



The Hitchhiker's Guide to Hatching your Pekin Duck Eggs



Introduction

Most of the Pekins found in the UK today have German origins where they have been imported by breeders over the last 100 years or so. Hence they are often referred to as German Pekins.

The German, in "German Pekin" standard, means they have the upright carriage, almost like a penguin or the more common Indian Runner duck. The Domestic Waterfowl Club simply use the term Pekin but most websites use the added word German.

We have been breeding and showing Pekins for the last 6 years, most of that time alongside Indian Runners.

The object of this little booklet is to try and assist our customers to get the very best hatching rate possible after buying our eggs. Ducks eggs are a little more difficult to hatch than hen's eggs and Pekins a little harder still.

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Please Note:

If the following seems too complicated then just buy or rent an automatic incubator and run it at 35 to 45 per cent humidity and you should get a fair number of eggs to hatch after 28 days.



The Pekin or German Pekin Duck

The Pekin was entered into the British Poultry Standard in 1901. Like all white ducks they are very eye catching, but Pekins especially so with their upright penguin stance, wobbly walk and chubby cheeks. They have an almost regal appearance, with their cream plumage, sparkling eyes and chatty nature. The Domestic Waterfowl Club simply uses the term Pekin but most European websites use the added word German- hence German Pekin.

The Pekin is classified as a large and heavy duck by the Domestic Water Club of Great Britain but they are an active duck, continually on the move foraging in long grass and dabbling in the mud.

They are not a common breed but very sought after by those who want something special. The going price at November's National Poultry Show in Telford (2016) was £150 a pair. As all Pekin owners know, their ducks are head and shoulders above the rest – I am sure that's why you purchased our Pekin eggs!

But first you have to hatch them out and unfortunately hatching duck's eggs is more demanding than hatching hen's eggs.

So let's start with your eggs. If you put rubbish into your incubator you will get rubbish out – a no brainer really.



Our eggs or now your eggs!

For 2017 we have 3 males and 6 females for breeding. They are all of sound stock and conform to the breed standard.

Fertility should not be a problem as they have water to tread on and they have 4 acres of grass to forage in. Goose and Duck Breeder Pellets are provided from March to June.

Your eggs were collected and selected to give you the best chance of hatching. When collected the eggs were sized such that they were not too large, which means they could be double-yolkers. A typical good quality hatching egg is about 95g. Also they must have a regular shape.

Your eggs are marked with the date of lay and their weight. They would have been stored up to 3 days before dispatch to you. In that time the eggs were stored in what was our old dairy. This is north facing and the coolest place in the house at a temperature of about 14°C. The humidity is also high which ensures that there is minimal water loss from the eggs by evaporation.

For optimum results the eggs should be less than 10 days old: ideally 7 days old when put into your incubator. As 1st class post takes 2 days to arrive and you need to rest your eggs for a day, your eggs will be at their best when you put them in the incubator.

When your eggs arrived you will have noticed that they are packed in an egg box and that box is surrounded in crushed news paper.



HG

This method of packing has been proven over the years to reduce breakages to zero but also reduce any transport shock"on the eggs, which can damage or twist their insides.


Unfortunately Pekin eggs do not conform to the standard egg shape. Pekin eggs are white and round and do not have an obvious air sac end. This sometimes generates a problem for the duckling as it does not know which end to pip at. It can pip at the wrong end (without the air sac) and if help is not to hand it will suffocate.

You should allow your eggs to settle for 24 hours before putting them into the incubator. They should be stored at a room temperature of typically 20°C for this period of time. What you do not want to do is put cold eggs into a hot incubator!

Hatching Your Eggs

Hatching waterfowl eggs is more demanding than hatching less fussy chicken's eggs. You need to note and regulate all the critical conditions of incubation to get a good yield. The four key factors are:

- Warmth – temperature
- Humidity - measured in %RH
- Ventilation
- Turning

A photograph of three white German Pekin ducks in a wire cage. The ducks are standing on a bed of straw. A white label is attached to the cage bars, and a red sign is visible on the right side. The ducks have bright yellow beaks and are looking in various directions.

Lot 228: German Pekins - 2 females and unrelated male

Me
Now
Ma

EXI

Pre Number

Warmth

To encourage the embryos to develop at the correct rate the eggs need to be at the optimum temperature. This is 37.3 °C measured at the centre of the egg. With a forced air incubator (that is one with a fan inside) it is just a matter of setting the control knob to that temperature. But with a still air incubator there is no air movement so the temperature is set higher – it is important that you consult the manual for setting the correct temperature if you have a still air incubator.

