Hatchery management guide 2020

The five main functions are related to incubation and hatching of myoth birds and chicken eggs. Five functions: temperature, humidity, ventilation, egg turning and sanitation. The main themes below are detailed in the text. Each of the five features is important and can individually cause havoc in your attempt to hatch an egg if one is not carried properly. When two or more are not controlled, it can be a disaster. Keep in mind that changing or adjusting one of these features can affect other functions and lead to their need to be adjusted as well. Changes to a single function should therefore be made gradually, and all functions should be closely monitored for adjustment. HATCHING TEMPERATURE Most large commercial incubators and incubators operate on 99oF. On the other hand, most small incubators and incubators, like those commonly used by game bird manufacturers, operate at 100oF. Temperature is the easiest hatching function to regulate, provided that you have a good set of controls to work with and provided that you regularly check the heating mechanism. Without good, sensitive, easy to regulate and reliable temperature control, you can have low hatches, low quality chickens, and sometimes you can lose the entire hatch. If your incubators and hatches are large enough to justify this, you should set a temperature-sensitive alarm to warn you of the potential danger to developing embryos. Temperature alarms are usually constructed from two temperature sensors. One is set to activate the alarm if the temperature drops below 97 or 98oF. Another sensor is set to activate the alarm if the temperature rises above 102oF. This is a simple explanation of temperature alarms and how it is installed, but even in this case, it is not all that difficult to establish. If the machine is not in your home but nearby, you can run a small wire (such as a wire speaker) from the machines to the alarm system in your home, so you can control the machine at night as well. Инкубационые периоды - Инкубационо-эксплуатационые характеристики (таблица 1) Пункт Куриные Турция Утка Утиная утка Гусь Гвинея Peafowl Inc Период (дни) 21 28 28 35-37 28-34 28 28-30 Температура (oF, сухая лампочка) 100 99 100 99 100 99 Влажность (oF, мокрая лампочка) 85-87 84-86 85-86 85-86 86-88 85-87 84-86 Нет яйцо поворота после 18-го дня 25-го день 25-й день 31-й день 25-й день 25-й день 25-й день Открыть Vents Дополнительные 1/4 10-й день 14-й день 12-й день 15-й день 1-й день 14-й день 14-й день Открытые Венты (при необходимости) 18-й день 25-й день 25-й день 30-й день 25-й день 24-й день 25-й день - Для принудительного воздуха инкубаторов. Add 2-3oF. To temperature when using an air incubator. Incubation Periods - Incubation And Exploitation Characteristics (Table 2) Pheasant Bobuyte Quail Coturnix Quail Chukar Partridge Grouse Pigeon Inc Period (days) 23-28 23-24 17 23-24 25 17 Temperature (oF, dry lamp) (days) (days) 100 100 100 100 100 Humidity (oF, Wet Light bulb) 86-88 84-87 85-86 81-83 83-87 85-87 No Egg Turning After 21 day 20th day 15th day 20th day 22nd day 1 5th Day Open Vents Extra 1/4 12th Day 12th Day 8th Day 12th Day 12th Day 8th Day 8th Day Open Vent (if necessary) the 20th day of the 20th day of the 14th day of the 21st day of the 14th day of the 14th day - For forced air incubators. Add 2-3oF. to the recommended temperature when using an air incubator. Fluctuations in temperature over short periods of time usually do not have much effect on the hatching or quality of the chicken, because the temperature inside the egg varies more slowly than the air inside the incubator. However, a consistently low temperature will lead to a late hatch and a decrease in hatchability. The chicks can be large, soft bodily and weak. Constantly high temperature will lead to an early hatch and a decrease in hatching. The chicks can have short down (same results with low humidity) and rough navels (not necessarily infected - just abnormal closure). More chickens are developmental vices, spraddled, weak, and small. You don't want to either, but if you have to choose one or the other, remember that high temperature is more harmful than low temperature. You can incubate eggs for three or four hours at 90oF. not killing many embryos, but the temperature is 105oF. within 30 minutes will kill a lot of embryos. In general, the older the embryo during the high temperature of failure, the greater the loss of death. Incubators can easily overheat when stored where the sun can hit them, such as in a hot room in the west of the house or in a small building that is heavily heated on a hot summer day. Machines in such conditions, when installed near full power and with incorrect ventilation, almost certainly overheat. This statement does not mean that the incubator should not be installed at full capacity; on the contrary, other factors need to be considered and corrected before you can take full advantage of the incubator's capabilities. HUMIDITY IN INCUBATOR AND HATCHER Most people think that wet reading lamps in an incubator or incubator percentage of relative humidity. This is not true, of course. The percentage of relative humidity is determined by both a dry lamp and a wet lamp. For example, if the readings are a dry lamp 100oF. and a wet reading light bulb 87.3oF., relative humidity of 60 percent. Under normal conditions, the relative humidity in an incubator or incubator should always be between 57 and 60 percent. The following table gives a percentage of relative humidity indicators for various dry and wet lamp readings. Manufacturers of incubators and incubators offer a variety of offers for dry and wet light