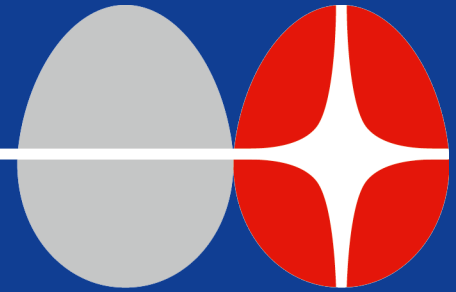


JAMESWAY



The Incubator Company

Profiling with Jamesway

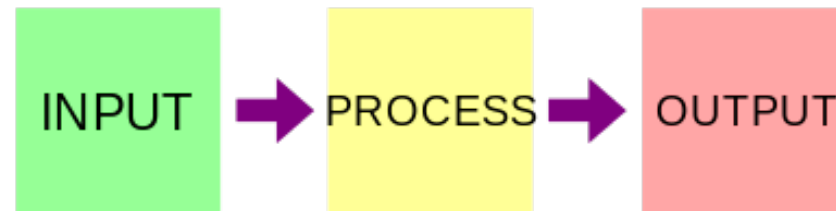
**Presented by:
Phillip Perry
Hatchery Consultant**



Incubation

Starts with Four Basic Requirements

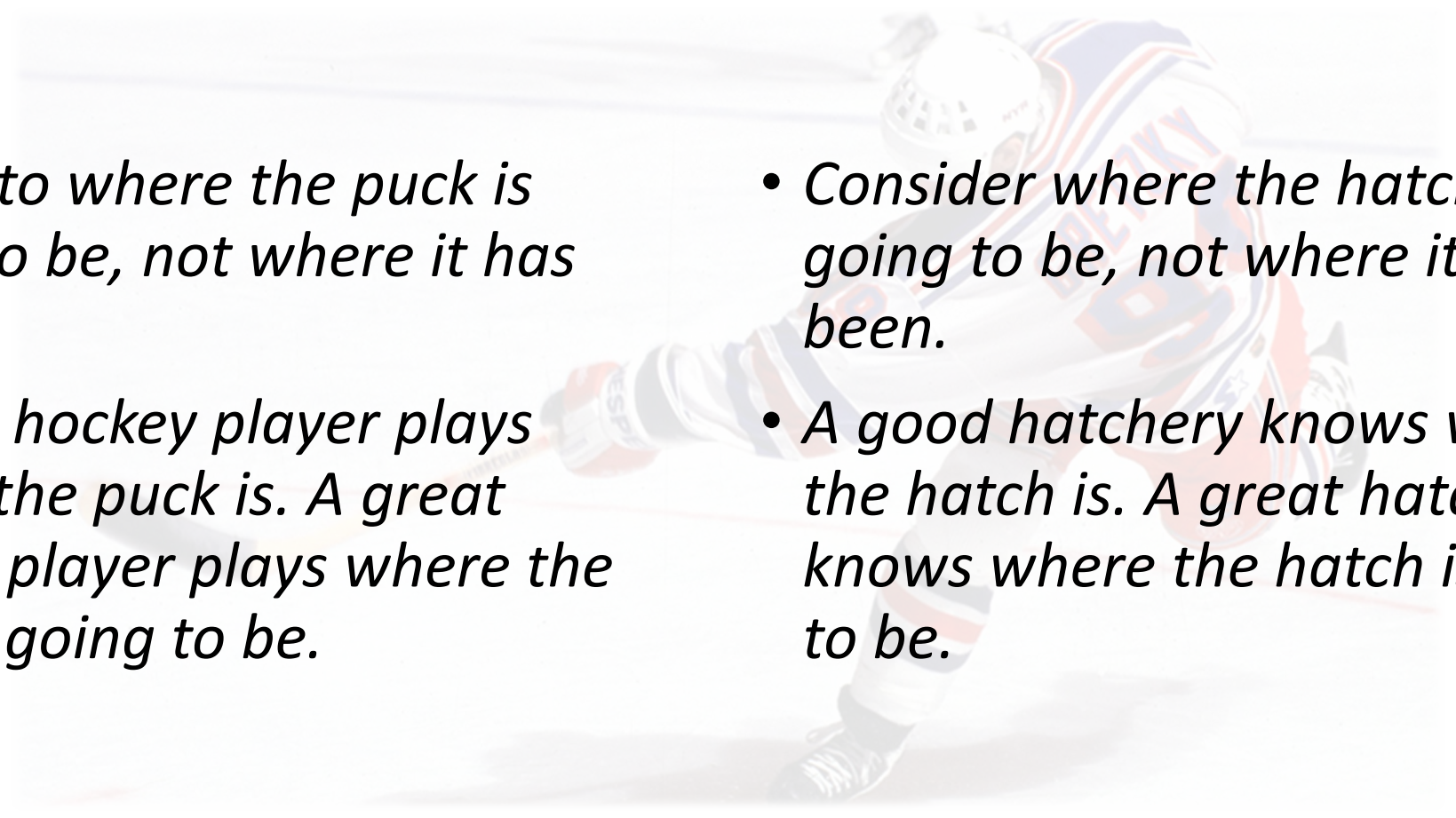
1. Electricity
2. Water
3. Compressed Air
4. Ventilation





