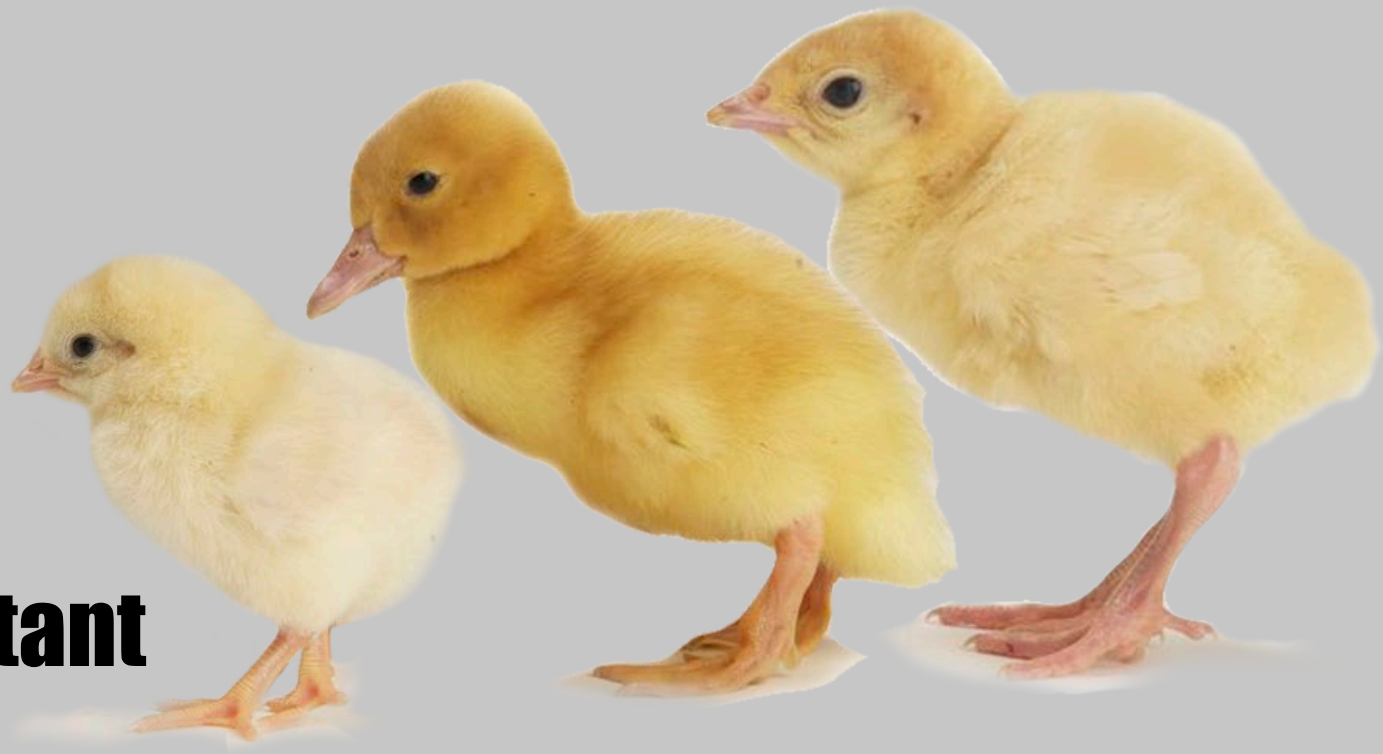
The Incubator Company

Profiling with Jamesway



Presented by:
Phillip Perry
Hatchery Consultant

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Incubation

Starts with Four Basic Requirements

1. Electricity
2. Water
3. Compressed Air
4. Ventilation

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Wayne Gretzky:
You miss 100 % of the shots you never take.

- *I skate to where the puck is going to be, not where it has been.*
- *A good hockey player plays where the puck is. A great hockey player plays where the puck is going to be.*

- *Consider where the hatch is going to be, not where it has been.*
- *A good hatchery knows where the hatch is. A great hatchery knows where the hatch is going to be.*

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Where the Hatch is Going to be
Egg Setting Considerations

- Breed type
- Age of Flock
- Age of Eggs
- Partial Setting
- Mixed Sets
- SPIDES Treatment
- Total Incubation Time
- Profiles

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An Overview of Incubation Systems

Multi-stage systems always contain eggs at different development stages, the incubator environment (including temperature, humidity and CO2 level) must be ‘averaged’.

The incubation environment is a compromise.

The Single-stage system is controlled in such a way that temperature, humidity and CO_2 levels are always perfectly adapted to the needs of the embryos at a given embryonic development stage.

The incubation environment is optimized.

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What are profiles?

Profiles are user defined machine environment parameters (primarily temperature, humidity and damper/CO2) versus time in cycle.

These parameters are:

- Specific to the type of egg being incubated.
- Change depending on stage of embryonic development in order to optimize hatchability and hatchling quality.

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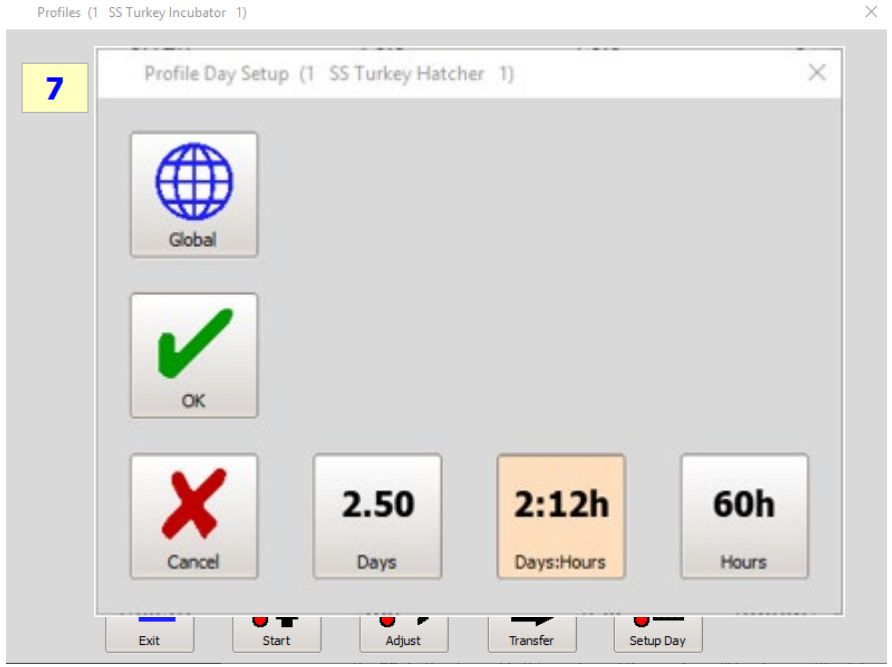
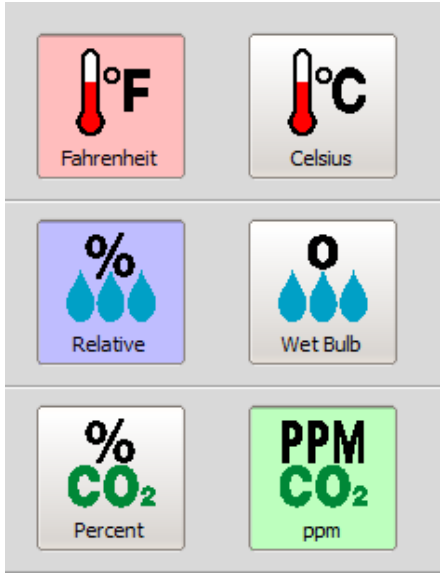
Profile Preferences



