.6.1.3 Reinstate the traps gradually into the working position over a period of 3 to 4 days.

A.8.6.1.4 If you observe an increase in floor eggs during this time, reduce the number of traps being untied into the working position to keep the nests as easy to enter as possible.

A.8.6.1.5 Eggs should be collected and hens pushed off the nest. The frequency of egg collections should be increased gradually as egg production increases.

A.8.6.2 Automatic nest training

A.8.6.2.1 The nests, but not the pen area, shall be darkened at the start of production to attract the hens to the nests. This can be achieved by lowering the light intensity above the nests or providing some additional shading on top of the nest.

A.8.6.2.2 The nest-box opening and closing mechanism should be ran twice per day, to familiarize the birds with the operation of the nest mechanism and minimize stress associated with its activation.

A.8.6.2.3 Automatic nest boxes should be closed at night. As soon as the hens are in the laying house the Inest should be opened 30 minutes after lights on and closed 30 minutes before the lights switch off. This will stop the birds from sleeping in the nest at night and prevent the mats from becoming dirty.

A.8.6.2.4 The nest control unit can be set to either manual or automatic push-off. At the start of lay it is preferable to use the manual setting so push-offs can be customized to the rate of lay, switching to automatic timed push-offs between days 10-12 of production.

A.8.6.2.5 When the system is on a manual setting, the stockman should assess the level of nest box activity to determine when to push-off the females and collect the eggs. Gradually increase the number of push-offs from the nests as the egg production increases (Table 5).

Table 1 — Example of push-off and egg collection program

Egg production %	Number of push-offs and egg collections per day
10	2
20	4
30	6
50	8
70	10

80 ⁺	12 ⁺
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