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.*

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





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 CO₂ levels are always perfectly adapted to the needs of the embryos at a given embryonic development stage.

The incubation environment is optimized.



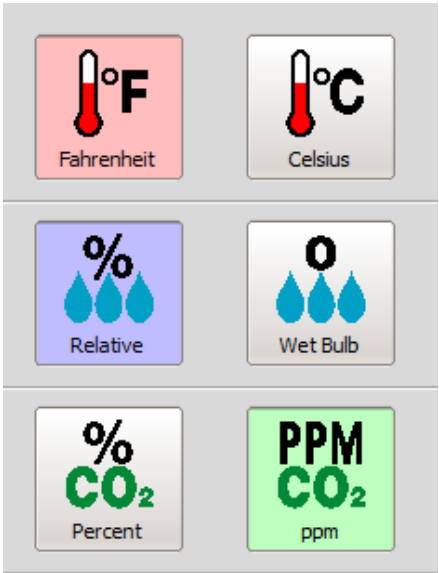
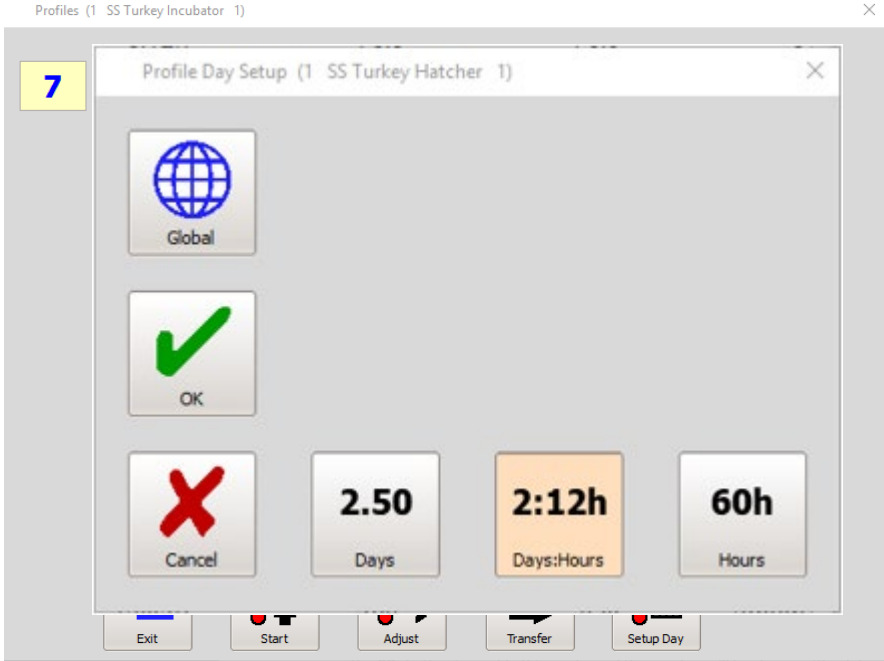
What are profiles?