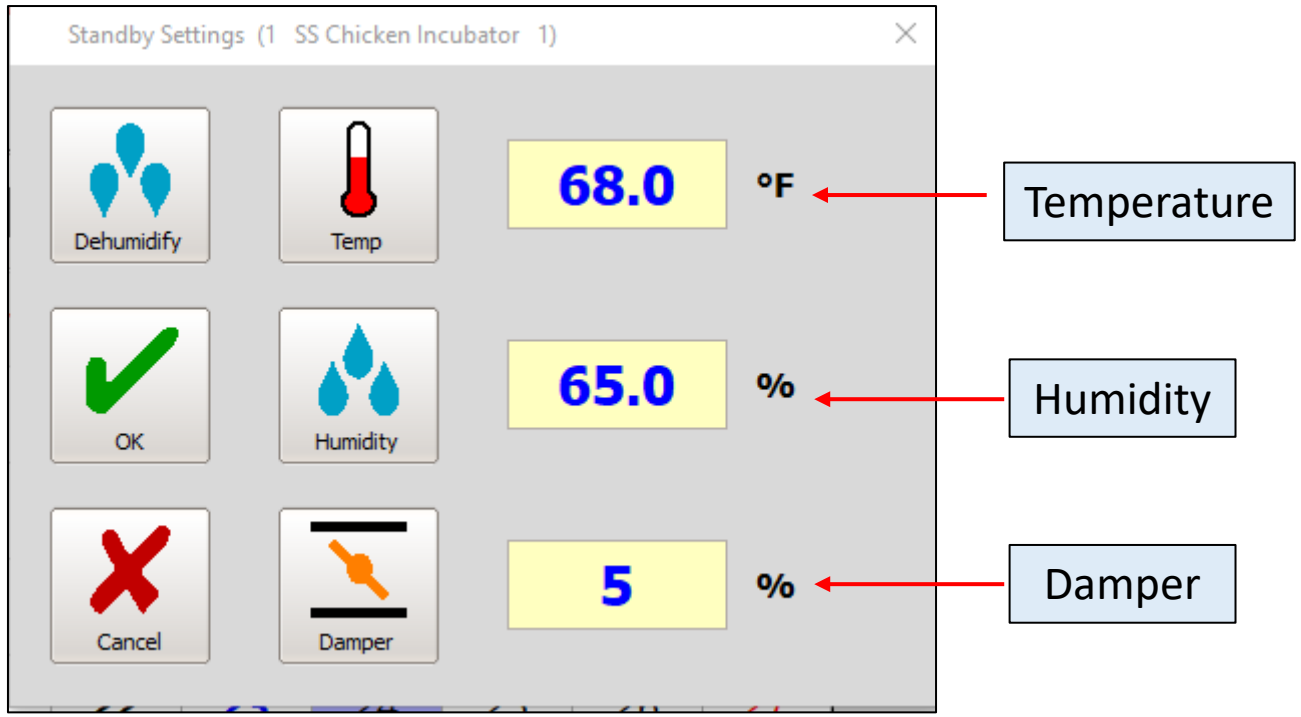


Incubator Profile

Standby mode: Hold eggs at storage conditions prior to onset of incubation

Standby Settings

When the start time for the profile is in the future, the machine will enter Standby mode. The Standby Settings screen will appear.
Adjusting the setpoint to egg room temperature makes it possible to use the machine as an egg room until it is time to start incubation.



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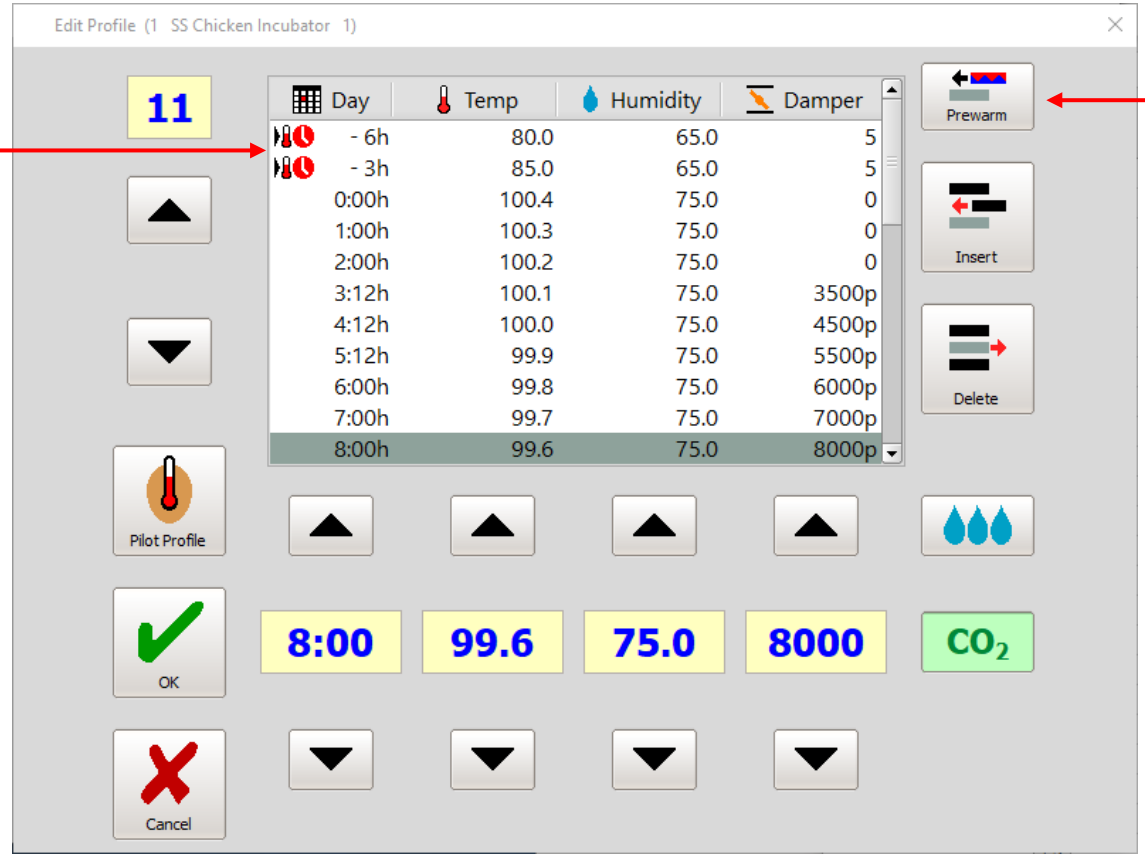
Incubator Profile

Standby mode: Hold eggs at storage conditions prior to onset of incubation

Pre-warm eggs: Prior to onset of incubation

Prewarm Steps

For incubators, a prewarm step can be inserted at the top of a profile to modify the setpoints (typically temperature) before the profile starts.



Prewarm steps

Add a Prewarm step

Incubator Profile

Standby mode: Hold eggs at storage conditions prior to onset of incubation

Pre-warm eggs: Prior to onset of incubation

Start incubator profile: Started at preprogrammed date and time

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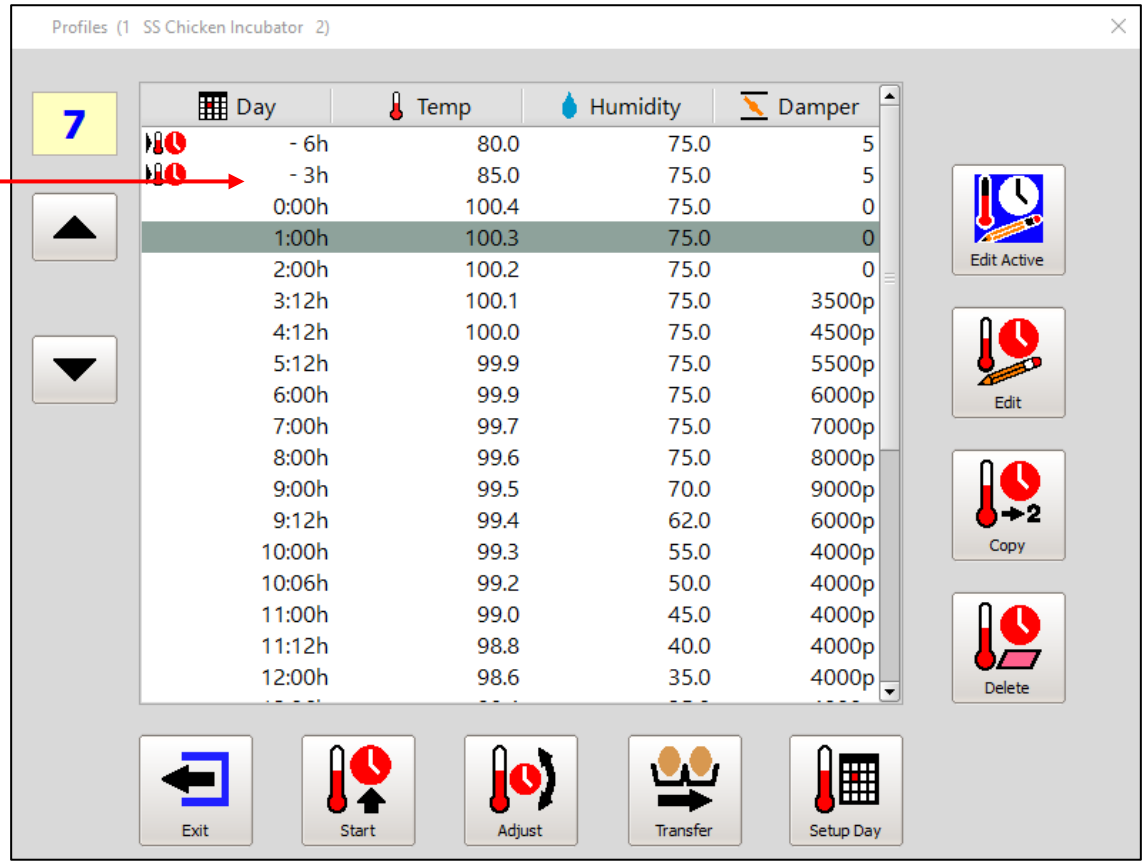
The Profile

Environment parameters - temperature, humidity and damper/CO2 contrasted with time in cycle.

