

First week management of broiler pekin ducks

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Over the past few years commercial duck production has become more and more technical due to the unpredictable economical situation, especially regarding raw material pricing.

Reducing production costs by improving technical results, such as mortality losses during the first breeding week for example, significantly increase efficiency and margin of broiler duck operations.

In order to achieve this goal, which measures should be set up, which critical points should be verified to anticipate and avoid any unexpected losses, and what are the most optimal conditions for duck breeding, that are most likely very well known but sometimes forgotten?

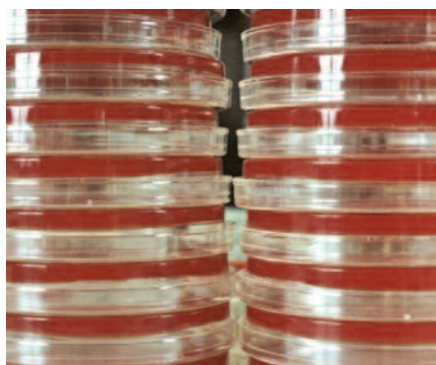
To answer these questions, we should first define what the fundamental rules are in order to succeed.

Biosecurity

Before the birds arrive the building and breeding equipment should have been completely cleaned, washed and disinfected. The quality and efficiency of disinfection can be controlled by using a contact box to evaluate the total bacterial level as well as specific samples for salmonella testing.

At this stage biosecurity measures must be

Control disinfection quality by evaluating bacteria levels.



Simple blue polystyrene plates are used for starting day old ducks.

set up before entering in the rearing building. The outside area, identified as a 'non-protected' area, should be physically separated by a bench or fence from the inside area, identified as a 'clean' area.

Specific boots and clothes should be put on to go inside and staff should walk through a foot dip filled with disinfectant. This is also the opportunity to set up a 'neutral' zone where clothes can be changed and hands washed.

Temperature control is very important for the first days of a duckling's life. According to local conditions (technical, economical and climate), the heating system has to be set up to reach the standards shown in Table 1.

Building set up

Whatever the building set up, whether it is closed or open sided, day old ducklings will need many feeding and drinking points in the first few days of life to avoid dehydration. This is crucial to maintaining good uniformity and to reduce early mortality due to a lack of food or water. The optimal set up would be to have one specific drinking point, such as a chick fountain, polystyrene plate or other drinking system for day old poultry for 50 birds for the first few days.

Polystyrene plates (shown in blue in the photograph above) are very efficient as the birds walk through them and it stimulates the birds to drink. In addition, they are noisy and this attracts the other ducklings to the

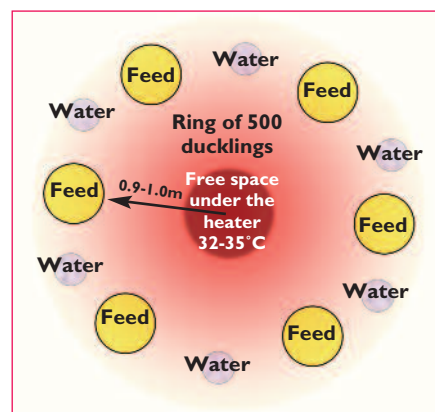
plates. The same principle applies to the feeding points; feed can be distributed on a cardboard support as noisy as the polystyrene plates, for the first two days, in order to stimulate feed consumption.

All this specific equipment has to be set up before the birds arrive and should be removed progressively day by day during the first week of life. Setting up this specific drinking and feeding equipment for day old ducklings does not mean that the equipment used for the further stage, such as bell drinkers or nipples, does not have to be installed. It really does need to be placed early for the ducklings to get used to it.

As shown in Fig. 1 installing a start up zone per group of 500-800 day old ducklings

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Fig. 1. The ideal installation for starting up ducklings.



Age (days)	Temperature under heater (°C)	Ambient temperature (°C)
1 - 3	32-35	27
4 - 7	30-32	23
7 - 14	25-30	20
14 - 21	20-22	18
21 +	According to the season	15

Table 1. Temperature recommendation by Grimaud Frères.

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must not be neglected. The purpose is to provide the birds with quick access to the feed and water, maintain the birds very close to the heat source, and to keep a certain equilibrium of the quantity of ducklings between the different heat sources.

Density

The density will vary depending on the type of flooring used. The use of plastic slats is an alternative, but is not well adapted to pekin duck behaviour (see Table 2).