bulbs. However, you can find by experimenting with different that the best way is to just run a dry lamp at 100oF. and a wet light bulb at 85 to 87oF. (Keep as close to 86oF. as possible.) Use these settings from day one until the hatching is complete. There will be no need to change the humidity level from 86oF. if incubation eggs were harvested and stored properly to prevent excessive moisture loss before installation, if the temperature in the machines was maintained at 100oF., if the eggs were rotated frequently, if the sanitation was good, and if your ventilation was properly adjusted during incubation and hatching. Trying to increase the reading of a wet lamp to 90 or 92oF. can reduce the hatch if the air vents in the incubators and incubator are too closed. Closing vents can increase wet lamp readings and humidity inside machines, but developing embryos suffer from poor ventilation. Old, dirty, too short, and the wrong-sized wicks on wet lamp thermometers can cause erroneous readings. It is important that the wicks are kept in the best condition. You should thoroughly clean the wicks weekly and replace them with new ones after four to eight stims. Regular change of wicks is often considered unnecessary; it may not be, but if the relatively small cost of the new wicks compared to the cost of low hatchability caused by incorrect readings of the wet lamp, the new wicks are justified every time. Lower wicks tend to give higher readings than are actually present. In other words, a damp lamp tends to act more like a dry lamp. This is because the flow of water through the wick has been slowed down. So, when trying to save 86oF. Wet light bulb reading with faulty wicks, you can actually 84oF. wet environment lamp in the car. The difference of two degrees for the entire incubation period and the period of hatch can significantly reduce hatchability. Where possible and practical, use a double set of wet and dry light bulb tools in each machine. Excessive loss of moisture from eggs during storage before installation can lead to the same symptoms that low humidity in machines produces. A sign of low humidity are sticky embryos during hatching and hatching, which leads to the fact that the embryos can not surrender to the shell and complete the act of washing out and disconnecting from the shell. Low humidity also leads to short down on chicks, malpositioned, weak, and small chicks. Low humidity contributes (but is not entirely responsible for) spraddlers, star gazers, and those that cannot stand, walk, or navigate well enough to reach food and water. If a few large, mild bodily, soft chicks are observed to make it through piping and hatching, but are dead in the tray, it is a sign of high humidity. An unpleasant odor usually accompanies this condition. The condition usually occurs only in incubators and incubators, which forced humidity systems to splash, which too much moisture in the machines. Rarely is the humidity too high in the machine, which relies on evaporation from the pans, if you use the recommended evaporative pans, if the temperature is correct, and and cars are properly ventilated with fresh air. If, limiting ventilation, humidity is too high (92o to 94oF.) in the final stages of incubation, the embryos are moist and develop until the 19th, 20th or 21st day of incubation, but die in the shell from suffocation. This choking is the result of improper ventilation, not high humidity. VENTILATION OF INCUBATORS AND HATCHERS Ventilation is important in incubators and incubators because fresh oxygen air is essential for breathing (oxygen consumption and carbon dioxide) of developing embryos from the egg to the removal of the chick from the incubator. Oxygen needs are low in the first few days compared to the last stages of development. The eggshell contains three to six thousand small holes called pores through which oxygen passes from the air into the developing embryo and through which carbon dioxide passes from the embryo to the outer air. The lungs of the embryo are not developed during early embryonic development to the point that they can accommodate breathing when breathing. Thus, breathing is provided during the first three to five days of the intelline plexus of circulation growing from the embryo. To achieve this plexus the gaseous exchange must travel through the pores of the egg and the albumen (egg white) to reach the circulation of the vitellin that lies on the surface of the egg yolk. After the 4th or 5th day of development, another structure called allantois grows from the embryo, extends through the album, and positions itself directly under the eggshell. Allantois becomes the main respiratory organ of the developing embryo and remains such until just before the pipping begins. The transfer of respiratory function from asantua to the lungs begins three to four days before the pipelines. The transfer is gradual and is completed by the time the chicken ends up piping the eggshells. The important thing to remember about embryonic breathing is that ventilation is important throughout the incubation process, especially towards the end, because the embryos are larger and inspired at a much higher rate than at the beginning. So how do you have to install shock absorbers (air input and outlet controllers) in your incubator? Since there are so many different models and models, it would be too difficult to try to recommend the procedure for each one. Instead, here are some general guidelines for proper ventilation: air exhausted from an incubator or incubator should be ventilated (duct) on the outside of the building. This is especially true if the incubator is located in a closed building or a small room. This ventilation system, if properly installed, provides an additional guarantee that fresh air is available for developing embryos. Almost all large commercial poultry incubators are created with type of ventilation system. Little Little incubators are generally not designed to easily install ventilation channels and are therefore rarely used. Instead, you can find four