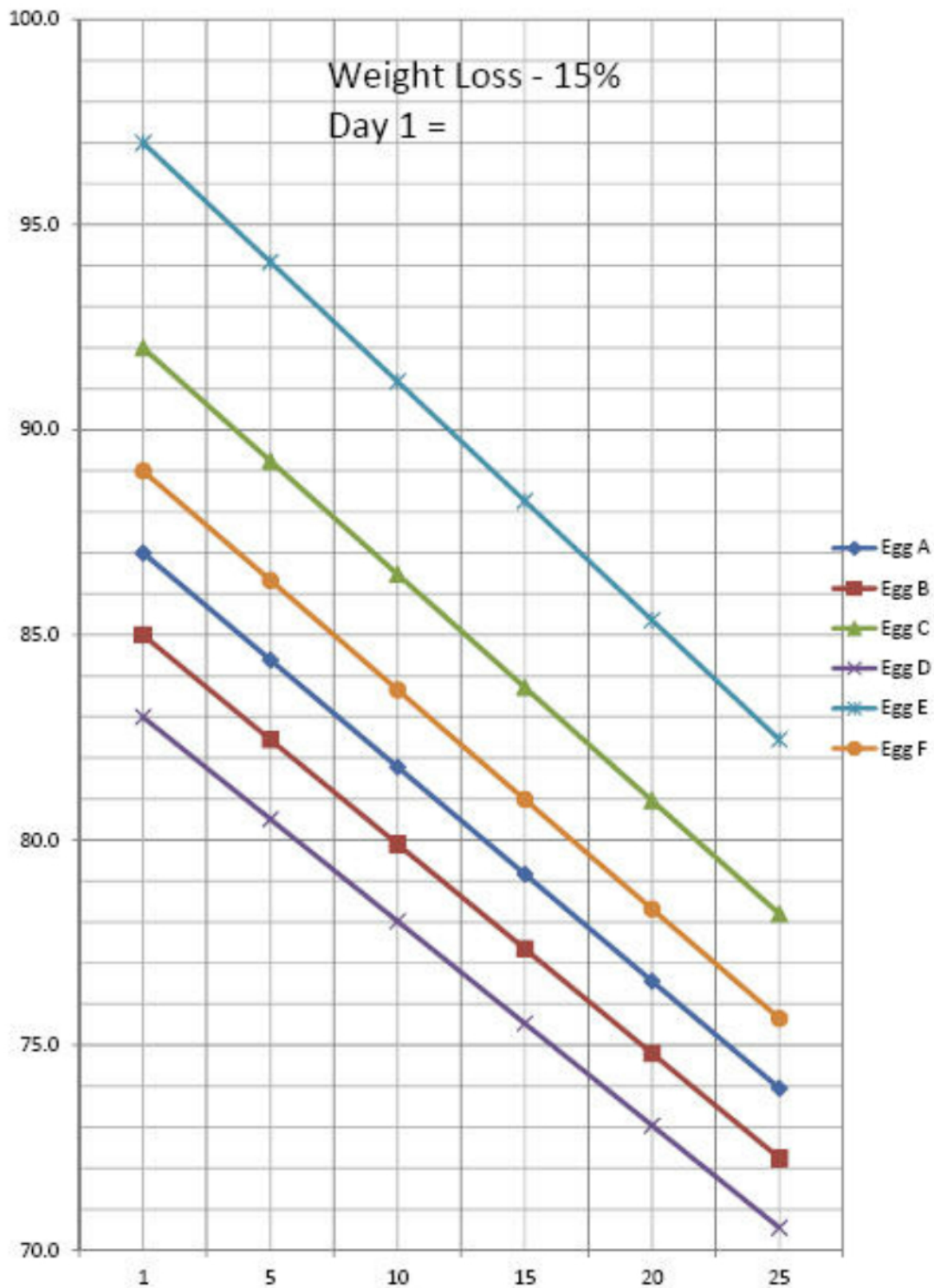
Humidity

You may ask why is the humidity level of the air inside the incubator of such importance. Well humidity determines what is called percentage weight loss.

An egg must lose a certain amount of water during the 28 day period of incubation if the duckling is to emerge alive from the egg. It is the humidity level in the incubator that controls how much water is lost from the eggs during incubation, in other words how much weight is lost or weight loss.

It is essential that the eggs lose 14-15% of their weight over the incubation period. Different humidity levels are needed at certain stages of incubation, with very high humidity at the time of hatching.

Weight Loss - 15%
Day 1 =



Typically humidity levels would be about 35-45% RH for most of the incubation process.

