

Deciding the Best Way to Move Your Inventory

There are many ways to transport eggs from the breeder farms to the hatchery. Defining your collection process and transport needs is the first step in the process. Chick Master offers many different setter trays designed for today's breeder eggs, but each has its own special application. Our new 82-egg tray is designed for automatic egg collection and hatchery automation. The 165-egg tray is a single tray that reduces the total number of trays per trolley.

The 126-egg tray is a perfect upgrade for users of the 132-egg tray because it accommodates the larger eggs of today's breeders.



Our new 82-egg tray is designed for automatic egg collection and hatchery automation.

The transport of the trays can be done in a variety of Chick Master trolleys for our single and multi stage roll-in setters. Trolley sizes are usually limited in dimension due to restrictions at the farm or in the transport vehicle. We have several options that will accommodate most facilities depending on the distance and method of transportation.

We offer rugged transport trolleys that can use a push-thru system to transfer egg trays from the farm trolley to the setter trolley. In most cases, bio-security demands that the

trolley that comes from the farm does not enter the setter. The push thru system allows for either manual or automated transfer that reduces labor and egg damage in the process. The setter trolley is then used only in the hatchery.

When a proper disinfection program is implemented, farm to setter trolleys offer a great advantage. Chick Master has a farm to setter trolley made from rugged steel construction. Using these trolleys reduces the handling of the eggs, reduces the number of trolley types in the hatchery to one, and will result in lower egg breakage.

Chick Master continues to look into new transport systems to improve the efficiency of egg movement for both short and long distances. The rising cost of energy puts demands on hatcheries to maximize transportation space to continually reduce the cost per egg of transportation. The tray design is central to improving the process. As hatcheries get larger, the travel distances from the farms to the hatchery get longer and more costly. The needs for improved egg transport systems are changing, and Chick Master will lead the way in new transportation systems to lower the cost of moving eggs from breeder to baby chick 🐣

To Our Hatchery Friends:

Chick Master UK Open House



Seventy guests from Europe, Asia and Africa attended our 3rd Open House held at our facility in Bridgwater UK in June. This year's event was held over two days with major presentations on Energy Management, Single Stage setter and Hatcher Stage Programs, Egg Transportation and Incubator Maintenance. Andrew Gibson, PD Hook's Operations Manager (Northern) recounted how they quickly rebuilt with Chick Master Avida incubators and Energy Management systems after a recent fire at one of their facilities. Luc Ledoux from CID Lines also gave an excellent presentation on hatchery bio-security.

Our US Regional Seminars continue to attract a great deal of interest. Two more have been organized in the coming months in Raleigh, North Carolina on August 27 and in the Fayetteville, Arkansas, area on September 10. Don't forget to check www.chickmaster.com for one in your area.

International Seminars have also been held recently in Israel, South Africa, Australia, New Zealand and Buenos Aires, Argentina (see pictures below).



Over 100 guests attended our seminar in Buenos Aires in July.

Announcing our OPEN HOUSE 2008

October 21 - 23, 2008 - Medina, Ohio

Spanish, October 21-22 (reception on 20th), English, October 22-23 (reception on 21st).

Please reserve the date

Chick Master is pleased to announce our 2008 Open House at our facility in Medina, Ohio. We have organized power-packed two day programs in English and Spanish. Presentations will include the importance of good ventilation, and the latest technology and developments in energy management and environmental control. The latest equipment innovations will be on display and open for discussion.

Want to learn how you can substantially reduce your utility bills as well as your carbon footprint? Reserve the date NOW for this year's Open House.

HATCHER MANAGEMENT

Hatcher management tends to be taken for granted and neglected by some hatchery managers. This is in part due to the shorter amount of time chicks spend inside the hatcher in the normal day to day hatchery operations and in part due to the inability to make adjustments with control systems that offer no adjustment possibility.

Here are a few thoughts on proper temperature and humidity management for successful hatcher operation of a commercial broiler hatchery:

A) The hatcher room should always be considered as the incubator for your hatcher units.

B) Ideal hatcher room conditions should be set for a temperature of 25.5 to 26.5°C (78°F to 80°F) with a relative humidity from 60 to 65%.