Time in Cycle



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Incubator Profile Overview

Standby mode: Hold eggs at storage conditions prior to onset of incubation

Pre-warm eggs: Prior to onset of incubation

Start incubator profile: Started at preprogrammed date and time

Last day in incubator: Usually 17-18 Chickens, 24-25 Turkeys/Ducks

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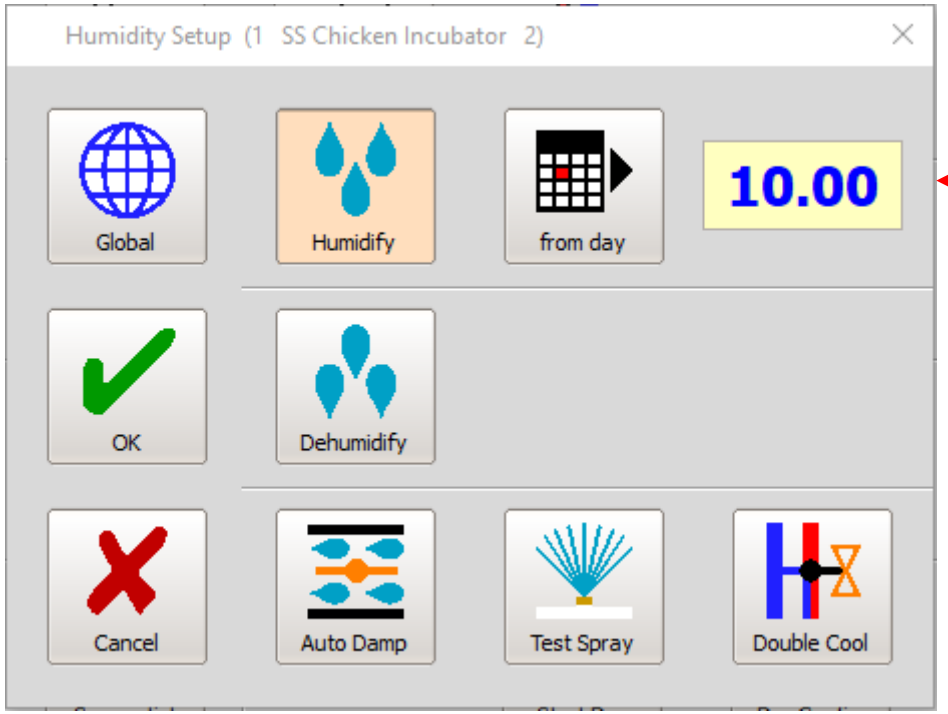
Day in Cycle
Humidity Setup



Choose day to begin Humidification

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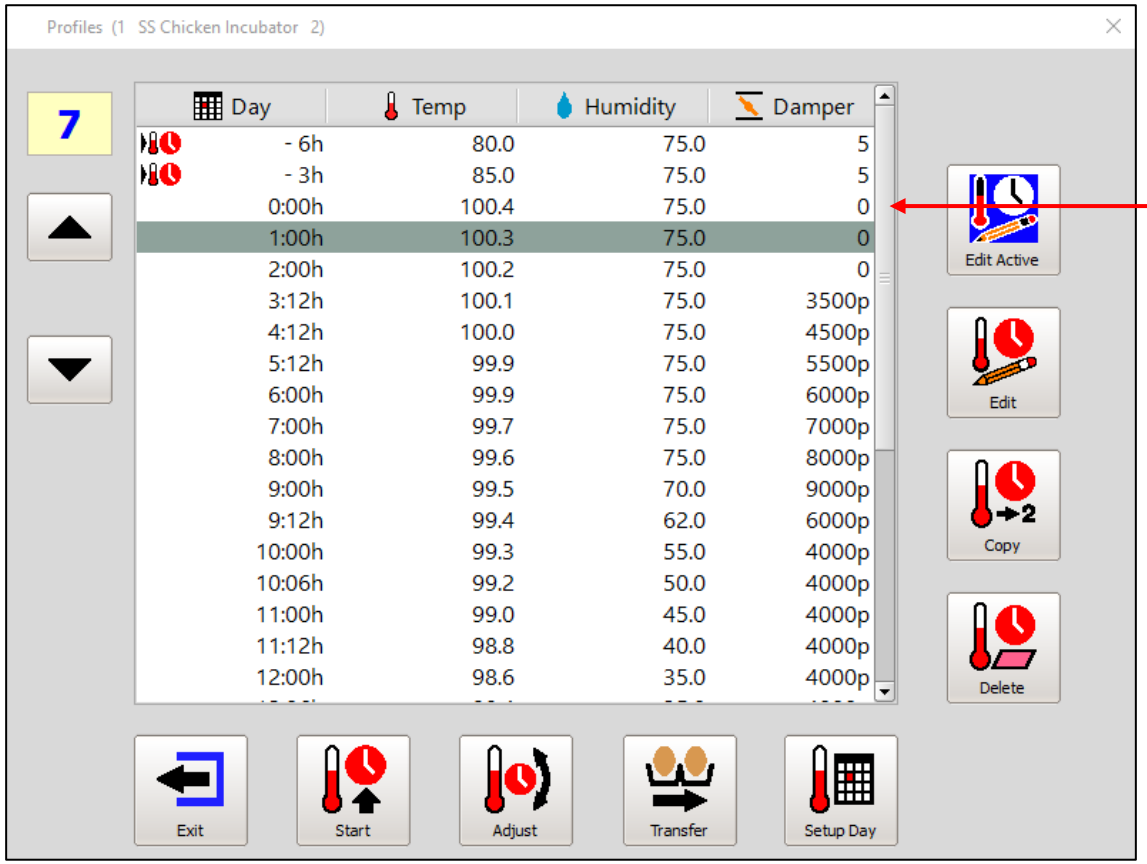
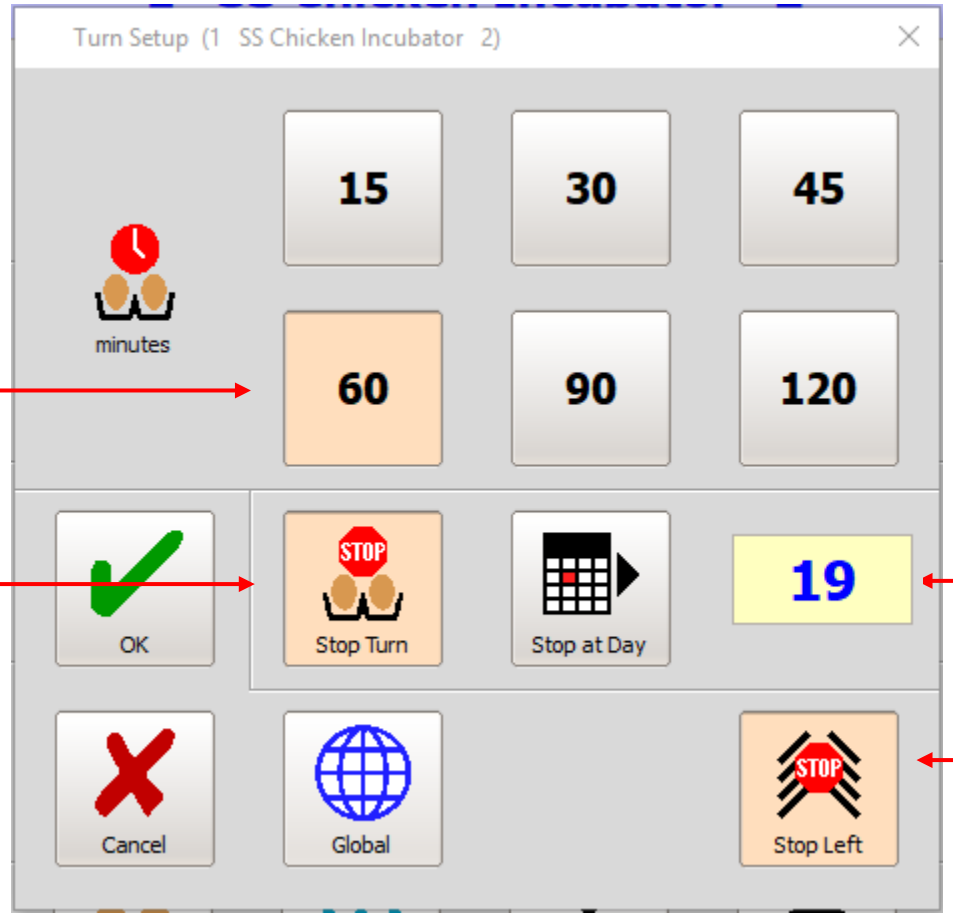
Humidity
Alarm Operation



