

Successful management of the young breeder duck in the growing period

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Managing pekin duck breeders throughout the rearing period up to the pre-laying phase can be compared to preparing an athlete for a competition.

The rearing phase would correspond to the training, and the laying phase would be the competition.

Most likely if the rearing phase is correctly managed birds will perform well during the laying period. Achieving this goal is not that simple as many criteria must be under control, such as lighting schedule, vaccination program, temperature control, litter management and air replacement according to each building setup.

However, the main difficulty remains in controlling feed intake and body weight growth respecting rearing conditions adapted to duck behaviour and following recommendations from the genetic supplier.

It could appear to be an easy task for some farmers and more complicated for others. Everybody could succeed with their own method; however, managing growth and feed intake can become very complicated in case of high stocking density, poor environmental conditions or inadequate drinking or feeding equipment.

Rearing pekin duck breeders is a crucial stage that should not be neglected. It must be considered as a long term process where every step counts towards success during the laying phase.

Two important phases

We are assuming the starting phase, corresponding to the first two weeks of age, has been successfully completed and the birds are on the right track. After the starting phase, the rearing phase, from the second to the 20th week, can be divided into two phases.

The first one would be up to the 10th week of age. The purpose is to build a strong skeleton and support muscle development.



Vietnamese staff weighing ducks at Grimaud Vietnam GP farm.

A strong body will ensure high resistance and longevity. During this stage daily growth is about 30g.

The following phase, from the 10th week up to the 20th, is the maintenance phase. We can assume that strong skeleton and carcass has been correctly built.

The purpose is to now slowly bring the birds to target weight at 20 weeks, the age at which birds are about to be sexually mature and will enter progressively into the production phase. Daily growth is 8g, which is four times less than the previous period.

As the growth profiles are opposed for these two periods, feed characteristics must be significantly adapted. The main difference concerns the amino acids, which are responsible for muscle growth, and metabolisable energy.

As an illustration of these differ-

ences, Table 1 shows the level of energy, protein and amino acids for both grower and maintenance feed characteristics.

The challenge of these two rearing periods remains in reaching the target live weight at 20 weeks of age by respecting several fundamental rules.

The number one rule is definitely the uniformity. A good uniformity target is over 80%, which means that this proportion of ducks weighed should be in a range of $\pm 10\%$ compared to average weight.

The number two rule would be to prevent excess of muscle and fat deposit. The purpose is actually not to reach a target weight at 20 weeks of age whatever is happening throughout the rearing stage. It is a daily follow up by looking at the bird's behaviour and adjusting feed intake, to be as close as possible to the target live weight supplied by the

genetic selection company. Since a severe feed restriction is applied during these five months, competition between birds is very strong and stressful.

Reducing stress, competition and mortality is the third fundamental rule. This is very well controlled and respected by experienced farmers, and should never be neglected and forgotten.

If not properly managed, the competition and stress that result from feed restriction can damage uniformity and the livability of the flock.

Equipment needs

We should remember that birds are not expressing their genetic potential in terms of growth during the growing period and, therefore, are permanently hungry. Every meal will last only a few minutes. This highlights that access to feed is crucial.

All over the world we will encounter many different types of feeding systems, automatic or manual, but we can establish two different types of equipment as linear and circular.

The availability or access to a feeding point can be measured in centimeters per bird. We will measure the circumference of the circular equipment and the length of the linear one and define a standard.

Taking into account that we can fit more birds around circular feeders than linear ones, our recommendation will be 6-7cm per duck for circular feeders and 10cm for others.

As an example, a circular plate with 120cm circumference divided by 6cm/bird would fit 20 birds. According to the total population it is easy to calculate how much equipment is needed. These standards allow a good majority of the ducks to be able to have access to feed at the same time. In order to be accessible, feeding equipment should be installed in the middle part of the rearing building.

Ducks will eat up to 150-180g of pellet feed in a few minutes and will be very thirsty afterwards. Drinking equipment availability is also crucial.

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Table 1. Nutritional characteristics from a young breeder rearing guide from Grimaud Frères Selection.

	Grower feed	Maintenance feed
Metabolisable energy (kcal/kg)	2850	700
Crude protein – minimum (%)	17.5	14.5
Crude protein – maximum (%)	19.0	16.0
Methionine (%)	0.4	0.3
Methionine + cystine (%)	0.7	0.6
Lysine (%)	0.8	0.7
Threonine (%)	0.55	0.45

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If only a nipple system is used the need is one nipple for five birds considering 180ml flow per minute per nipple.

Ducks, as waterfowl, like to 'play' with water, so the use of bell or bowl drinkers is highly recommended – one drinker for 75 ducks, if only bowl or bell drinkers are installed. The perfect set up remains a mix of both – one bowl/bell drinker per 150 birds and one nipple for 10 birds.

Feeding management

Feed distribution can be managed in different ways. Even if we recommend feeding breeders every day with the same feed quantity, feeding five or six days out of seven or the 'skip a day' method can be an alternative if, for example, equipment availability is a limiting aspect.

