Cobb700™

Incubation

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Incubation

The Cobb700 has gained recognition as a leader in the high yield market segment. Commercial broiler performance of this product has repeatedly shown a clear advantage in percentage breast meat yield. As with all products, close adherence to product specific management programs helps ensure the true genetic potential of the product is achieved.

The first point to stress with this product is its difference from the Cobb500. This article focuses specifically on the incubation highlights of the Cobb 700.

Based on research & field trials, it is evident that the Cobb700 has different incubation requirements to achieve optimum performance. It is essential that the developing chick embryo not be overheated at any time during the incubation and chick holding process. The Cobb700 is more prone to dehydration than the Cobb500 when overheated. Caution should also be made to ensure chicks are not chilled or cooled down during the same processes.

Keep in mind that "all hatcheries are not created equal" and a hatchery evaluation should be made prior to making any changes. This includes a complete check of incubation, holding, transport conditions and the day to day programs being used. It is extremely important that the hatchery, transport and incubation conditions are correct before making any adjustments.

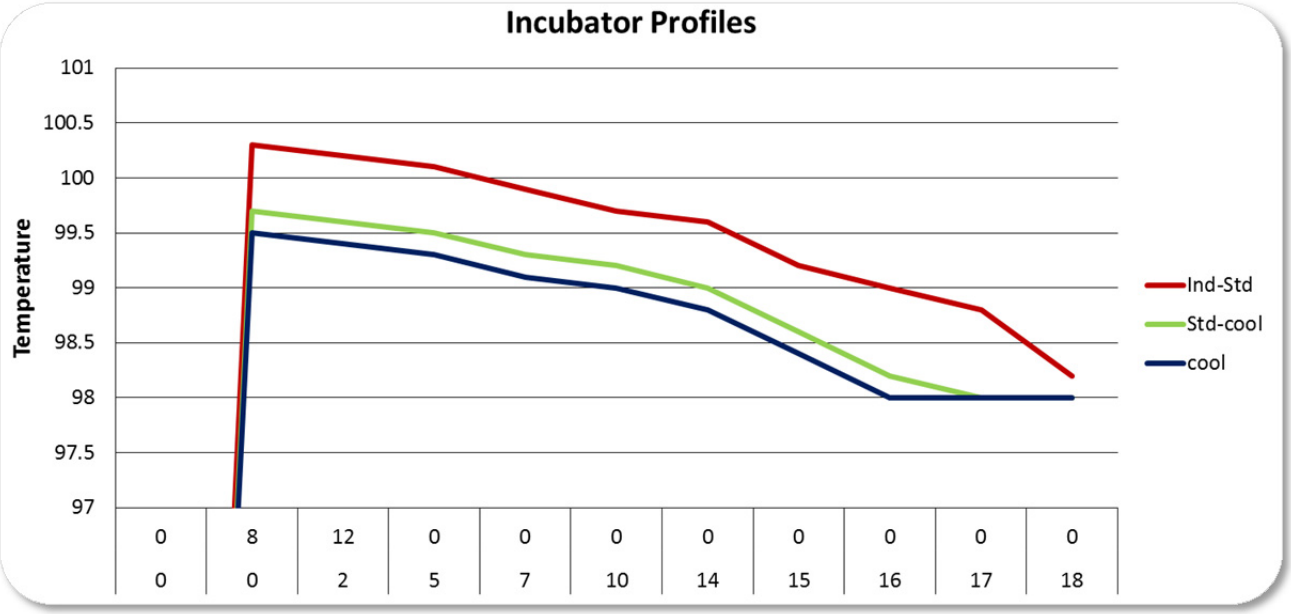
Suggestions for Maximizing Cobb700 Chick Quality:

- Avoid overheating embryos at any time during the incubation process. In most cases, embryo damage caused by overheating is irreversible. Cooling chicks down is extremely difficult and it's best to avoid overheating in the first place.

- Decrease incubator temperature 0.2°and 0.4°F (0.11° and .22°C). This will extend incubation time on the Cobb 700 to between 509-511 hours. Embryonic temperature can be used as a guide to determine if you are on track.

Rule of thumb:

The EST (Embryo Shell Temperature) should be between 99.8 to 100.7°F @ 18 days (37.7 to 38.2°C). This EST should be recorded at different locations depending upon the incubation equipment.