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

These parameters are:

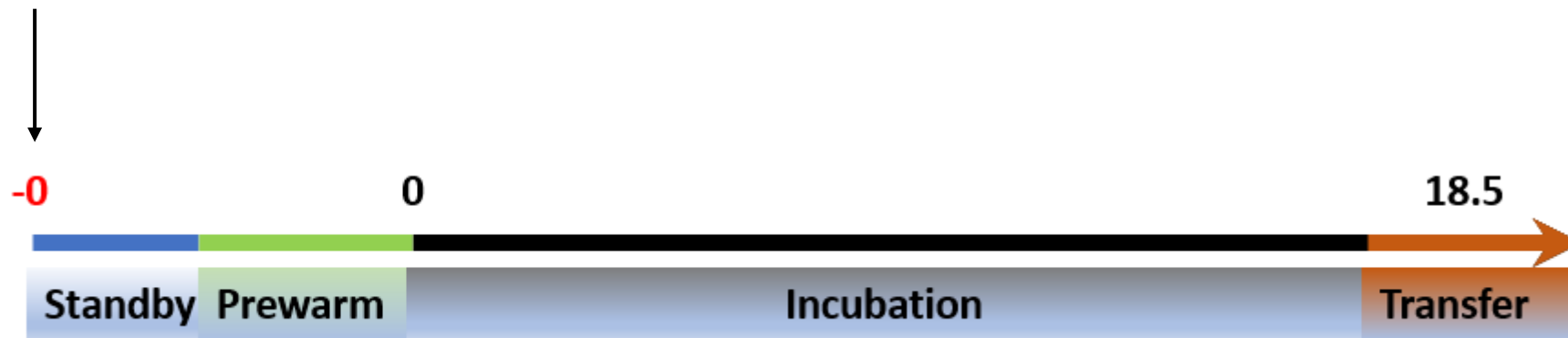
- Specific to the type of egg being incubated.
- Change depending on stage of embryonic development in order to optimize hatchability and hatchling quality.

Profile Preferences



Incubator Profile

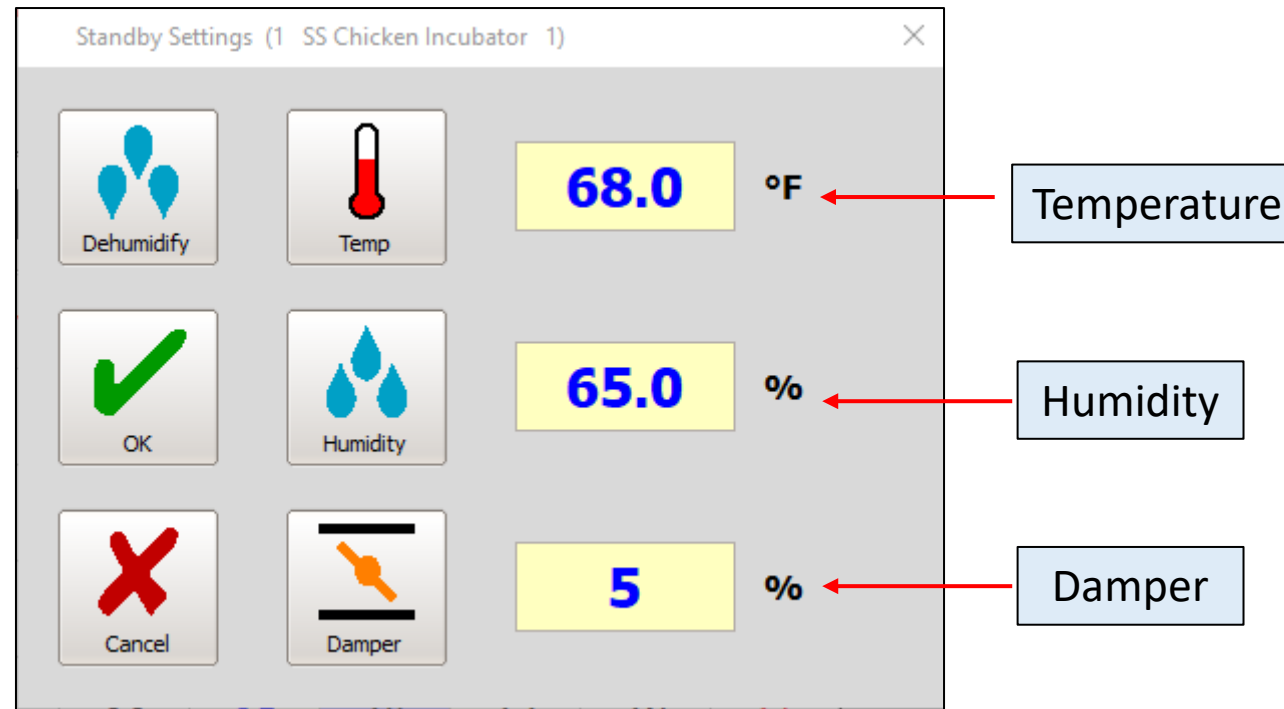
Standby mode: Hold eggs at storage conditions prior to onset of incubation



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.