Full details will or should be in the manufacturer's hand book. Near the end of the incubation the humidity level needs to be raised to 65 or 70% RH to allow the duckling to get out of the shell.

All incubators have one or more water trays or troughs which should be kept topped up with water to maintain an appropriate humidity level, according to the manufacturer's instructions.

Some incubators have built-in hygrometers to monitor or even adjust the humidity level for you.

Most cheap hygrometers are not very accurate so it is always better to check the humidity level by assessing the effects on the eggs rather than to obtain actual measurements from an hygrometer.

You should also be aware that the environment in which the incubator is set up can have an effect on accurate humidity levels. If the ambient humidity outside the incubator is very dry i.e. low %RH, then incubation humidity levels inside the incubator will also be low.

As they lose weight from their shell the size of the airspace will increase – this also offers a rough guide to the rate of weight loss. This effect can only be seen by candling the eggs. It is not as accurate as measuring the weight loss.

Weight Loss set at 15%

Date Eggs set: Day 1

Day 5	Average Weight loss over 6 eggs =	4.5 %
Day 10	Average Weight loss over 6 eggs =	8.8 %
Day 15	Average Weight loss over 6 eggs =	11.9 %
Day 20	Average Weight loss over 6 eggs =	12.7 %
Day 25	Average Weight loss over 6 eggs =	15.4 %

% loss	Egg B		% loss	Egg C		% loss	Egg D	
	85.0	85.0		92.0	92.0		83.0	83.0
2.3	82.5	85.0	0.0	89.2	87.9	4.5	80.5	80.0
8.0	79.9	80.0	5.9	86.5	85.0	7.6	78.0	80.0
9.2	77.4	77.0	9.4	83.7	81.0	12.0	75.5	74.0
13.8	74.8	75.0	11.8	81.0	80.0	13.0	73.0	72.0
14.9	72.3	73.0	14.1	78.2	78.9	14.2	70.6	70.0

This is where we get to measuring and monitoring weight loss.

Weight loss can be monitored by measuring the weight of the eggs. Measuring the loss of weight is probably the better technique to use but requires a reasonably accurate balance, which you can buy on EBay for as little as £6.

You know the weight of each egg on the morning it was laid as this is marked on each egg. The weight loss within the first 7 days will be very small as the eggs were stored correctly and then transported in a cool condition to you.

If you want to measure their weight again before putting them in the incubator then that's fine.

The method is quite simple and should take about 10 minutes every 5 days. You note the weight of the eggs before setting and you weigh them as incubation progresses. Plan to do this at say on the 5th, 10th, 15th, 20th and on the 25th day of incubation.

Remember, it is essential that the eggs lose 14-15% of their weight over the incubation period.

You need to start off by drawing a straight line graph, with the initial weight at the start of incubation (day 1) and the initial weight less 15% at day 25. This is your reference line for the ideal weight loss.



Now the weight loss of your eggs in the incubator will certainly not follow that linear line you have for that 15% weight loss! But by removing a batch of eggs or better still each individual egg and weighing them at regular intervals, the weight loss (loss in weight) can be monitored and added to the graph.

With this information you can make adjustments to the humidity level to increase or decrease the weight loss to keep the incubation process on track for 15% weight loss at the 25th day.

The Golden Rule:

- * If weight loss is below the reference line then the humidity level is too low – increase the humidity.
- * If weight loss is above the reference line then the humidity level is too high – decrease the humidity.

To increase the humidity level you need to increase the “surface area” of the water in your incubator, not simply add more water to the trays or troughs. One method to increase water surface area is to drape a J-cloth into the water tray and spread this over the floor of the incubator. The water will be drawn into the cloth and evaporation will increase the humidity level.

To reduce the humidity simply reduce the surface area of the water with a piece of plastic or metal foil.



The measurement of humidity level within the incubator is the most difficult thing to get correct but it is critical in getting a good hatch from your eggs.

To help you with this a personal weight loss graph is included with each batch of eggs you purchase. This will be emailed to you along with a weight loss calculator as a spread sheet.