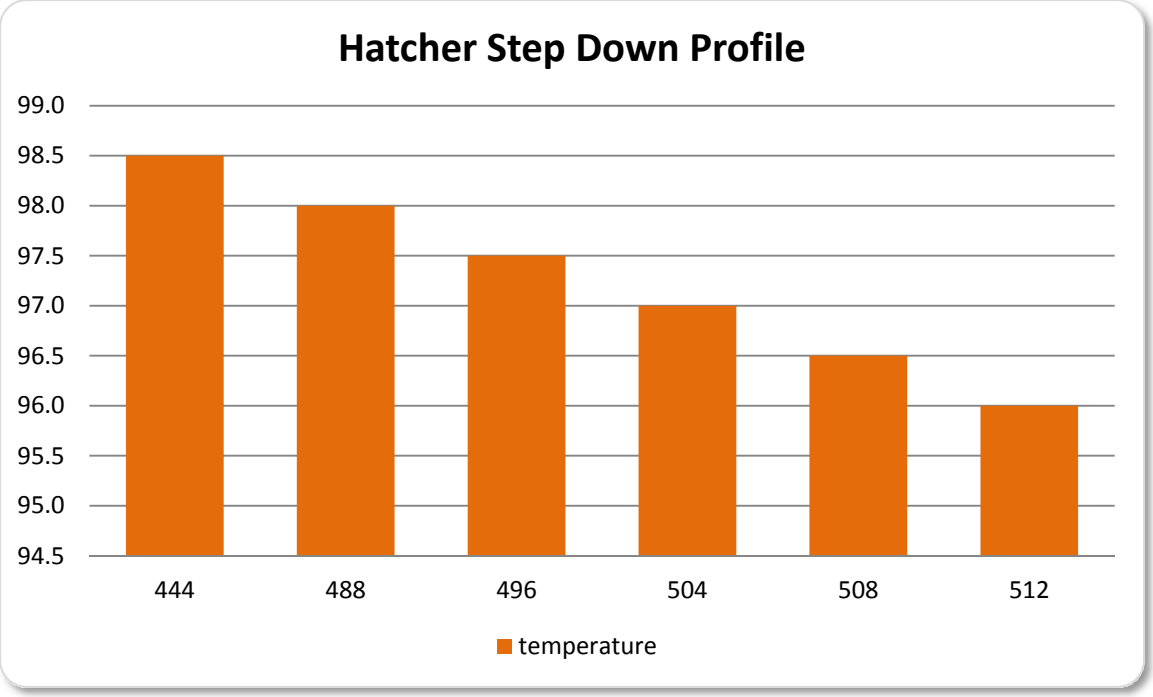
- Monitor the set to pull program to assure the incubation profiles being used are correct. When changing incubator temperatures, set times will need to change as well. Always pull chicks when they are ready to be pulled or, if the hatchers have the capability, turn them into "chick holding rooms" by lowering temperature by 1.5-2.5°F (0.84-1.39°C) between 20- 20½ days. The hatcher room will need to hold proper temperature and humidity during this process. Again, do not pull green chicks. If you err one way, make sure to err on the side of all chicks being dried and ready to pull. The window between green chicks and dehydration is narrow – this cannot be emphasized enough.

- The ideal chick body temperature should be between 103.5-104.5°F (39.5-40.5°C). Overheated chicks (i.e., body temperature above the ideal or approaching as high as 106-107°F / 41-42°C) will feel chilled once their body temperature returns to the normal range in the hatcher or holding room. One factor to consider is that most chick temperatures are taken only at pull time. While this temperature may appear to be normal, possible overheating may have already occurred. For this reason, chick temperatures should also be taken the day prior to pull, during the pre-pull assessment.

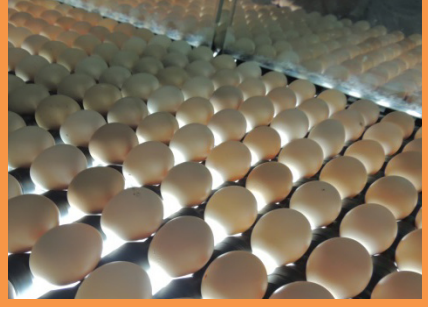
- Use a pre-pull assessment the day prior to pull. Goal: 12 hours before pull, 70-75% out. Take rectal temperatures at this time and at the time of pull. The temperature target should be between 103.5- 104.5°F (39.5-40.5°C) at both times.

Keep in mind:

The purpose of a hatcher step down program is to allow the hatcher to "hold chicks".