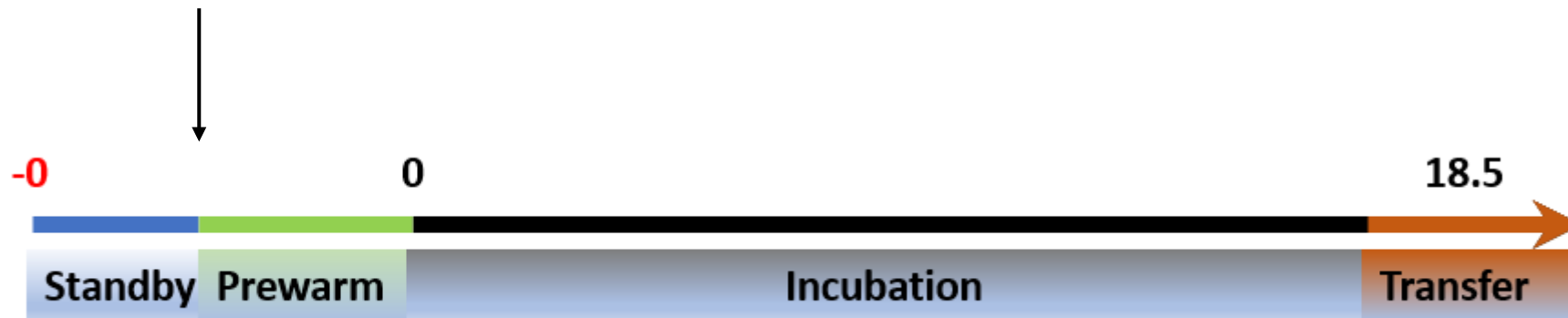
Adjusting the setpoint to egg room temperature makes it possible to use the machine as an egg room until it is time to start incubation.



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

Edit Profile (1 SS Chicken Incubator 1)

Day	Temp	Humidity	Damper
- 6h	80.0	65.0	5
- 3h	85.0	65.0	5
0:00h	100.4	75.0	0
1:00h	100.3	75.0	0
2:00h	100.2	75.0	0
3:12h	100.1	75.0	3500p
4:12h	100.0	75.0	4500p
5:12h	99.9	75.0	5500p
6:00h	99.8	75.0	6000p
7:00h	99.7	75.0	7000p
8:00h	99.6	75.0	8000p