0% Damper

Day in Cycle

Turning Setup



Amount of time between turns

Stop Rack button

Calendar or Stop Day button

Stop Turn Left

Day in Cycle

Fan Setup

Standby Setting

Day Interval

Fan Speed

Select Days Button
Fan Speed Setup screen

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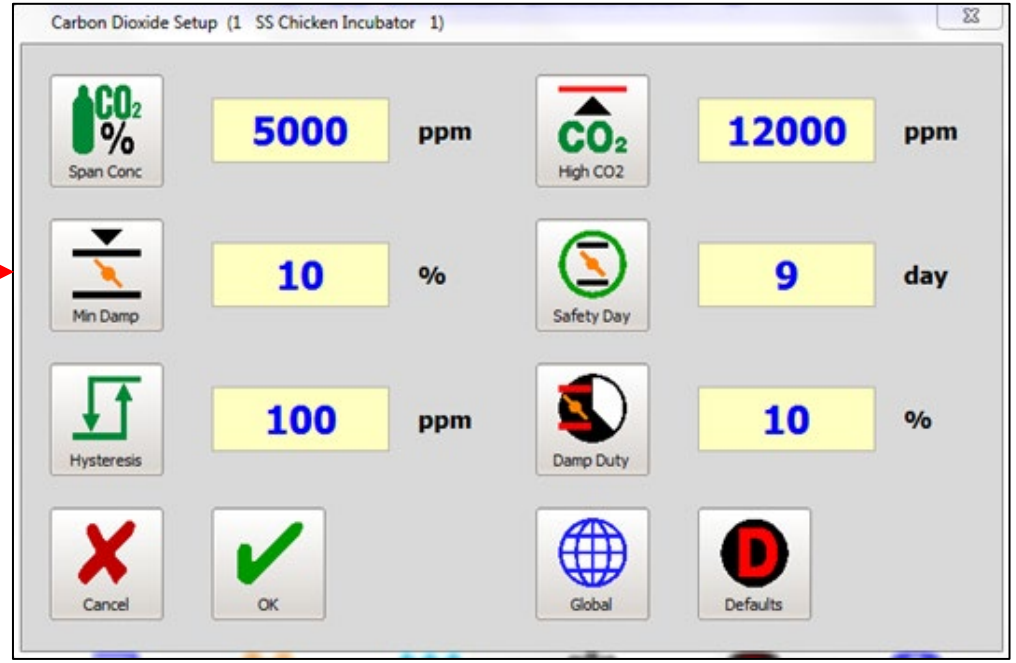
Time in Profile

CO2 Setup

Minimum Damper



Safety Day

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Transferring eggs to the Hatcher

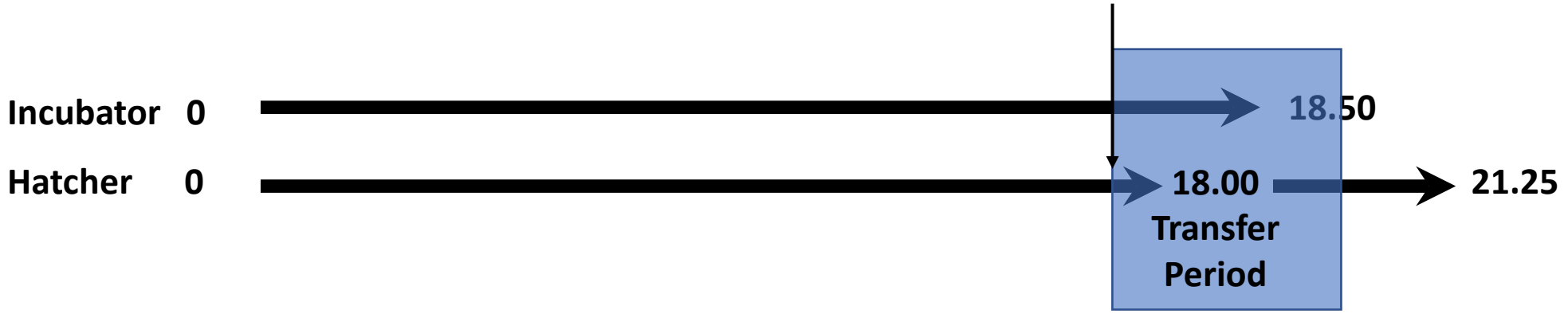
The incubation period is a single continuous process from the time the embryo starts developing through to the hatch.

Removing the eggs from the incubator and transferring them to a hatcher does not stop the process.

Transferring to the Hatcher

When a Hatcher Profile is run in conjunction with an incubator profile, the 2 combined represent a single contiguous process.

This is the preferred method of activating and setting up the hatcher profile. The profile is a continuation of the incubator profile and set date.



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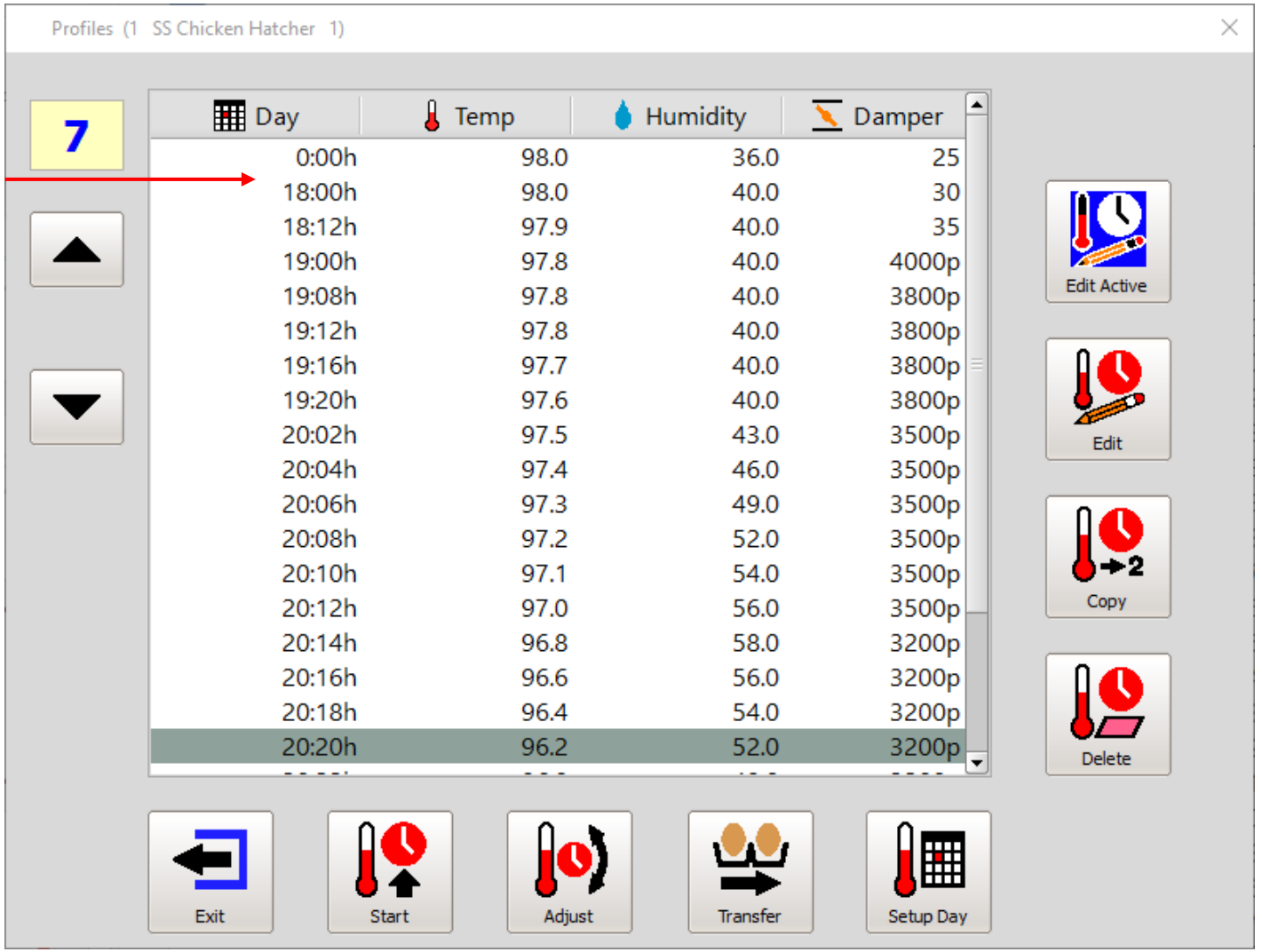
Hatcher Profile Start Time