All kinds of straw, such as rice and wheat straw or wood shavings, are much more convenient for common ducks as long as they are good quality and dry, to avoid the risk of aspergillosis contamination.

The quantity of litter has to be thick enough to keep the birds' feet away from the concrete floor which could create prostration due to the birds feeling cold. New litter needs to be added on a regular basis from the second day, especially underneath the watering point.

The technical performance and genetic potential expression can vary because of an increase of density on identical flooring (Table 3). The density at the slaughter age is known from the beginning, since the birds are placed in the building and it has to be adapted to the weight and to the slaughter age requested by the market.

Day old duckling arrival

The uniformity of the birds has a direct influence on the first day mortality rate. It is fundamental to set up hatching eggs from breeders of the same stage of lay (beginning or end of the lay). However, a good quality duckling and a perfect development during the incubation stage is not sufficient to ensure a good start up; the eye of the farmer and technician also has a crucial importance.

Table 3. Density test on wheat straw flooring.

Density	6 ducks/m ²	4 ducks/m ²	Difference (%)
Live weight at 28 days (g)	1703	1760	3.2
Live weight at 49 days (g)	3352	3724	9.9

When the birds arrive they should be distributed uniformly per brooder surround. Then, a complete observation of the movements of the first day old ducklings will tell the producer a lot about the start up conditions, especially regarding temperature.

Fig. 2 explains how to analyse the birds' distribution underneath the heater, which is a reasonable indicator as to correct brooder temperature. Taking note of the leg temperature and shape indicates what action should be taken. If legs are cold, it is a temperature issue; if legs are dry and skinny, it is a dehydration problem. Here, the ducklings can be helped by the farmer dipping their beaks in the drinking water.

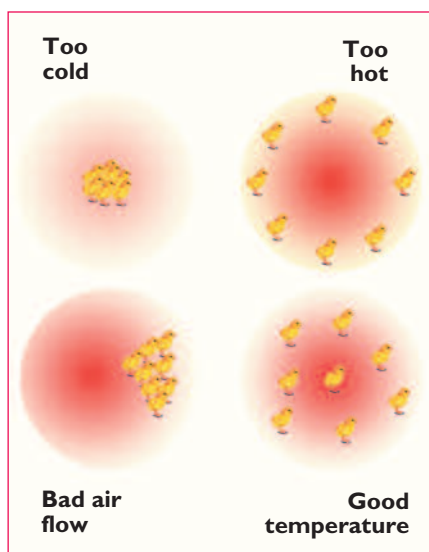


Fig. 2. Distribution of birds underneath the heater.

During this first day, the birds must be moved several times and, for the first few days, feed and water should be renewed twice a day.

In addition, air replacement should not be neglected. It should be sufficient to not go over 10ppm of ammonia at the bird's level. Low ventilation to save energy in warming up the building has a negative effect on the

development of the ducklings. Also, if combustion brooders are used, pay attention to carbon monoxide which is poisonous to both staff and ducks.

Feed and water quality

Nature has given the duck a beak like a spoon. This means the duck is not comfortable eating powder (mash feed) and a regular pellet is too big at a young age. This is why a good quality of feed presentation, such as crumble feed, does help a lot for the duckling to succeed at start up. Being water fowl, ducks tend to use a significant amount of water, much of which is not drunk, but it does not mean that water quality can be neglected. Feed characteristics requirements as well as water quality are mentioned in Grimaud's technical guides.

First week growth

Technical data, such as mortality during the first few days as well as the bodyweight gained, are the two main technical criteria that need to be verified. Mortality in the first week should be below 0.6% and growth during the first few days has to be compared to the genetic potential of the breed.

Day old ducklings like to be confined at the beginning, but it is very important to increase the space from the third or fourth day according to the webfoot shape and feather shape. Too high a density for too many days during the first week of life would definitely have negative consequences on further bird development, such as locomotor disorders and bad feathering quality.

A long day length with sufficient light intensity is important in the early stage to ensure that all ducks find feed and water easily; this will reduce early losses. It is paramount to keep 24 hours of light for the first few days with an intensity of 40-60 lux. Then, from the fifth day of life, the daily lighting duration can be reduced progressively for an hour or half an hour per day down to 16 hours per day, with an intensity of 20 or 30 lux.

Any mortality or culling should be clearly and regularly recorded and causes analysed in order to take corrective action. Weekly growth, water and feed consumption should also be recorded and then the flock's performance can be assessed in relation to its history. ■