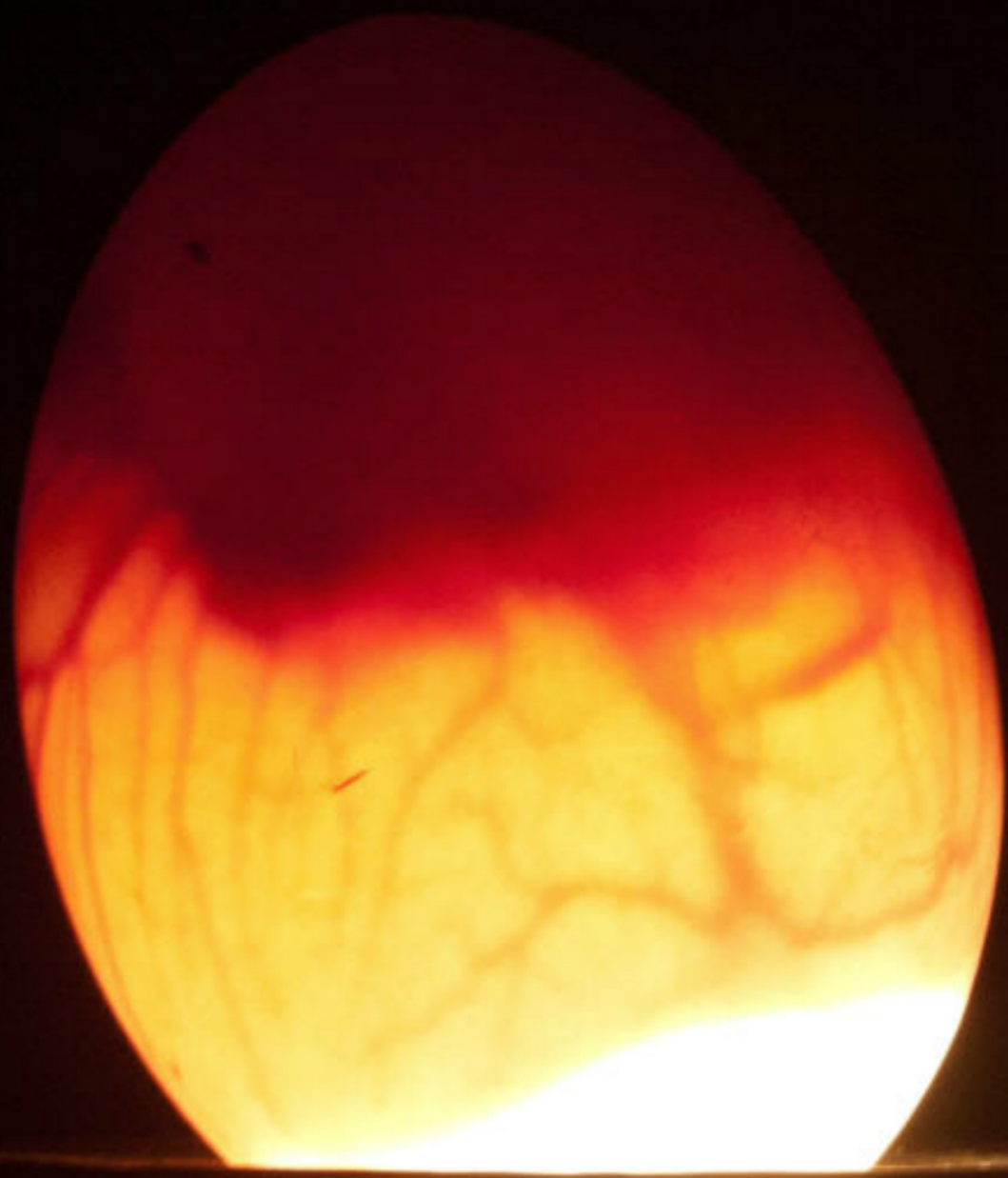
It should be noted that eggs which fail to lose enough water result in “dead in shell” ducklings.

These have tried to break the membrane to get into the air sac to breathe but have failed due to excess liquid.

- * PLEASE NOTE: If the above seems too complicated then just buy or rent an automatic incubator and run it at 35 to 45 per cent humidity and you should get a fair number of eggs to hatch.

Ventilation

You need to ensure a good supply of oxygen to the egg and just as importantly remove the carbon dioxide. Also obtaining an appropriate air flow encourages evaporation of water for the essential weight loss of the egg.



Turning the eggs

This must be undertaken at regular timed intervals to prevent the egg membranes from sticking to the inside of the shell and to increase the oxygen intake of the embryo which encourages the correct development.

Most incubators will have some sort of automatic egg-turning facility but if not turning the eggs needs to be carried out at least 3 times per day. Make sure that they are turned an odd number of turns per day and do not start until the 2nd day of incubation.

Candling the eggs

Candling is not critical for the incubation process but can be used to offer a rough guide to the rate of weight loss. As the egg loses weight from its shell the size of the airspace will increase in size.

However the most important aspect of candling is to see the development within the egg - infertile or any dead in shell can be safely removed from the incubator.

