

Hatchery ventilation



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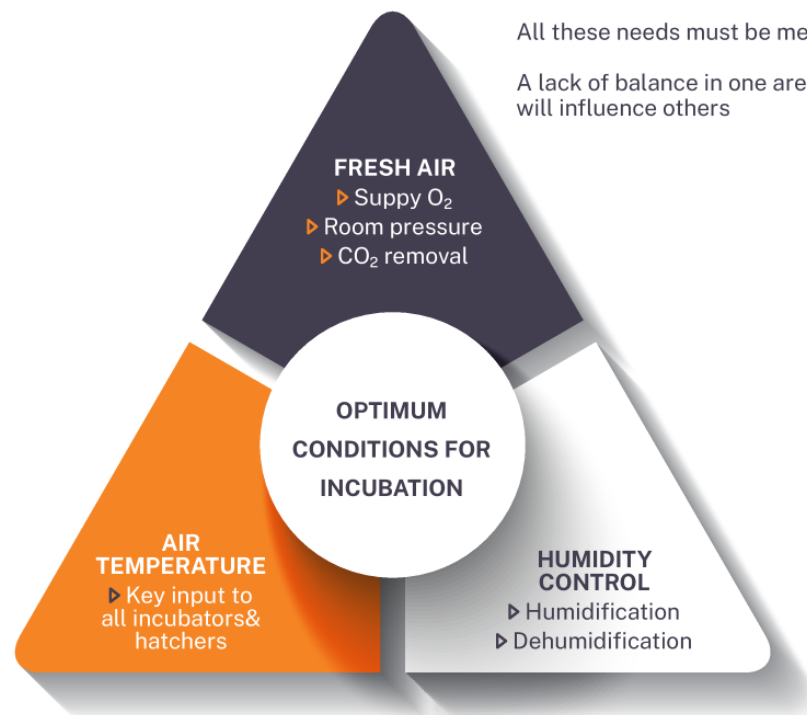
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Summary

This short course on hatchery ventilation should provide you with information to help you understand **how important of a role proper ventilation is within the hatchery.**



Proper ventilation in the hatchery is critical for proper air exchange in the setters, hatcher, chick storage/holding area, and the rest of the hatchery.



It is critical for the removal of excess moisture, CO₂, bacteria, and other contaminants, while introducing clean fresh air for metabolic processes for embryonic development.

- ▶ The purpose of ventilating rooms within the hatchery is to provide a consistent environment for the incubators and hatchers to operate;
- ▶ This will allow for optimal development of the embryo/chick.
- ▶ The eggs/chicks in incubators and hatchers contain living, developing embryos/chicks, which need the proper conditions to develop and grow.

- ▶ To achieve optimal development, hatchability, and chick quality, they need the correct temperature, humidity, and air(oxygen). This can only happen if the rooms within the hatchery are properly ventilated.

Proper hatchery ventilation is more than just ventilating the incubator and hatcher rooms, **it must provide the correct temperature, humidity, and air throughout the hatchery as well.**



We need to provide the correct temperature, humidity, and air in the egg storage room, chick holding room, transfer, and pull rooms to name a few. **All of these areas have differing ventilation requirements to provide optimal conditions for the eggs/chicks within these rooms.**

Often times we do not pay enough attention to the ventilation system, within the hatchery, when things go wrong. We first look at and blame the setters and hatcher for the poor performance, therefore changing setter and hatcher temperatures, humidity, and ventilation settings within the profiles or stage programs in hopes to improve the results.

	Acceptable Temperature Range (d.b.)	Optimum Temperature (d.b.)	Relative Humidity Range	Optimum Relative Humidity	Room Pressure Differential to Outside
Platinum Incubators – Single Depth	72°F – 78°F 22°C – 26°C	75°F 24°C	40 – 50%	45%	0.005 – 0.015" W.C. 1.2 – 3.7 Pa
Platinum Incubators – Double Depth	72°F – 78°F 22°C – 26°C	75°F 24°C	40 – 50%	45%	0.010 – 0.020" W.C. 2.5 – 5.0 Pa
Multistage Incubators	78°F – 85°F 26°C – 29°C	80°F 27°C	50 – 60%	55%	0.005 – 0.015" W.C. 1.2 – 3.7 Pa



When these practices fail to yield improvements the next area of focus is on the employees and how the job tasks are performed. When this yields no improvement, the focus goes to the ventilation.

Here is how I look at things when you have a *systemic issue*, meaning all setters or hatchers within a room(s) is having an issue. Then **we need to focus on systemic root causes, such as ventilation, heating/cooling systems**, etc. If you have a machine or two giving you issues look at the machines for the root causes.

Ventilation is not that difficult as long as the ventilation system is properly designed. All too often when hatcheries expand, they forget to make adjustments to the ventilation system.



If the ventilation system was properly designed before the expansion, it will now become inadequate with the additional equipment and volume of air needed to properly ventilate this additional area of expansion. **A properly functioning ventilation system should incorporate the following.**

- ▶ Proper room/plenum pressure control throughout the hatchery
- ▶ It must satisfy the Incubation manufacturers recommendations for temperature, humidity, fresh air, and pressure.
- ▶ Maintain proper humidity levels throughout the hatchery year-round.
- ▶ Maintain proper temperature levels throughout the hatchery year-round.

Another area sometimes overlooked when designing a hatchery ventilation system is providing enough ventilation for the hatchery staff working in the different areas.

Too often hatchery **ventilation systems are designed without thinking about the staff working in these rooms.** This can create environments that are not pleasant for staff to work in.

Before designing or redesigning a ventilation system for a hatchery, contact the manufacturer of the incubators and hatchers for their recommendations to achieve optimal performance.



Hatchery ventilation, and the correct installation, are just as important as the installation of the setters and hatchers themselves.

Thank you!

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