C) Percent RH conditions in the hatcher cabinet should be kept in a range of 58 to 62%. In other words, dry and wet bulb temperature combinations along a relative humidity curve on a psychometric chart should always fall in a range of 58 to 62% relative humidity. Refer to table-A.

D) Any time one allows hatching chicks to be exposed to long periods of high percent relative humidity conditions (e.g., any dry and wet bulb temperature combination exceeding 65% relative humidity in the hatcher cabinet) one is asking for trouble and risking chick dehydration. Remember, high humidity conditions in the hatcher cabinet DO NOT prevent chick dehydration. Instead, those conditions cause chick dehydration. Refer to table-A (below) to see what I mean.

TABLE A - (Basic Hatcher Profile)							
18.5 Day Transfer — After 444 Hours of Incubation							
Step No.	1	2	3	4	5	6	7
Dry-Bulb Temp (°C)	36.9	36.8	36.7	36.6	36.4	36.3	36.1
Dry-Bulb Temp (°F)	98.5	98.3	98.1	97.8	97.5	97.3	97.0
Wet-Bulb Temp (°C)	30.0	29.7	29.7	29.4	29.2	28.9	28.6
Wet-Bulb Temp (°F)	86.0	85.5	85.5	85.0	84.5	84.0	83.5
% Relative Humidity	61.5	60.7	60.9	60.5	59.7	59.0	58.4
Hours	6.0	8.0	12.0	10.0	10.0	10.0	8.0
Cumulative	6.0	14.0	26.0	36.0	46.0	56.0	74.0

E) The large amount of humidity generated by hatching chicks inside the hatcher cabinet is more than enough to allow successful hatching. Even if one was to turn the humidity spray completely off from the end of transfer until harvesting the chicks, the wet-bulb temperature in the typical hatcher will rise above 32.2°C (90°F). One must also remember that a considerable amount of moisture condensation will occur in hatcher units that have the ability to cool by chilled water inside cooling coils.

F) As a starting point, we recommend using 36.6°C (98°F) for the dry-bulb cooling set-point and 36.4°C (97.5°F) for the dry-bulb heating set-point. This would be 5/10 of a °F below the traditional, default set-points for most hatchers as they shipped.

G) We also recommend using the low humidity set-point of 29.4°C (85°F) (wet bulb) for the hatcher throughout the hatching

process. That setting should be from the end of transfer until the chicks are pulled from the hatchers. This presumes that the chicks are pulled in a timely fashion, i.e. after some 502 to 506 hours of total incubation time from set through pull. The trained eye of an experienced hatcher room supervisor is the best tool to accurately determine timely harvesting of chicks.

H) If you are reluctant to do away with the high humidity set-point treatment of 32.2°C (90°F) (wet bulb) for several hours, then consider using an 30.5°C (87°F) thermometer for the high humidity set-point instead of the traditional 32.2°C (90°F) thermometer.

I) Pressurized hatcher plenums or dust corridors should be considered as a necessity—not an option—with today's large capacity hatcher units and widespread usage of high yielding broiler breeds in our industry. Hatcher plenum pressures are usually in the range of -0.02 to -0.03 in relation to the hatcher room pressure. Minimum operational set-points for the variable speed exhaust fans in the plenum are usually 16, 20 or 24% of maximum RPMs. However, everyone's hatchers are a little different. Make sure you verify exactly what the recommended pressures are before setting your plenums.

J) You must be able to circulate large volumes of moist, warm air inside the hatcher for proper oxygenation and maximum physical comfort of all the chicks in the hatcher trays. The close proximity and high density conditions the chicks are exposed to inside the hatcher cabinet should always be kept in mind.

K) Gradual lowering of both the dry and wet bulb set points as the hatch progresses will aid the chick's physical comfort at all times. Anytime chicks are panting they are being heat stressed, energy is being wasted and the chicks are losing their ability to perform at optimal levels in the broiler house. If you have controls that allow you to use stage programs in the hatchers, full advantage must be taken of this management tool to assure optimal ambient conditions for the hatching chicks at all times.

L) Chick behavior at harvest time should be that of calm, quiet and relaxed birds just waiting to be pulled from the hatchers.