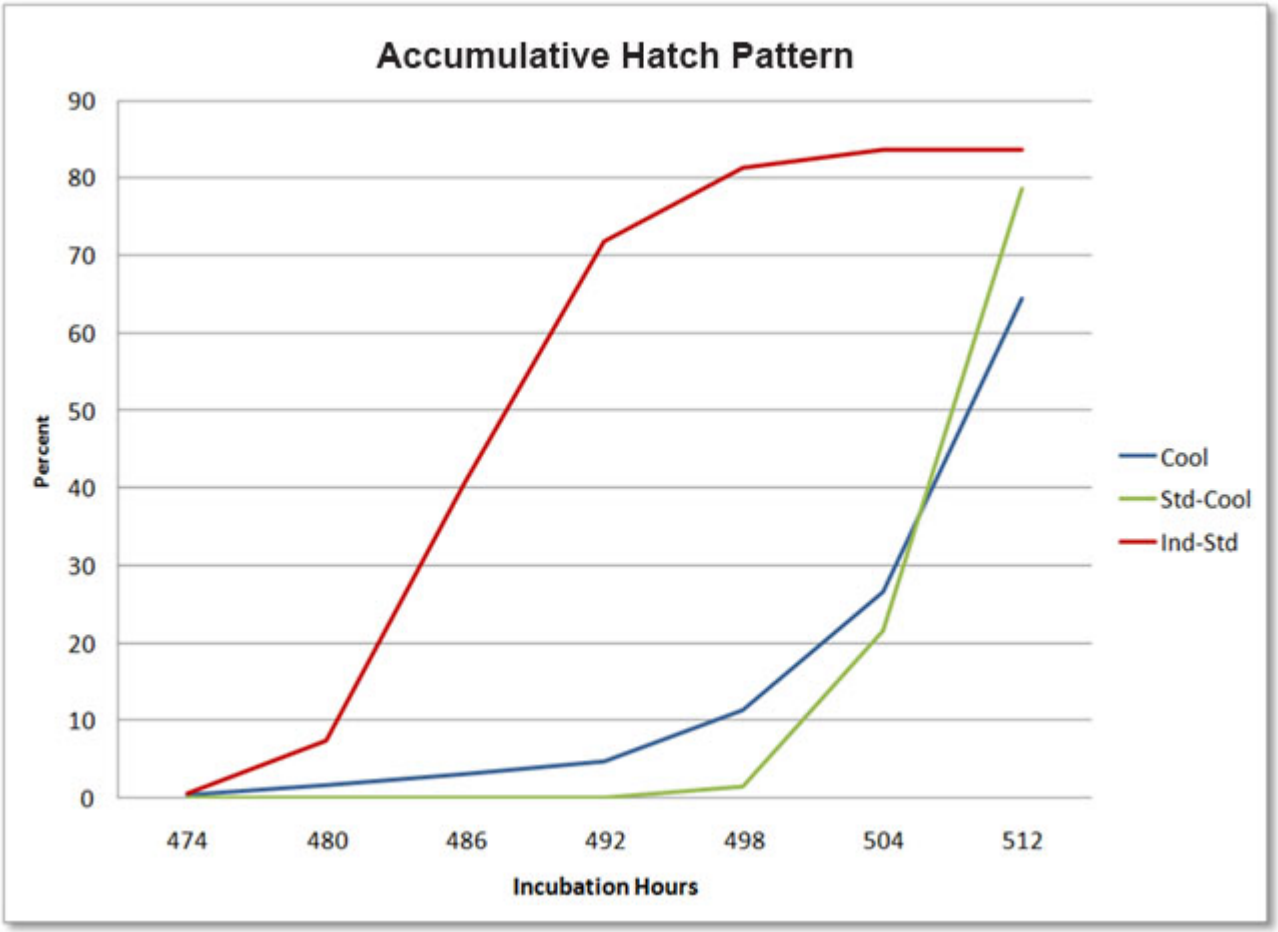


- "Chick holding" is defined as the time from hatching until chick placement on the farm. Take extra precaution to ensure chicks do not overheat or get chilled (hatcher, pull or separator room, chick room and transport). Chicks lose body heat quickly and must be held at the proper temperature in the absence of drafts.