Time in Cycle



Hatcher Profile

Profile 7 - Tutorial Profile (Not Recommended)			
Day	Temperature	Humidity	Damper
0.00	98.8	53.0	45
1.00	98.8	53.0	15
1.50	98.5	53.0	17
1.63	98.5	53.0	20
1.75	98.5	55.0	22
1.88	98.5	58.0	22
2.00	98.3	61.0	22
2.13	98.1	65.0	22
2.25	98.0	70.0	26
2.38	98.0	75.0	26
2.50	98.0	75.0	33
2.63	98.0	75.0	38
2.75	97.8	70.0	41
2.88	97.6	65.0	41
3.00	97.6	65.0	46

Note: The values shown in these examples are to be used as a guideline only. These profiles are not specific to any location, and do not take into account breed, age of flock or age of the eggs.

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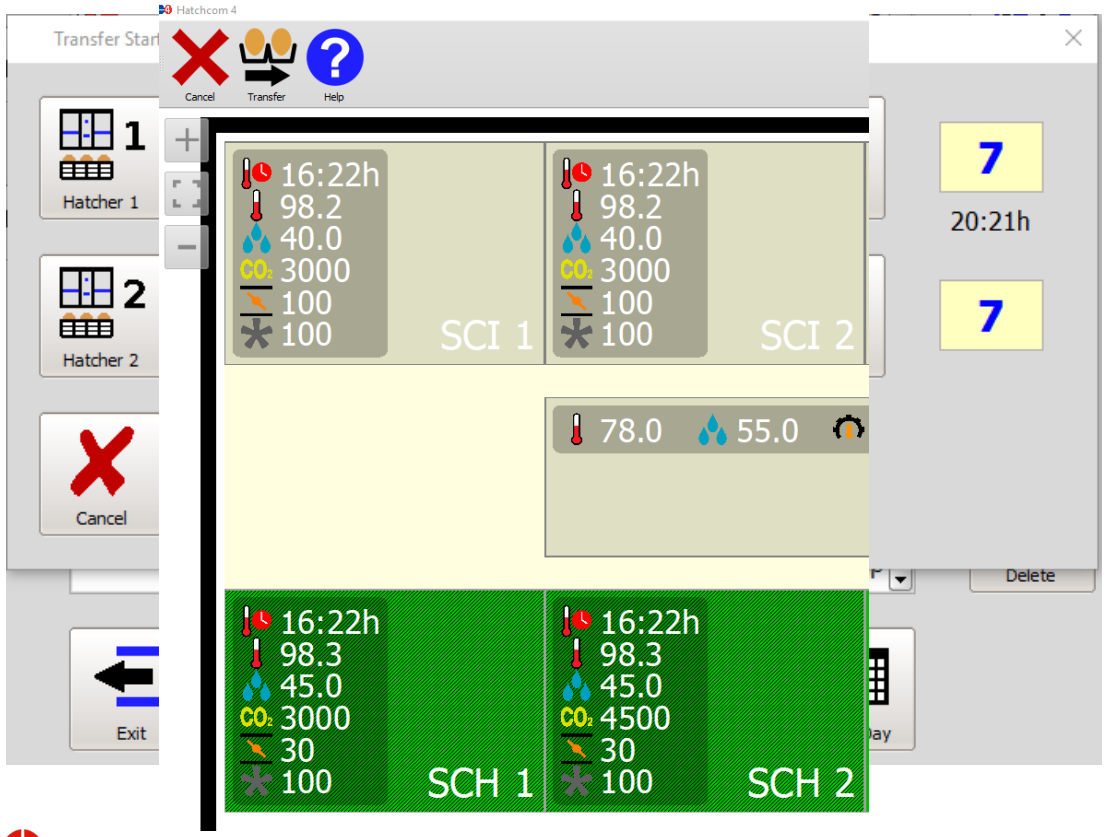
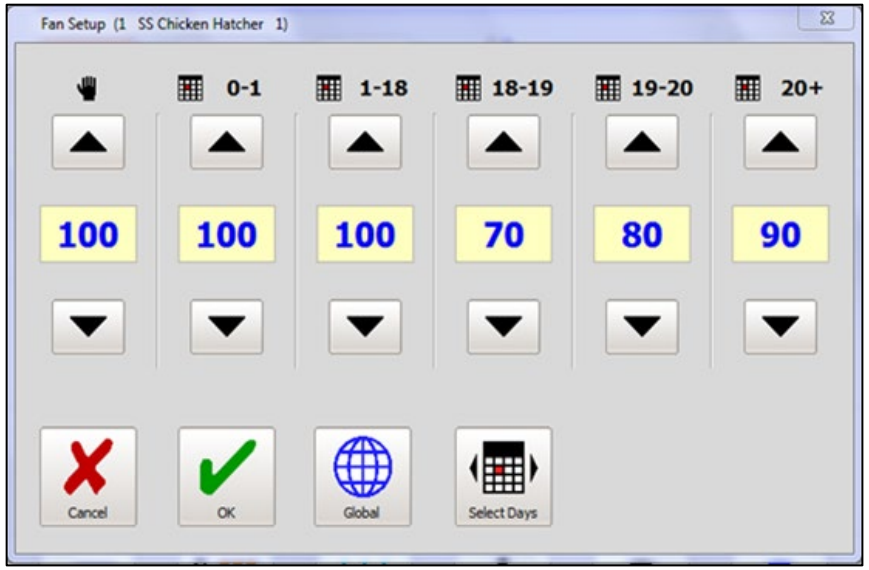
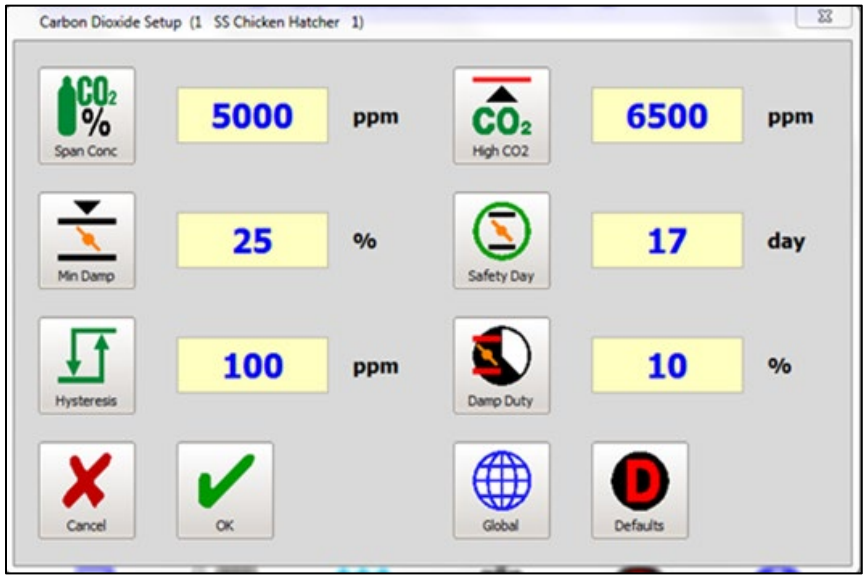
Starting a Hatcher Profile

