



From Egg to Grow Out – What We Do.....

Picking up the Eggs

Most emus lay at roughly the same time each laying day, and all but one of ours lays every three days. The male usually shows the female where he wants her to lay. When it is getting close to time for the female to lay, she becomes agitated and walks back and forth up and down the fence line. The length of her walk becomes shorter and she will sit down and hop back up. Finally, she arches her back and the egg will go shooting out and bounce off the fence, tree, bush or whatever. Aside from rocks, it is amazing what that egg can hit and not break! When she has laid the egg, the male will inspect it, peck it and then pick up some grass, straw or even dirt and deposit it on top of the egg. In the wild he will store eggs (batching) until ready to start incubating. By removing the eggs, we insure he continues to breed the female so she will continue to produce fertile eggs.



After the first egg of the season has been laid, unless it is laid under the shelter, we put a toy football in the pen where we want the bird to lay. Yes, this actually works.

Ok, we did have one hen attack the football, tear it up and toss it out of the pen; but she started laying in that spot immediately. We figure she heard the Vols lost that last game.....

After picking up the egg we take it to the incubator room to be weighted and logged in. We wait until at least the next day to incubate. Unless the egg is very dirty, we do nothing more than wipe it off before putting it in the incubator. We put a piece of masking tape on the egg, write the egg number and date of incubation, expected date of hatch on the tape. We do “batch” the eggs, meaning that we save eggs until we have at least 12 to put in at a time. We do not try to hatch abnormal eggs.

Abnormal Emu Eggs

Occasionally an abnormal egg will pop up (or out). An occasional abnormal egg is not something to worry about, especially in first year layers, but if the problem persists, there is probably a nutrition problem. For more information on this, we recommend Marie Minnaar's The Emu Farmer's Handbook, Vol. I & II.

Below are some examples of abnormal eggs.



The turquoise egg shown here did not get the final dark layer of color when it was laid.



This "Volcano Egg" got extra layers of white color.



Shown here are two emu eggs, one is normal, the other is a double yolk egg. Double yolk eggs can hatch twins, but they can also have great difficulty in hatching. Most double yolked eggs are laid by

first year layers whose hormone levels have not stabilized.



On the other end of the spectrum is the very tiny egg. Shown here next to a normal sized egg, the tiny egg may be fertile, but the chick would be extremely small.

Abnormal eggs do not hatch well, if they are fertile. For that reason we blow them out and sell them to egg artists or egg collectors who are looking for something a bit unusual.

Note: rotten eggs are usually infected at the time they are laid. The warm egg lands in a mud puddle and the bacteria gets sucked in through the pores. If this is the case, no amount of disinfecting will help. For this reason it is wise to have proper drainage in the field and provide plenty of nesting material.

Note: Many ranches disinfect the eggs prior to incubation through the use of ultra-violet lights, an antiseptic dip or misting, etc.

Batching Eggs

We batch our eggs until we have at least 10 to 12. Our reason for this is

- that we only keep 10 chicks together at a time until they are 2 months old.
- Studies show that chicks in a clutch stimulate each other to hatch, eat, drink and exercise.
- It is more energy efficient to wait and batch a clutch of eggs than to start up the incubator for one or two eggs.

One thing to keep in mind when incubating, whether you batch or not, is that a cold egg should not be put into a warm incubator. Leave the egg in the room overnight to let it reach room temperature before incubating.

Incubation

I am often asked by new farmers why their eggs didn't hatch. If the problem is not sterile eggs, it has to be the way the eggs are handled and/or incubated. The most important things in incubation are temperature, humidity, air flow and egg turning.

Most new farmers get the temperature and humidity right for their area of the country. It's usually a matter of following the incubator manufacturer's instructions. However, there are two other things that are equally important.

Air flow: As the eggs develop the embryos grow and use oxygen. Levels of carbon dioxide can easily build up if there is insufficient air flow. This is problem in the smaller cabinet type incubators. Know your incubator, talk to people who use the same type you use, talk to the manufacturer. The larger commercial style incubators usually have this problem addressed.

Turning: Many people start their incubation operation with a cabinet style incubator that rocks the eggs back and forth. They incorrectly think that this is all that is required to hatch a healthy chick. Wrong. The eggs need to be hand turned at least 3 times per day. When turning the eggs by hand the egg must not be rotated in just one direction every time, but back and forth. If you do not rotate the egg back and forth the embryo will stick to the shell membranes or the yolk sac will stick to the bottom of the egg, either way, you have chicks dead in the shell. We use a large incubator with rollers that turn the egg back and forth hourly.

Check the eggs daily for odor and temperature. When the eggs are within a week of hatching, I start tapping. You use a metal rod for this and tap the egg. If there is a tinny sound, you have a dead egg. To double check, take the egg out. A fertile egg will remain hot, a dead one will cool quickly.