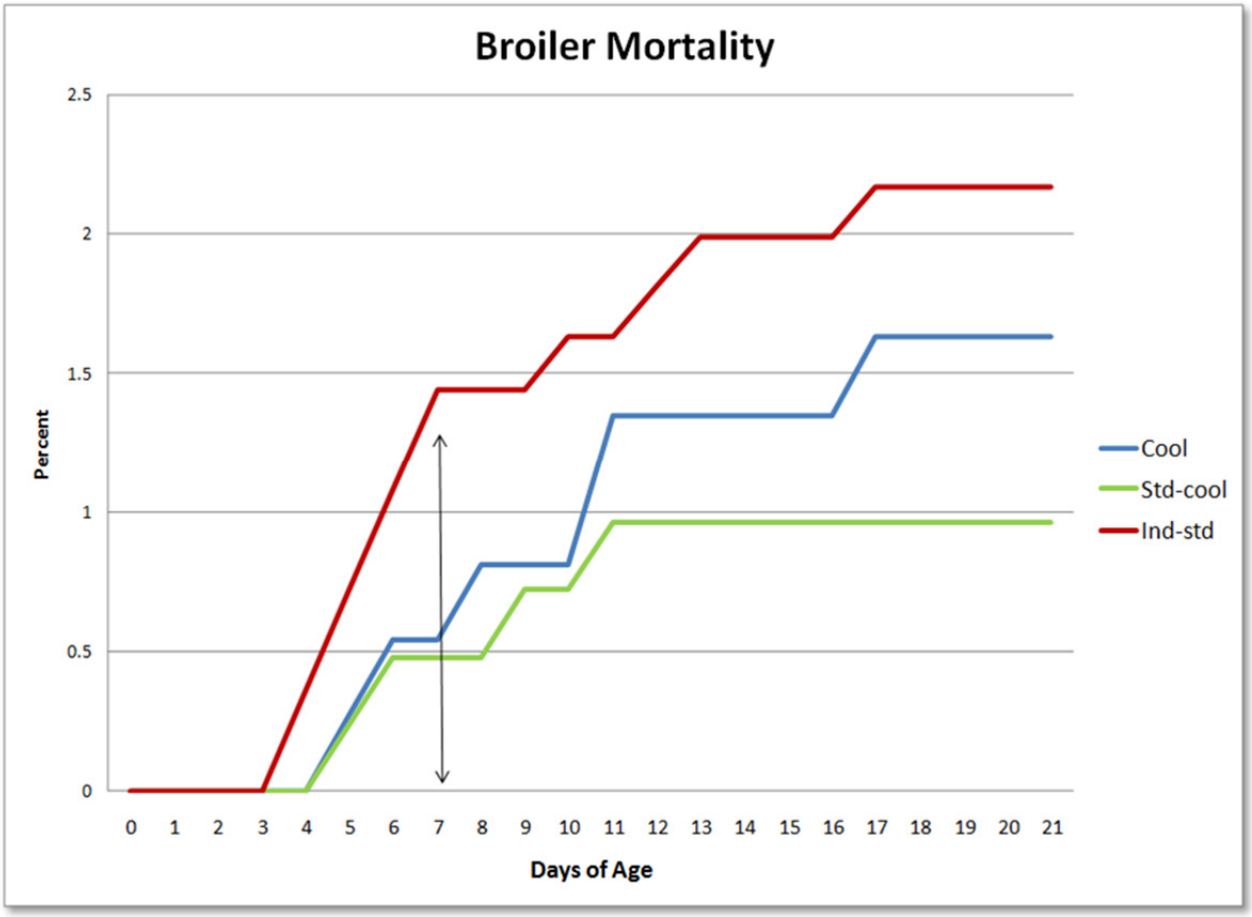
- Cobb 700 chicks hatch early at approximately 500-501 hours under “normal hatchery conditions”. Setter temperature & set/pull time adjustments can be implemented to adjust this time. If no changes are made to the setter temperature, the set/pull time could be much earlier than desired.

The graph below illustrates the hatch pattern differences with the different incubation temperatures. **Notice the dramatic difference in pipping time with the industry standard incubator setting versus the lower incubator temperature setting.**



- The goal with these recommendations is to allow the bird to reach its maximum genetic potential and achieve the total effective hatch percent possible based upon fertility. The Cobb 700 embryo/chick if overheated can have negative consequences to performance. This overheating can include the following signs when evaluating the chicks: dehydration, poor yolk sac absorption, lethargic chicks, and decreased chick yield percentages. When these factors become evident in a chick quality assessment, patterns in 7 day broiler mortality can increase.

The graph below indicates how lowering the overall incubator temperature influences the 7 day mortality pattern.



*All chart data was gathered and provided by Dr. Jeanna Wilson, University of Georgia

Summary

- Designing incubator temperatures to insure EST of 99.8 to 100.7°F @ 18 days (37.7 to 38.2°C).
- Developing hatcher profile to insure chick rectal temperature between 103.5-104.5°F (39.5-40.5°C).
- Extending total incubation hours to maximize hatch percent and chick quality.
- Using the pre-pull assessment calculation to understand approximate hatch times based on total incubation hours.

These practices will help the hatchery maximize the use of the Cobb700 product to its full potential.

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