- Enter date manually at hatcher display
- Transfer start date from incubator display
- Hatchcom



Hatcher Setups
Day in Cycle





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Incubator Profile

Incubator Profile with 510 - 512 Total Incubation Time						
		Day/Hr	Air Temperature	Humidity	Damper CO2 PPM	Damper % Opening
PreWarm	1	-6	80.0	75%	10	10
	2	-3	85.0	75%	5	5
Endothermic / Develomental	3	0.00	100.4	75%	0	0
	4	1.00	100.3	75%	0	0
	5	2.00	100.2	75%	0	0
	6	3.12	100.1	75%	4000 PPM	0
	7	4.12	100.0	75%	5000 PPM	0
	8	5.12	99.9	75%	6000 PPM	2%
	9	6.00	99.8	75%	7000 PPM	3%
Neutral / Maintenance	10	7.00	99.7	75%	8000 PPM	4%
	11	8.00	99.6	75%	9000 PPM	5%
	12	9.00	99.5	70%	10000 PPM	10%
	13	9.12	99.4	62%	6000 PPM	15%
	14	10.00	99.3	55%	4000 PPM	20%
	15	10.06	99.2	50%	4000 PPM	25%
	16	11.00	99.0	45%	4000 PPM	30%
	17	11.12	98.8	40%	4000 PPM	35%
	18	12.00	98.6	35%	4000 PPM	40%
	19	12.06	98.4	35%	4000 PPM	45%
	20	12.12	98.2	35%	4000 PPM	50%
	21	13.00	98.0	35%	4000 PPM	55%
	22	13.12	97.8	35%	4000 PPM	60%
Exothermic / Maturity	23	14.00	97.6	35%	3800 PPM	65%
	24	14.12	97.4	35%	3700 PPM	70%
	25	15.00	97.2	35%	3500 PPM	75%
	26	15.12	97.0	35%	3400 PPM	80%
	27	16.00	96.8	30%	3200 PPM	85%
	28	16.12	96.8	30%	3000 PPM	90%
	29	17.00	96.8	30%	2500 PPM	95%
	30	18.00	96.8	30%	100%	100%

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Developing Profiles

Using the Pilot Egg System, Jamesway develops and provides profiles and machine setups for our customers.

Profiles are primarily based on prime eggs and age.

Factors that influence profile development are:

- Breed and bird type
- Machine (size)
- Type of Egg flat
- 15 or 16 tier incubator racks (chickens)

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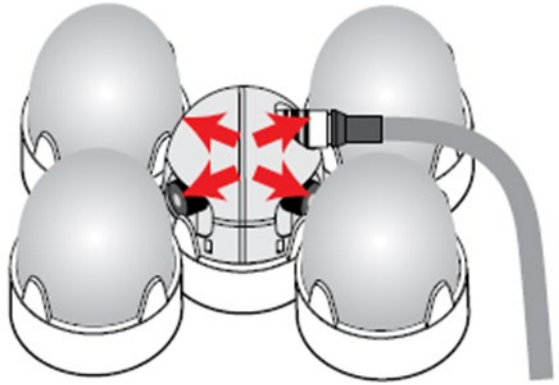
Pilot Egg System

- Pilot Egg Sensors provides the eggshell temperature accurately and consistently.

- Adjusts the incubation environment based on the eggshell temperature to maintain the ideal embryo development.



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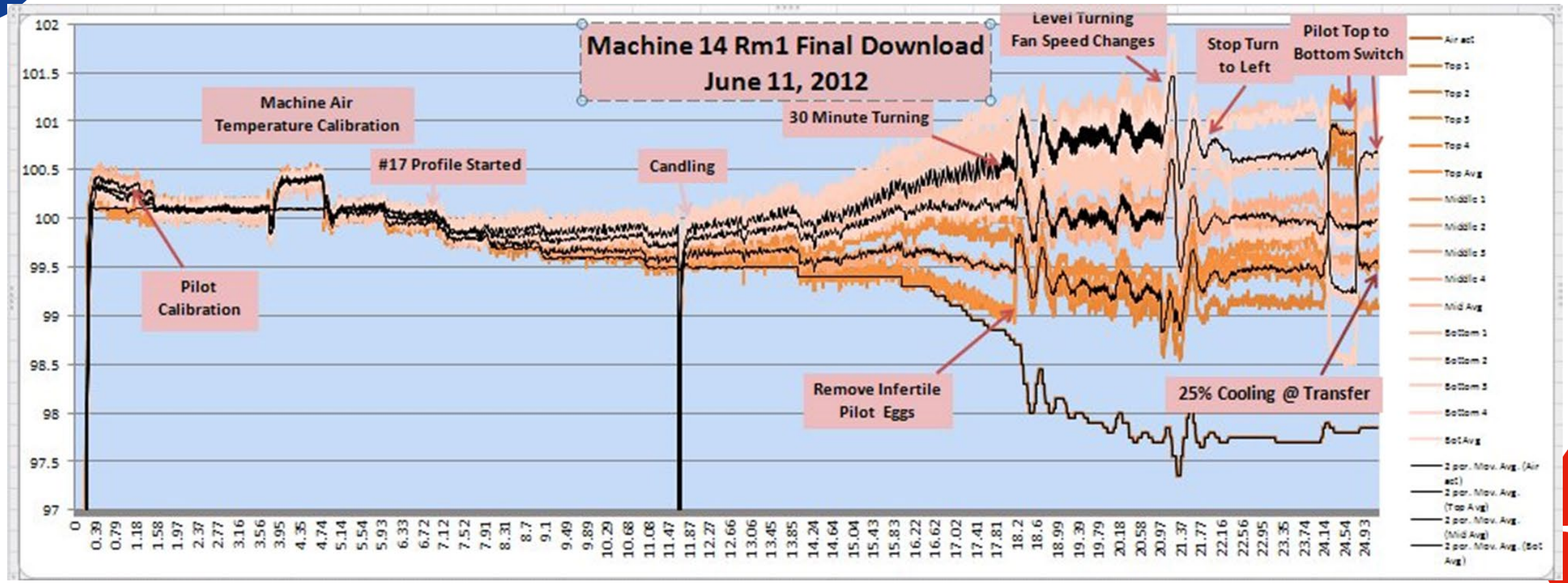
Testing with Pilots