or five incubators working in room 10'x12', air exhaust, spill into the room, and the entrance of the air pulled out of the same room. Sometimes all windows and doors will be closed to, as the owner says, help hold the heat and humidity in the incubator. Limiting the ventilation of the room can help with controlling temperature and humidity, but ventilation suffers. In this case, the incubators can circulate only stale, banished air back through the machine that the embryos reuse for breathing. Recycling stale exhaust through incubators can be reduced by placing an incubator in a large room with multiple holes, or in a small room with a number of large holes (windows or doors). The best way is to either air the exhaust used outside and provide enough holes for fresh air to enter the room, or provide plenty of holes for fresh air to enter and stale exhaust air to easily avoid. The greatest amount of air is needed by the end of the incubation period because the embryos are larger and respiring more. In large commercial incubators, shock absorbers are always on the move, slowly opening or closing if they do not reach the point of complete openness or closure. The temperature inside the incubator regulates the opening and closing movement. If the thermostat is set at 100oF., the shock absorbers begin to open when the temperature is above 100oF., and begin to close when the temperature is below 100oF. (The shock absorbers are installed so that they never completely close.) With this control method, shock absorbers usually remain near a closed position during the winter months when cold air is being delivered to an incubator. Conversely, in late spring, summer and early autumn months, warm air reception usually causes shock absorbers to stay about halfway through to full opening. The same pattern fluctuates from day to day in spring cool nights and hot days. During the early embryonic development of the embryo, the embryo is sucked out less heat, and therefore shock absorbers tend to close more than with embryos in the latter stages of development. A brief explanation for manually installing a damper in one stage of incubators is this: Provide more ventilation as the embryos grow larger and as the external temperature increases. Provide roughly the same total consumption and exhaust holes (some incubators have one entrance and two or more exhaust holes). Pay as much attention to proper ventilation as you do for temperature, humidity, etc. indoor incubator-type, so that machines can take fresh clean air. If several egg settings are made in the incubator, the embryos are in different stages environmental changes have the greatest impact on the need to change the damper. If the air intake is quite cool, the shock absorber holes should not be installed more than half closed if the machine is almost full of eggs. How can you tell if the ventilation is bad? The first thing noticed might be a bad hatch. Lack of proper ventilation can contribute to low hatchability if, after studying numerous dead embryos in the shell, the following conditions are observed: most embryos reach the 19th or 20th day of incubation. They're not dehydrated. They are not illegal. Non-absorbical egg yolks appear to be disease free. A wet reading light bulb usually ran closer to 90oF. not 86oF. The heating element is rarely activated in the latter stages of incubation. The shock absorbers are not as open as expected. EGG TURNING Birds, including chickens and quail, turn their eggs during incubation of the nest. Nature provides nesting birds with instinct, and we know a twist is needed in incubation machines to achieve the full incubation potential of eggs. Do you know why egg-turning is necessary for good hatching? Albumen (white) eggs contain virtually no fat particles and has a certain gravity near the water. However, the yolk has a relatively high fat content. fats and oils have specific gravity lower than water and float on water. Egg yolk tries to do the same - swim on the album. If the egg stays in the same position, the yolk tends to float up through the albumen to the shell. The developing embryo always lies on top of the yolk. When the egg turns, the yolk turns into an albamen, so that the embryo is again positioned on top of the yolk. Nature probably does this, so the embryo is always in a better position to get body heat from the mother's chicken sitting on the eggs. If the egg is not turned, the yolk tends to float up to the shell and pushes the embryo closer to the shell. If the yolk travels rises enough, the developing embryo is squeezed between the yolk and the shell. The embryo may be damaged or killed. The egg's transformation causes the yolk to move out of the shell, making it safe for the developing embryo until the egg turns back into an egg. The strands of twisted albumen extend from the yolk to the album to the small and large ends of the egg. These threads are called chalaza. They help keep the yolk away from the shell. Chalazae keep the yolk firmly in the center of the egg until the quality of the egg begins to deteriorate, as when the egg is placed in 100oF. temperature incubator. As the albumen is more watery, the chalazae lose their ability to hold the yolk in place, making it more important to turn the egg often after