Buttons: Pilot Profile, OK, Cancel, Prewarm, Insert, Delete

Values: 8:00, 99.6, 75.0, 8000, CO₂

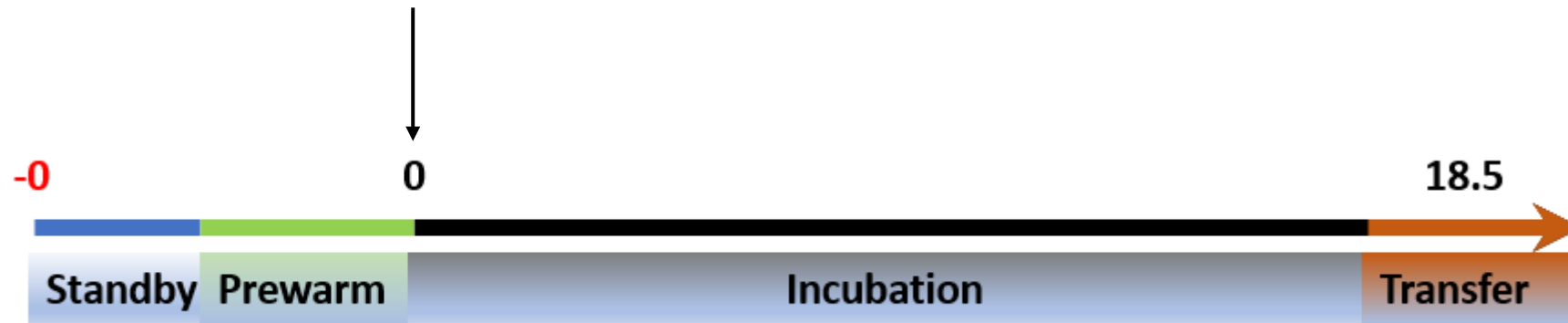
Add a Prewarm step

Incubator Profile

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

Pre-warm eggs: Prior to onset of incubation

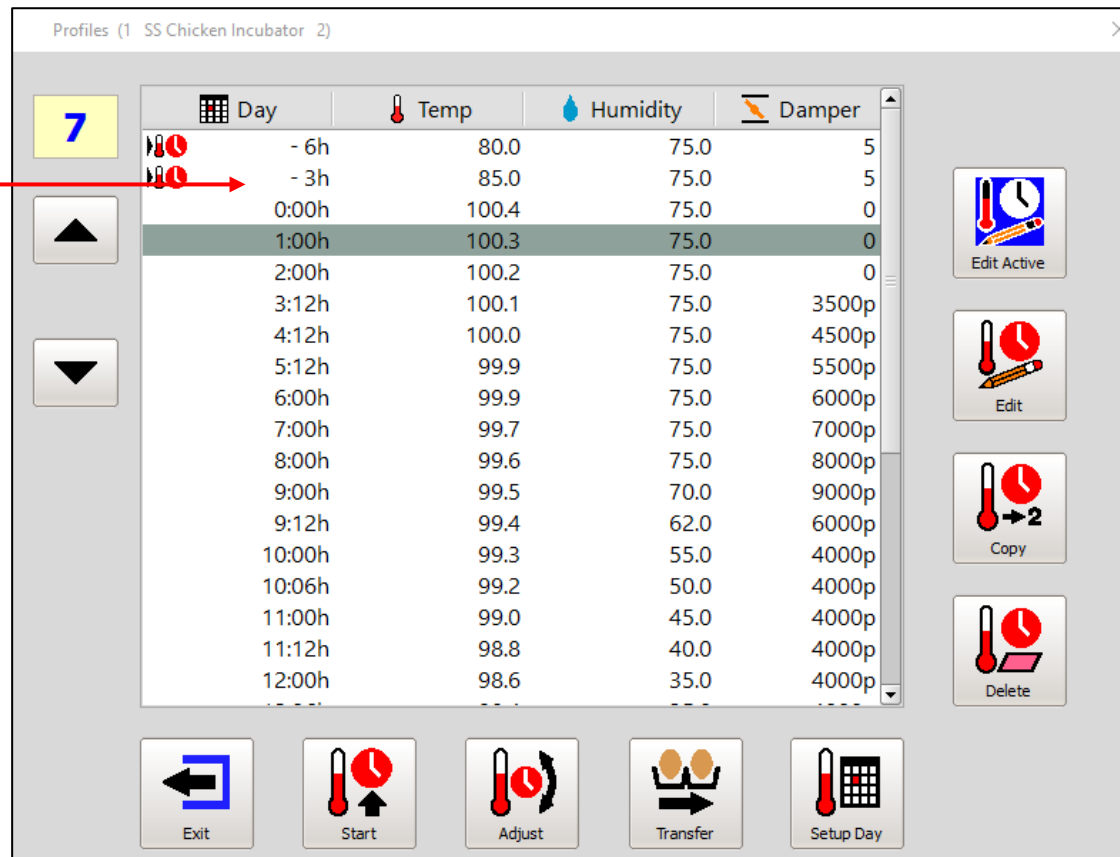
Start incubator profile: Started at preprogrammed date and time



The Profile

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

Time in Cycle



Day	Temp	Humidity	Damper
- 6h	80.0	75.0	5
- 3h	85.0	75.0	5
0:00h	100.4	75.0	0
1:00h	100.3	75.0	0
2:00h	100.2	75.0	0
3:12h	100.1	75.0	3500p
4:12h	100.0	75.0	4500p
5:12h	99.9	75.0	5500p
6:00h	99.9	75.0	6000p
7:00h	99.7	75.0	7000p
8:00h	99.6	75.0	8000p
9:00h	99.5	70.0	9000p
9:12h	99.4	62.0	6000p
10:00h	99.3	55.0	4000p
10:06h	99.2	50.0	4000p
11:00h	99.0	45.0	4000p
11:12h	98.8	40.0	4000p
12:00h	98.6	35.0	4000p