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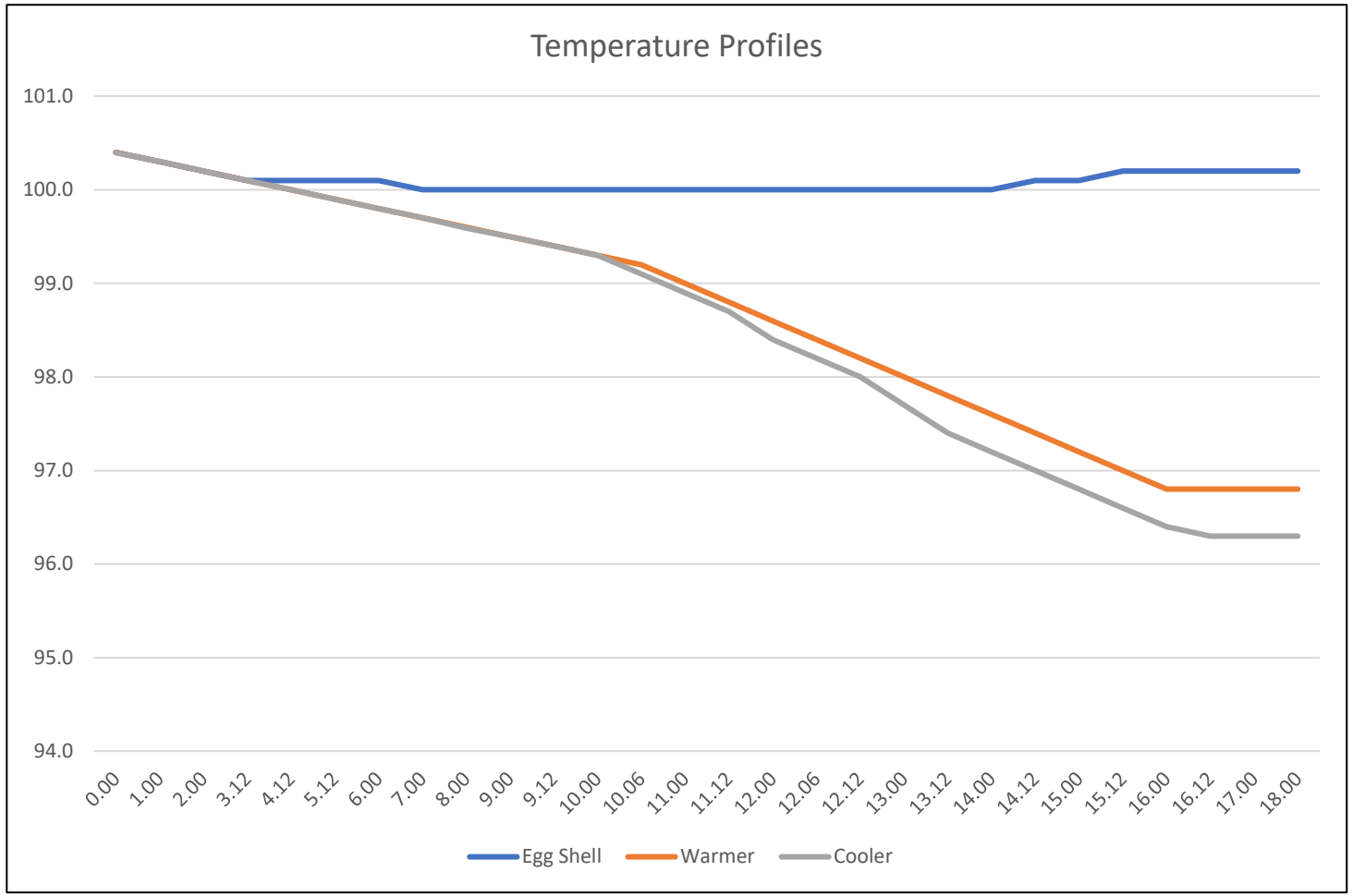
P120 Different Broiler Breeds

		Egg Shell	Warmer	Cooler
Develomental	0.00	100.4	100.4	100.4
	1.00	100.3	100.3	100.3
	2.00	100.2	100.2	100.2
	3.12	100.1	100.1	100.1
	4.12	100.1	100.0	100.0
	5.12	100.1	99.9	99.9
	6.00	100.1	99.8	99.8
Maintenance	7.00	100.0	99.7	99.7
	8.00	100.0	99.6	99.6
	9.00	100.0	99.5	99.5
	9.12	100.0	99.4	99.4
	10.00	100.0	99.3	99.3
	10.06	100.0	99.2	99.1
	11.00	100.0	99.0	98.9
	11.12	100.0	98.8	98.7
	12.00	100.0	98.6	98.4
	12.06	100.0	98.4	98.2
	12.12	100.0	98.2	98.0
	13.00	100.0	98.0	97.7
	13.12	100.0	97.8	97.4
Maturity	14.00	100.0	97.6	97.2
	14.12	100.1	97.4	97.0
	15.00	100.1	97.2	96.8
	15.12	100.2	97.0	96.6
	16.00	100.2	96.8	96.4
	16.12	100.2	96.8	96.3
	17.00	100.2	96.8	96.3
	18.00	100.2	96.8	96.3



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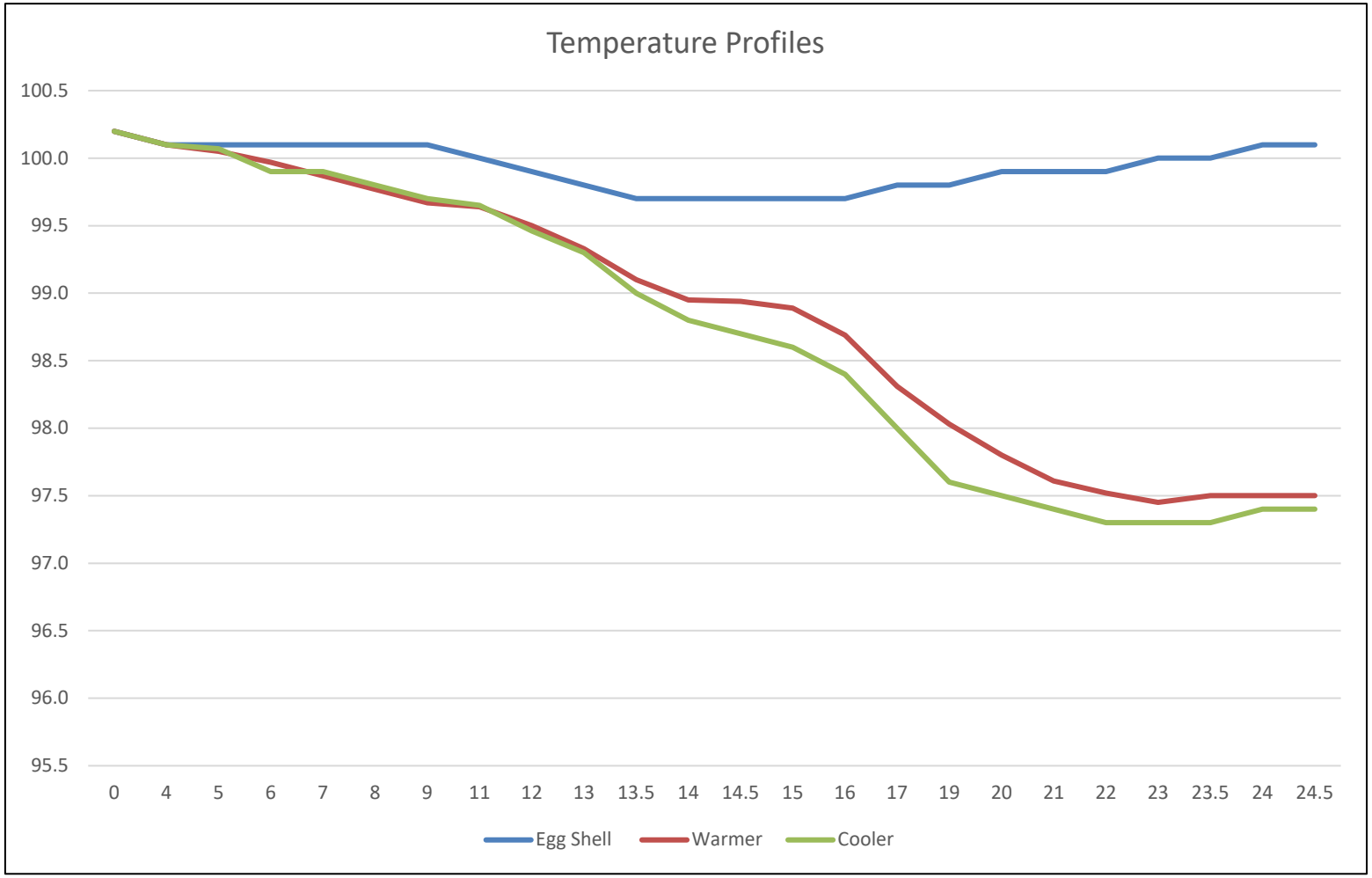
P60 Different Turkey Breeds

	Egg Shell	Warmer	Cooler
0	100.2	100.2	100.2
4	100.1	100.1	100.1
5	100.1	100.1	100.1
6	100.1	100.0	99.9
7	100.1	99.9	99.9
8	100.1	99.8	99.8
9	100.1	99.7	99.7
11	100.0	99.6	99.7
12	99.9	99.5	99.5
13	99.8	99.3	99.3
13.5	99.7	99.1	99.0
14	99.7	99.0	98.8
14.5	99.7	98.9	98.7
15	99.7	98.9	98.6
16	99.7	98.7	98.4
17	99.8	98.3	98.0
19	99.8	98.0	97.6
20	99.9	97.8	97.5
21	99.9	97.6	97.4
22	99.9	97.5	97.3
23	100.0	97.5	97.3
23.5	100.0	97.5	97.3
24	100.1	97.5	97.4
24.5	100.1	97.5	97.4