Continued on page 3 column 1



C192 Chick Master Hatcher with stainless steel internal walls and ceiling



Chip Campbell



Angel Salazar

Ask the Eggsperts

Your chance to ask our hatchery and embryology experts the questions.

Q

Can chicks be sexed at day old?

Mr. J. Cheeseman - Canada

A


There are several methods of sexing day old chicks, depending on the level of production. Usually at Pure line level, and all the way down to parent stock, the method is by vent sexing using a technique perfected in Japan. The male vent characteristics are different to that of the female and it takes a lot of skill and training to be able to do this to the desired accuracy. The other methods at the commercial chick level involve feather sexing, where the PS males will possess the fast feathering gene and the PS females the slow feathering gene. The slow feathering gene is sex-linked and the PS female passes it to her sons only. The other method is color sexing where the PS male will carry the gold gene and the PS female the silver gene which is also sexed linked passing it to her sons only. Fast feathering chicks have different wing feather patterns, compared to slow feathering chicks wing feather pattern. A day old silver chick will appear white, compared to a day gold chicks which will appear red making it an easy and quick process to sex chicks at day old.



Hatcher Management continued from page 2

Chicks should not be noisy and/or panting. Knocking the sides of plastic hatcher trays should cause chicks to come alive and become excited very quickly. Rectal chick temperature should be in a range of 38.8°C to 40°C (102°F to 104°F) at all times.

M) The necessity for milking the hatch has happened to just about all of us. The need to reload some hatcher units with unhatched eggs to maximize numbers is a clear indicator of non-uniform ambient conditions at several points during the process (one common cause for long-lasting hatch windows is water pools on hatcher floors from excessive use of the humidity spray and/or excessive moisture condensation on the surface of cooling coils). However, chicks that do manage to hatch during a second harvest are always of poor quality and will perform poorly at the broiler farm. This is in no one's best interest.

Proper management of hatcher conditions cannot be stressed enough or over emphasized. It plays a crucial role in assuring hatched chicks will be of a uniform high quality level and top performers at the grow-out operation. If you have any questions about this article or would like to share some thoughts of your own, please email the author at salazar_angelivan@yahoo.com 

Eggs produce heat, right?

So why not use them to reduce your energy bill?



Another great idea from Chick Master

Chick Master has energy and money saving products for your hatchery.

Controlling Energy Costs in 2008

Or How to Survive the Hydra and Other Stories

The concept of understanding and controlling energy costs must have been the inspirational wellspring from which the famous story of Hercules and the Hydra was born.

You will probably recall the story of the nine-headed Hydra. Among its lovely attributes were a frequent desire to swallow large numbers of cattle, sheep and the occasional maiden. In addition, it had breath that would stop the proverbial clock. The bigger issue was one of the heads could not be killed and the other eight would grow back if they were harmed. Not the makings of your average household pet.

Hercules managed to dispose of the Hydra in a very ingenious fashion but I'm not going to spoil the story for you by telling you about it. You'll have to read your mythology book if you want to find out.

How does this relate to energy costs?

We all are only too-aware of the skyrocketing oil prices. The price for a barrel of oil seems to be the head of the Hydra that can't be stopped. While the price in itself might be like economic bad breath, the real problem is figuring out what the other eight heads are doing. Where will this out-of-reality price increase boil to the surface of our world?

To find out I thought a bit of research into energy costs might help. I can assure you that trying to follow the chain of energy cost from oil, nuclear, coal, hydro, solar, geothermal, wind, other combustible materials, and so on has to be comparable to anything old Herc ever did. But this I will mention electricity is considered to be a secondary energy source since it is produced by consuming one of the primary sources of energy that I just listed. While electricity exists in nature (lightning), it is not a natural source of energy but the result of conversion of a true energy source.

After a few hours of reading and cutting off Hydra heads I concluded that the best place to tackle this monster is to focus on those parts of the beast that are controllable by us. There is little any of us can do to alter the price of oil, heating fuel or gas in the short term. With due respect to those who will say that the price can be impacted by reduced demand, each of us can only play a microscopic role in that play. We can only reduce the energy we consume directly while encouraging the users of energy we consume indirectly to do the same.