Also you should mark the air sac end of the eggs. You may need to know later!

I tend to candle at about the 20th day – any clear eggs are then infertile and removed.

Candling lamps can be purchased on EBay or you can make your own very simply.



Day 25- Nearly There

The eggs no longer need to be turned and the ducklings should now be manoeuvring into the correct position to start pipping, that is when the ducklings breaks through the egg membrane into the air space and makes a break in the egg shell. You should see this break in the shell ideally at the end which you marked at candling – the air sac end!

Over the next few days you should be able to hear the ducklings chirping inside their shells when you hold the eggs to your ear. Try it!

As soon as the eggs are pipped you need to ramp up the humidity as this will stop the exposed membranes from drying out and becoming tough and leathery as this prevents normal hatching.

Not all eggs will pip at the same time and so it will be almost impossible to provide the best conditions for both pipping and hatching.

This is where a hatcher or second incubator comes in handy. The hatcher needs to be running at a high RH of 65/75%. As the eggs start pipping they are transferred to the hatcher.

However most people do not have a separate incubator or hatcher, so the best thing to do is wait until half the eggs left in your incubator (remember dead in shell and infertile eggs should have been removed by now) have pipped and then increase the humidity to 65% or more.



Try not to keep opening the lid as this just allows the moist air to escape.

The ducklings should hatch on the 28th day, which is after a rest of between 24 to 36 hours, after they pipped. The ducklings should start to rotate in their shells and complete the hatching process. However there are often variations in this timing due to their individual rate of development.

You need to keep watching them at this stage as some individuals fail to cut off the lid and can suffocate. If there is a problem at this stage it can be helpful to enlarge the hole very carefully with tweezers or even a small pair of long nose pliers. These tools will not harm the duckling provided you are careful as there will be a large air sac space by now.

Please note: A yolk sac is attached to the developing duckling inside the egg and is normally absorbed during the final days of incubation. Very occasionally a duckling may hatch with its yolk sac hanging out from its bottom. The yolk sac will naturally be re-absorbed inside the duckling within about 24 hours. It is important to be aware of this, as you may need to help the duckling out of its shell if you find this situation has occurred.

It is important that the duckling does not dry out as it can easily get “glued” to its shell. A spray with warm water will help keep it moist.



Not all the eggs will pip or hatch on the 28th day so it is important to wait at least 3 days before discarding unhatched eggs. If the temperature was a few degrees below that magic 37.3 °C then the eggs would develop more slowly and hatch a few days later. After this time you can regard those unhatched eggs as “dead in shell”.

Do not discard these eggs as you need to break into the air sac and open up the shell to check if there is an excess of water coming from the egg. If there is then the incubator was run at too high humidity.

Pipping at the wrong end is more common with Pekin than other breeds like Runners.

You will have marked the air sac end. So if pipping starts at the other end you will see it!

Ducklings in this situation will need help as there is no air sac at that end of the shell so they cannot breathe and if left will suffocate. You need to make a small air space for them to breathe by removing a small section of shell. There may be some bleeding but this should not stop the duckling hatching with your help.

Wait until some of the other ducklings have hatched cleanly, and then start removing a little shell every 30mins or so. Eventually over a few hours there will be a large enough hole for the duckling to push its self out.

Remember the yolk sac which is attached to the duckling!



When the duckling emerges it will be wet, often blood stained and very weak. They will happily stay in the hatcher or incubator for 24 hours to dry out and find out how to stand up. They need no food or water. We use wet and dry sand paper for them to rest on. This stops them sliding around on the floor.

After this period of 24 hours you then need to move them to a brooder as an incubator or hatcher is not the easiest place to feed and water them, or even clean out.

This article is not intended to go beyond this stage but needless to say you do need to plan for a brooder to house the ducklings and keep them warm. Naturally this can be bought or constructed very simply. You also need to buy food and heating.

We hope this information helps with your hatching. We know how frustrating it is to wait 30 days only to find you have no ducklings - we have been in that situation many times over the years.

Incubation is just as much an art as it is a science. There are so many variables which can lead to an unsuccessful experience.

More information can be found from the following websites and recommended books. We hope you will have a successful hatch.

Ken and Zoe



Brinsea
Incubation Specialists

Mini
ADVANCE

CE
DO NOT COVER

12V 1.5A



Humidity Pump

Websites and recommended books

Click on the links below

[Brinsea Incubation Handbook](#)

[Common Incubation Problems](#)

[Domestic Waterfowl Club](#)

[Duck Research Laboratory](#)

[The Domestic Duck – Chris and Mike Ashton](#)

[German Pekin Ducks](#)