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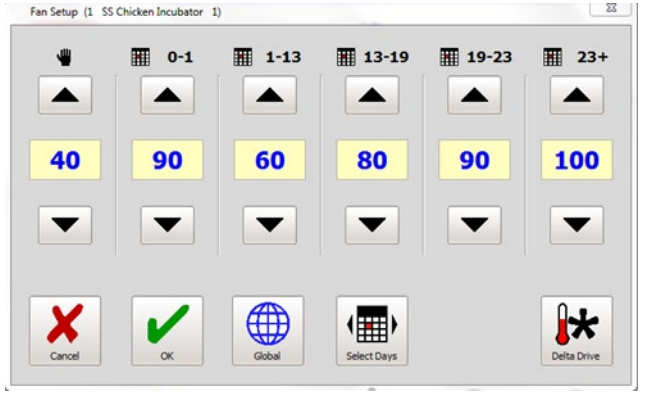
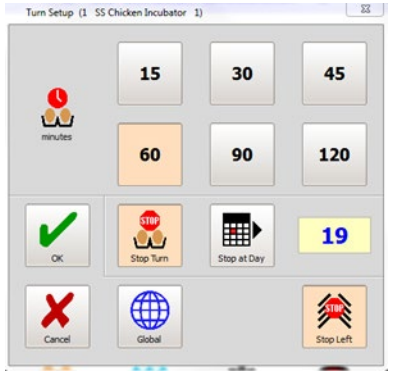
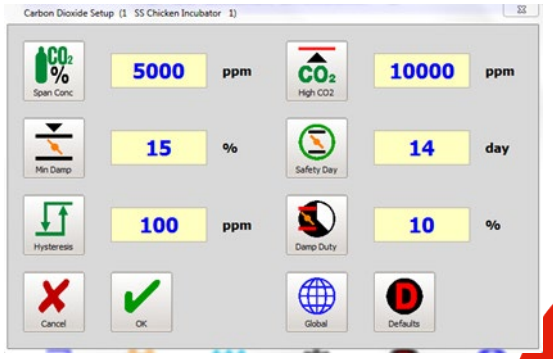
P40 Turkey Profiles

Platinum Turkey Profile						
		Day/Hr	Temperature	Humidity RH%	Damper CO2 PPM	Damper %Opening
Standby		-08h	75.0	65	5	5
PreWarm	1	- 6h	80.0	65	5	5
	2	- 3h	85.0	65	5	5
Endothermic / Developmental	3	0.00	100.2	75	0	0
	4	3.00	100.2	75	3000ppm	1
	5	4.00	100.2	75	4000ppm	1
	6	5.00	100.1	75	5000ppm	2
	7	6.00	100.1	75	6000ppm	2
	8	7.00	100.0	75	7000ppm	3
Neutral / Maintenance	9	8.08	99.9	72	8000ppm	3
	10	9.00	99.8	72	9000ppm	4
	11	10.00	99.7	72	9000ppm	4
	12	12.00	99.5	72	9000ppm	5
	13	13.00	99.4	72	9000ppm	10
	14	14.00	99.2	65	6000ppm	20
	15	14.50	99.0	60	5000ppm	25
	16	15.00	98.8	50	4000ppm	30
Exothermic / Maturity	17	16.16	98.6	45	4000ppm	40
	18	17.00	98.4	40	4000ppm	45
	19	18.00	98.2	40	4000ppm	50
	20	19.00	98.0	40	3500ppm	60
	21	20.00	97.8	38	3500ppm	70
	22	21.00	97.6	36	3500ppm	75
	23	22.00	97.4	35	3200ppm	80
	24	24.00	97.6	33	3000ppm	90
	25	25.00	97.7	32	2800ppm	100

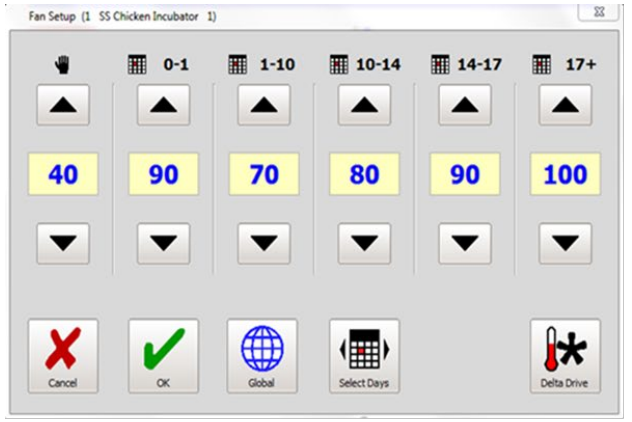


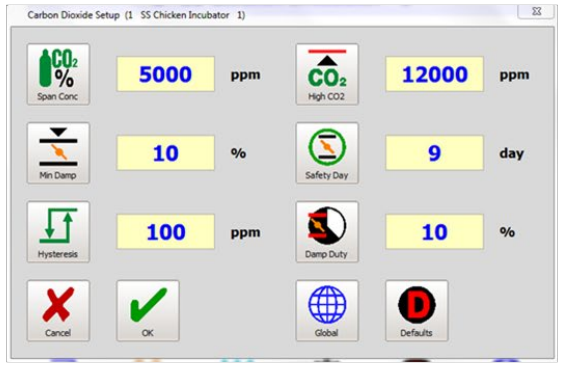


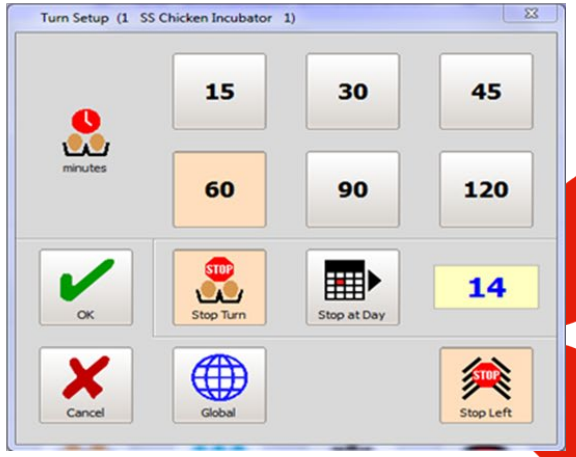


P40 Profile

Incubator Profile 510 - 512 Total Incubation Time Profile 3						
		Day/Hr	Air Temperature	Humidity	Damper CO2 PPM	Damper % Opening
PreWarm	1	-6	80.0	75%	5	5
	2	-3	85.0	75%	5	5
Endothermic / Develomental	3	0.00	100.4	75%	0	0
	4	1.00	100.3	75%	0	0
	5	2.00	100.2	75%	0	0
	6	3.12	100.1	75%	4000 PPM	0
	7	4.12	100.0	75%	5000 PPM	0
	8	5.12	99.9	75%	6000 PPM	2%
	9	6.00	99.8	75%	7000 PPM	3%
Neutral / Maintenance	10	7.00	99.7	75%	8000 PPM	4%
	11	8.00	99.6	75%	9000 PPM	5%
	12	9.00	99.5	70%	10000 PPM	10%
	13	9.12	99.4	65%	6000 PPM	15%
	14	10.00	99.3	60%	4000 PPM	20%
	15	10.06	99.2	55%	4000 PPM	25%
	16	11.00	99.0	50%	4000 PPM	30%
	17	11.12	98.8	45%	4000 PPM	35%
	18	12.00	98.6	44%	4000 PPM	40%
	19	12.06	98.4	43%	4000 PPM	45%
	20	12.12	98.2	42%	4000 PPM	50%
	21	13.00	98.1	40%	4000 PPM	55%
	22	13.12	98.0	39%	4000 PPM	60%
	23	14.00	97.8	35%	3800 PPM	70%
	24	14.12	97.6	32%	3500 PPM	75%
	25	15.00	97.4	30%	3200 PPM	80%
	26	15.12	97.2	30%	3000 PPM	85%
	27	16.00	97.2	30%	3000 PPM	90%
	28	16.12	97.2	30%	3000 PPM	95%
	29	17.00	97.3	30%	2800 PPM	100%
	30	18.00	97.4	30%	100 PPM	100%







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Profiles

Variable environments (profiles) allow for improved performance in different flocks.

- Single-Stage machines can be programmed to specific settings, which allows flexibility in the environment.
- Example profiles, listed are specifications for an average flock and should be used as guidelines for constructing your own profiles.
- It is the responsibility of each hatchery to implement proper profiles for each particular situation (breed, age of flock, age of eggs, etc.) that occurs.
- Contact a Jamesway technical advisor for assistance on profiles specific to your eggs set.

Questions?

webinars@jamesway.com

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