If there is little we can do individually to impact the unit price of an energy source, the only logical way to reduce the cost impact to our business is to reduce the number of units of energy we use. To do that we must identify those energy consumption activities directly under our control and those which we can influence but not change unilaterally. I tend to take the simplistic approach on categorizing

items if I get a bill for it, I directly control it. If I don't get a direct bill, I only influence it.

Examples - electricity consumption, gasoline/diesel fuel usage and natural gas/LNP or fuel oil consumption are clearly under our control. Freight costs, consumption of water, sewerage charges and the using up of materials (parts, tools, etc) all lead to the use of energy that we cannot easily extract from the overall cost.

Reducing your exposure to the inevitable price increases from the secondary energy cost is almost totally dependent upon good management practices. Scheduling deliveries, planning efficient vehicle routes, using (and reusing) water wisely, recycling reusable materials all require attention to detail. However, attention to detail can only be paid once awareness of the potential savings has been made clear.

The same need for good management practice could be said about the use of controllable energy units. The poultry industry in general has been a significant and rather wasteful consumer of energy. Now the oil Hydra has come to make us pay for our past disregard of energy limits. Where will the Hydra strike?

The biggest impact will certainly come on those facilities that require energy for heat. Heat is produced by releasing the energy potential of a fuel source (wood, oil, coal, etc) to produce heat along with some nasty little byproduct like carbon dioxide. The two most practical sources of primary heat energy are oil and gas. The price of these two fuels tends to follow a similar profile, so your cost of heat is not likely to be changed much regardless of your fuel source. Looking back at the last few years we find that the average price of a barrel of oil was about \$70 for 2006 and 2007. Further back we find about \$55 in 2005, \$40 in 2004 and \$30-\$35 a barrel for many years before that. Over five years the cost of a barrel of oil roughly doubled. During that time the cost of home heating fuel to a US consumer increased about 65%. The difference in the numbers was baffling to me at first, but then I realized that average heating oil prices are generally shown for a season, not for a calendar year. The bulk of the season falls in the early months of the year and since it takes a few months for barrel prices to reach the consuming market, the average cost for a season is affected much more by the previous year's price than by the current price.

Translation: The majority of the price increase has not hit your heating bills yet. Further translation: For those of you not paying your bills with US dollars, the impact of your currency exchange rate to the dollar will provide some protection or further damage to you. Keep that in mind!

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New Additions to the Chick Master Family



Dan Page

Dan Page joins our Bridgwater, UK, team as a Systems Programmer. He will be developing programs for our Heat Recovery and ventilation systems and helping to standardize design, installation and commissioning procedures. Dan brings 13 years of experience in programming code, test procedures and development.

Chick Master is pleased to announce the addition of Robert Bowen to our North American sales team. Robert has over 20 years of hatchery experience having worked as a hatchery/breeder manager at Tyson Foods, Dexter, Missouri and most recently Koch Foods in Oxford, Alabama (formerly Tyson Foods), before his appointment in June.



Robert Bowen

FUN TIME

Give Us This Day Our Daily Chicken

A salesman from KFC walked up to the Pope and offers him a million dollars if he would change "The Lord's Prayer" from "give us this day our daily bread" to "give us this day our daily chicken." The Pope refused his offer.

Two weeks later, the man offered the pope 10 million dollars to change it from "give us this day our daily bread" to "give us this day our daily chicken" and again the Pope refused the man's generous offer.

Another week later, the man offered the Pope 20 million dollars and finally the Pope accepted. The following day, the Pope said to all his officials, "I have some good news and some bad news. The good news is, that we have just received a check for 20 million dollars. The bad news is, we lost the Wonder Bread account!"