the incubation begins. In general, the need for a turn begins when the eggs and stays up to two or three days before the eggs start pipping. In large commercial egg incubators eggs automatically every hour, 24 hours a day. Eggs in small incubators at home are sometimes washed only twice a day, once in the morning and again in the evening. When turning it hand-rotate, it is best to rotate the eggs an odd number of times a day (i.e. 3, 5 or 7 times). The longest period of that egg is left in one position at night. Turning the odd number of times will alternate overnight, that the same side of the egg is top. Some manufacturers open the incubator, pull out a flat tray and control their hands over the eggs. This, in their opinion, turns eggs. In fact it's just stirring eggs because there's no definite way to tell if the eggs are just rolled around, or if they actually end up in a different position. Many of the eggs couldn't get turned around - just rolled around. Turning eggs in this way can also crack the eggshell. Many chicks develop in eggs with cracked shells (only shells, not membranes), but not many will pip and completely hatch because dehydration occurs and makes the environment sticky. The chicken does not have enough strength to peep and free itself from this sticky environment. When using a relatively small incubator, you work away from home, and can turn eggs only a few times a day, sign X on the top side of each egg with a pencil or felt tip of the pen. Every time you turn the eggs, visually check if each egg is actually turned, making sure that the X ends on the opposite side of where it was before the turn. When using a machine that turns the eggs automatically, the eggs should be rotated at least once every two hours. If the turn system is manual, rotate as often as it is practical. Try to equal time on each side. Eggs should not be washed for three to four days after hatching. Chicks need to position themselves for pipping and do it better if allowed to stay put while the process takes place. The embryo is large enough by this time that it has used most of the yolk for food production and is no longer in danger of being compressed between the yolk and the shell. HATCHERY SANITATION All incubation factors, such as temperature and humidity, may work in the right direction, but poor hatchability can result due to poor sanitation. Poor sanitation leads not only to a bad hatch, but also to early loss of life during reverie. It can also cause a persistent disease problem that sometimes affects birds during growing season. Losses during the period of reverie and growth caused by poor sanitation of incubators can lead to greater monetary losses than losses from poor hatching. Let's say you set clean, well cared for eggs. The most important tools For use in cleaning and disinfecting the incubator and incubator, are water, detergent and elbow grease. Some people mistakenly think disinfectants are the answer to their problems. They think disinfectants can replace the poor poor but it's just not. Remember: it is almost impossible to sanitize a dirty environment. Why is this statement true? Because all disinfectants lose most of their effectiveness as soon as they come into contact with organic matter; the dirtier the disinfected surface, the less effective the disinfectant is. Some disinfectants are more effective in the presence of organic matter than others. Cresol, cresic acid and coal resin disinfectants are the most effective disinfectants in the presence of organic matter. Because they are corrosive and emit harmful and toxic gases, they are usually used not in incubators, but in cleaning and disinfecting bird houses and pens. The most commonly used disinfectants in the incubator are quactic ammonia compounds (kvats), several phenolics and iodine compounds (iodine compounds). Quacral ammonia may be the most commonly used disinfectant for equipment such as incubators and incubation trays, as quats are relatively non-irritating, non-corrosive, low toxic and effective enough in the presence of organic matter. Since the incubator and its components must be cleaned of organic matter before disinfectant is applied, quats are a good choice. Many incubators use several phenols. They have a wide germ range, low toxicity and corrosion, good enough efficiency in the presence of organic matter, and a good residual effect. The downside is that several phenolics can cause a searing effect on the skin of any treatment of them in a strong solution or for a relatively long period of time. When using several phenols in concentrations larger than the strength of the solution offered on the label, wear rubber gloves for protection. Iodophores have a wide bactericide activity, good efficacy in the presence of organic matter, and cost less than quats or a few phenols. The downside is that it stains, is corrosive when in an acidic solution, and has only a small residual activity. Careful cleaning work using large amounts of elbow fat results in 95 to 99 percent microbial removal. In this case, and when done often enough, little or no disinfectant is required (assuming that you set clean eggs). If, on the other hand, you use a fast hit or miss system and a long time passes between thorough cleaning jobs, you are most likely missing out on disinfecting your machines. It is best to use a disinfectant after cleaning and possibly between cleaning jobs. Fumigation is another disinfected and useful when cleaning the poor, the eggs are dirty, or the machines are filled with eggs, making it difficult to empty and clean properly. With clean eggs, machines, equipment and air, fumigation is not required. Need. Need.