Eggs should hatch between 50 to 54 days, depending on the temperature. Higher temperatures produce chicks quicker, but if the temperature gets too high, you have other problems.

We keep our incubator room at 68F, and incubate at 97.5F, with 30 % humidity. We keep the hatcher at 97F.

Hatching Chicks

When the chick has broken through to the air sac (sounded), the egg will sound hollow when tapped and the chick will cheep (I whistle to mine). Compare the sound with that of a clean blown egg (one hole in one end).

The chick will have 72 hours worth of air, but once the chick has entered the air sac they usually hatch within 24 hours. When the chick makes a hole in the outer shell, it is called pipping. You can offer encouragement by tapping on the egg and talking to it. If the chick is mal-positioned it may need help to get out – however, these chicks usually do not flourish and die before 3 months. Keep an accurate hatch log and indicate if you have assisted the hatch in order to make comparisons to any chick mortalities.

We move the egg to a hatcher when the chick has sounded the shell. We use old terry cloth towels that have been cut into the right size for the hatcher boxes to keep the chick from slipping. We also tape the legs for the first couple of days to be sure the legs don't become splayed.

Since we sell both straight run chicks and sexed and tagged chicks, some of these may be sexed after hatching.

How Do We Tell Them Apart?...

Sexing A Chick

When chicks are just hatched, they may be vent sexed. It is advisable to do this immediately as there will be manure later. You must be very gentle doing this so you don't hurt them. Wearing rubber gloves, turn the chick upside down and very gently part the feathers on either side of the vent. You will have to apply a little pressure to one side in order to get the sexual organs to 'pop out'. If the chick is male, the penis will show as a little white stem. A female will have a clitoris. If the sexual organs are not defined, the bird will be an 'it'.

Another way to tell the sex is to look at the chick's head. This is not as invasive as vent sexing and frankly, I have found it to be just as accurate. The feather pattern on the back of the head will, in the case of the males, be shaped like a bulls-eye. The picture above shows the back of the head on a 3 day old male emu chick.



The female will have a defined pattern of lines, but no bulls eye. Sometimes it is difficult to tell whether or not a pattern is a bulls eye because the circles will not be 'complete' - we recommend vent sexing if there is any question.

If the feathers are salt and pepper with no pattern, it will be an 'it' and will not breed. These are rare in farms with good breeding programs but should be should be culled for processing.

Note: There are three subspecies of emu being bred in the US today. In at least one of these subspecies, the markings are on the front of the head rather than the back.

Straight Run Chicks have not been vent sexed.

When the chicks turn brown and lose their stripes it is impossible to sex them. The reproductive organs do not develop further until their reach their first breeding season and at this point the male and female organs look very similar.



As adults, emu cannot be told apart visually. You must either manually sex them or wait until breeding season to observe their actions or listen to them. The voice change begins at between 10

to 14 months of age. At this time both sexes will be making a grunting sound. Not long after that, the female goes through a physical change the male does not, her throat sac begins to develop. By the time she is sexually mature, she will have 'found her voice' and will be making a 'booming' sound, rather like a bass drum. A visiting nurse told me once that it sounded like a heart beat.

Males make a grunting noise, like pigs. They will whistle to chicks.

Chicks whistle up until 10 to 14 months.

Brooder

When the feathers are dry, we move the chick to the brood box. The box has a heat lamp and heating pad at one end to keep the chick warm. It is able to move about and stay comfortable. Keep the belly warm! The chick will live on it's yolk sac so it does not need food or water for the first 3 or 4 days. This is important – if it does not use the yolk sac, it will get sick and die

It must be taught to drink and eat (the father does this in the wild). After the first chick learns to eat and drink, it will teach the others. The chicks will instinctively peck at bright colors. You can put marbles in the water to attract their attention. If they have not taken a sip after 5 days, I dip their beaks in the water and lift their heads back so it will run down their throats. That usually gets them going. Eating is not too far behind.

Chick Runs

The chick is moved to a chick run and the tape is removed at 4 days old. It stays in this run until it is 2 to 3 months old. During the day, if the weather is not too cold or windy, we open the outside doors and let the chicks roam the outside runs. The inside run is covered with straw which is changed as necessary. (The older the chicks are, the more often it becomes necessary)

It is very important that these areas are kept clean. Imagine going into a room and having your eyes sting because of the ammonia smell. Now imagine being only 2' tall in that room. Imagine the flies and other insects that will thrive in that environment.

Grow Out Pens

Our chick runs have gates at the end which lead to our grow-out pens. Birds destined for slaughter go to these pens. Those kept for breeding are tagged and put into another pen. We feed free choice until the chicks are 14 months old, then harvest them. The exception is the few birds which make it into our breeding program.