Controlling Energy costs. Continued from page 3 column 3

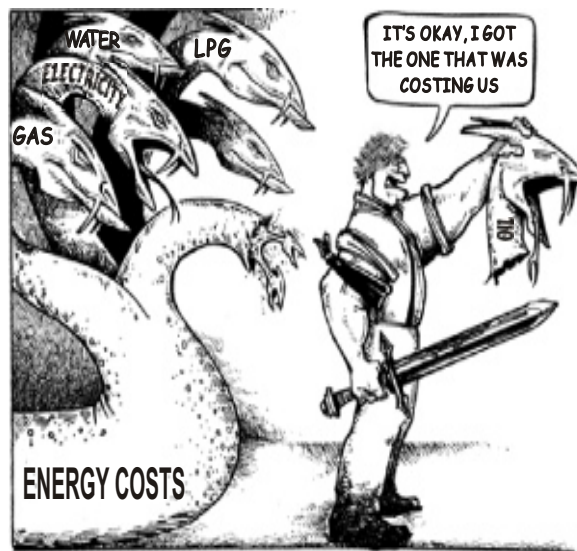
The average cost of a gallon of fuel oil rose by about 33% in the US in the 2007-2008 heating season (November-March roughly speaking). Based on present pricing levels as compared to the 2007 comparable price, it is likely that the fuel price will rise by more than 50% for the 2008-2009 season. More than 50%. See what that does to your budget.

You no doubt are wondering what that means to your electric bill. So did I. Out comes the old hammer and back at the Hydra I go. This head is a little easier to grasp.

Not all electricity cost is related to oil. I found a report from the International Energy Agency in France that breaks down the energy sources of electricity on a country-by-country (or at least region-by-region) basis around the world (<http://www.iea.org>). In Europe you find that about 10% of electricity is from hydro and about 15% is nuclear. The rest is from fossil fuels which includes coal.

North America is about 15% hydro, 15% nuclear and 70% fossil fuel. *Just as an interesting side-note, Canada alone is about 65% hydro, 10% nuclear and only 25% fossil fuel. Smell that clean air!* Obviously these regions are impacted by changing oil prices in different degrees. Also keep in mind that some of these areas are producers of coal and others are not. When coal abounds, fuel oil usage is lessened.

Writers Note: In case any of you are thinking about relocating your hatchery, Iceland is almost 100% hydro powered while Australia, Mexico and Poland are almost 100% fossil fuel powered. For those curious about nuclear power, France has the highest percentage of nuclear power and Switzerland looks to be running a glowing second.



The result of this mix of power sources simply means that electric bills will not be rising as quickly as heating bills. If you have electric heat, the rate of increase will not be as dramatic, but we are probably all aware of the relatively high cost of electric heat compared to the other energy sources so a slowing of increase on a percentage basis is probably not much consolation to folks with electric heat.

In the end the way to slay the Hydra became clearer. Information is the enemy of the energy Hydra. You must know how much

energy you are consuming and where you are consuming it in order to take corrective action. So, consider this: "The fastest rising controllable cost in your hatchery is likely to be heating costs. If you are in a climate where heat represents a meaningful portion of your operating costs, you MUST take steps as quickly as possible to reduce the consumption of energy units (regardless of

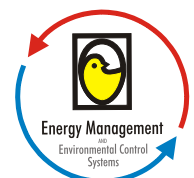
energy source) by your hatchery. With the possible exception of grain, the same is probably true of your breeder and grow-out farms. You have a source of heat energy in both places - fertile eggs and birds.

If you want to survive the attack of the Hydra, you MUST harvest this energy as soon as possible. We might be able to help you with information and products. The Oracle (no longer mythical, but a real product!) will provide you the information you need on direct energy consumption. The Heat Recovery and Energy Management systems will be active participants in the actual reduction of energy usage ☺

If you want to know more, contact your Chick Master Representative now.



Please contact us for any product or support information you may require



Chick Master: Suite 335, 25 Rockwood Place, Englewood, New Jersey 07631, USA. Tel: +1 (201) 871-8810, Fax: +1 (201) 871-8814, e-mail: sales@chickmaster.com
 Chick Master UK: Express Park, Bristol Road, Bridgwater, Somerset TA6 4RN. UK. Tel: +44 (0)1278 411000, Fax: +44 (0)1278 451213, e-mail: sales@chickmasteruk.com
 Chick Master Medina: P.O. Box 704, Medina, OH 44258, USA. Tel: +1 (330) 722-5591, Fax: +1 (330) 723-0233, e-mail: orders@chickmaster.com

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