Feeding five or six days out of seven means that the quantity of feed supposed to be distributed on a full week is actually distributed on five or six days, skipping one or two feeding days. The 'skip a day' method means that birds are fed every other day with double quantity.

It is fundamental that feed is distributed every day at the same time – a couple of hours after the light goes on.

Live weight control

Another aspect as crucial as feeder availability is live weight control, in order to make sure that real live weight corresponds to the theoretical target on a weekly basis.

The main difficulty with this weekly task is to make sure the figure obtained by weighing the birds is a representative data of the reality. Sampling and methodology are very important to succeed and the ideal way is to use a portable fence, make a sample and weigh birds one by one.

Inside the duck building, by setting

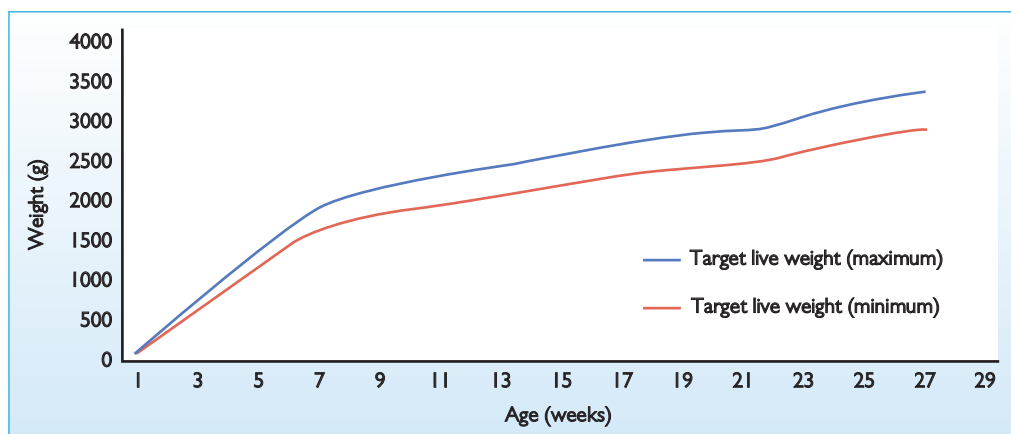


Fig. 1. Growing chart of GL30 pekin breeder females during the rearing period.

up rearing pens of 2,500-3,000 ducks, live weight management will be easy and efficient. Then, weighing about 100 birds per pen in different places, on a weekly basis will allow the correct interpretation of the average weight and the uniformity data obtained.

Statistically, some authors suggest weighing about 90 birds to estimate a 95% confidence interval for the average weight of 1,000-5,000 bird flock.

The most important fact is to weigh all the birds sampled. Most of time the lightest subjects are weighed last and are very important for the uniformity calculation interpretation.

Weighing has to be done from the first week of age, on the same day as much as possible, and before feeding the birds. There is less stress, there is no data distortion because of feeding, and animals are easier to handle with an empty stomach.

Data recorded are compared to the theoretical goal and daily feed intake is adjusted. Fig. 1 is an example of a growing chart for the GL30 breeder – the mother of the Star 53 broiler pekin duck.

Taking into account that the birds will never react immediately to a decrease or an increase, we have to recall that an adjustment of 5% of the daily diet is already very significant even if it is just a few grams per

day. In some areas where ducks have low body maintenance requirements, daily feed intake could be dangerously reduced in order to maintain live weight in the target.

This will increase nervousness, competition, stress and it will affect uniformity rate. In such situations, the formula dilution remains an appropriate option allowing higher feed consumption for the same target weight and, at the same time, reducing competition and stress.

Underweight birds

One major risk due to feed restriction is to penalise the underweight birds. A general grading is often recommended at this stage.

Generally, visual graduation is convenient. The weakest animals are placed in a hospital pen where they will be fully fed to recover as quickly as possible. To help reduce nervousness and stress, several strategies can be adopted, for example the use of dim lights in closed duck buildings or the use of black curtains in open sided houses.

To develop correct sexual maturity, males and females are mixed together at 17 weeks of age. It is important that both uniformity and average live weight are on target for both males and females at this time, as after the birds are all mixed it is

practically impossible to manage male and female feed intake separately.

Wrong management during the rearing phase will have considerable consequences on further performance during the laying phase.

The cost of raw materials has become more and more unpredictable and no one can afford to spend money on rearing breeders which will not perform according to their expected genetic potential.

If birds are overweight when they reach the pre-laying phase, the risk of a prolapsed oviduct in females is significantly increased.

Females will lay bigger eggs but also fewer eggs which will affect the economical profitability of the flock as there will be less ducklings produced.

On the other hand, if female body weight is lower than the target, there is a major risk of bird losses and damage during lay because of physical fragility. On top of that, lay persistency might be reduced as well as peak of lay.

Succeeding in managing growth during the young breeder stage is a key step to obtaining good laying performance afterwards. This is not the only crucial step as pre-lay phase management is also critical and fundamental for future performance, however this then becomes another challenge to face. ■