Incubator Profile Overview

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

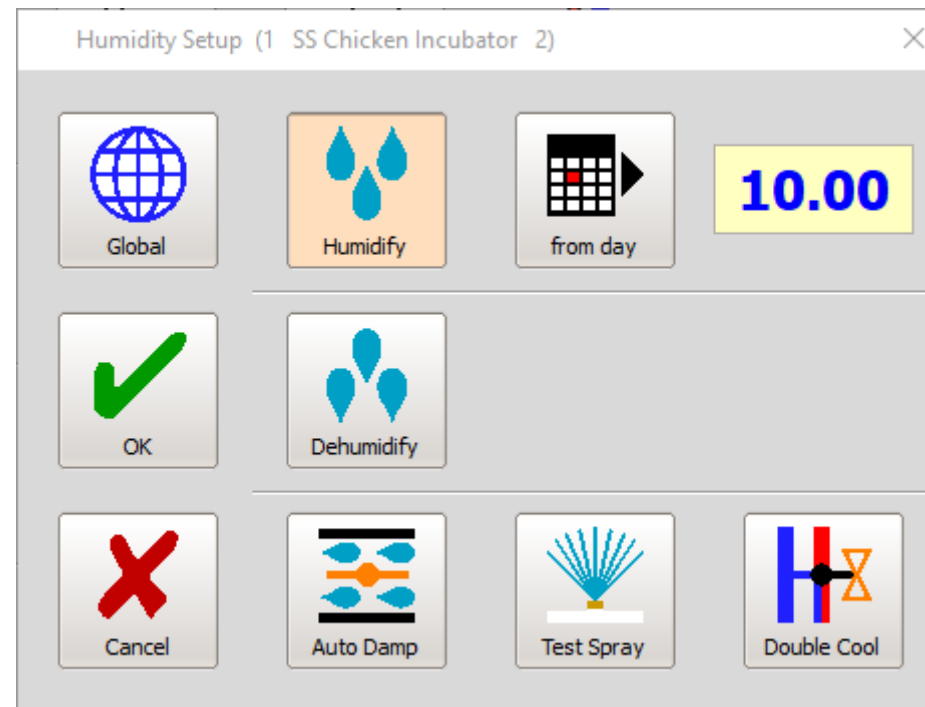
Pre-warm eggs: Prior to onset of incubation

Start incubator profile: Started at preprogrammed date and time

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



Day in Cycle Humidity Setup



Choose day to begin
Humidification



Humidity Alarm Operation

Profiles (1 SS Chicken Incubator 2)

	Day	Temp	Humidity	Damper
7	- 6h	80.0	75.0	5
	- 3h	85.0	75.0	5
	0:00h	100.4	75.0	0
	1:00h	100.3	75.0	0
	2:00h	100.2	75.0	0
	3:12h	100.1	75.0	3500p
	4:12h	100.0	75.0	4500p
	5:12h	99.9	75.0	5500p
	6:00h	99.9	75.0	6000p
	7:00h	99.7	75.0	7000p
	8:00h	99.6	75.0	8000p
	9:00h	99.5	70.0	9000p
	9:12h	99.4	62.0	6000p
	10:00h	99.3	55.0	4000p
	10:06h	99.2	50.0	4000p
	11:00h	99.0	45.0	4000p
	11:12h	98.8	40.0	4000p
	12:00h	98.6	35.0	4000p

Exit Start Adjust Transfer Setup Day

Edit Active Edit Copy Delete

0% Damper

Day in Cycle Turning Setup

The screenshot shows a 'Turn Setup' window for a 'SS Chicken Incubator'. It features a grid of time interval buttons (15, 30, 45, 60, 90, 120 minutes), a 'Stop Turn' button, a 'Stop at Day' button, a 'Calendar or Stop Day' button (displaying '19'), a 'Stop Turn Left' button, and standard 'OK', 'Cancel', and 'Global' buttons. Red arrows point from descriptive text boxes to the corresponding UI elements.

Label	UI Element
Amount of time between turns	60 minutes button
Stop Rack button	OK button
Calendar or Stop Day button	19 button
Stop Turn Left	Stop Left button

Day in Cycle Fan Setup

Standby Setting

Fan Setup (1 SS Chicken Incubator 1)

Hand Icon	0-1	1-10	10-14	14-17	17+
▲	▲	▲	▲	▲	▲
40	90	70	80	90	100
▼	▼	▼	▼	▼	▼
Cancel	OK	Global	Select Days	Delta Drive	

Day Interval

Fan Speed

Select Days Button
Fan Speed Setup screen













Time in Profile

CO2 Setup

Minimum Damper



Carbon Dioxide Setup (1 SS Chicken Incubator 1)

 Span Conc	5000	ppm	 High CO2	12000	ppm
 Min Damp	10	%	 Safety Day	9	day
 Hysteresis	100	ppm	 Damp Duty	10	%
 Cancel	 OK		 Global	 Defaults	



Safety Day





Transferring eggs to the Hatcher

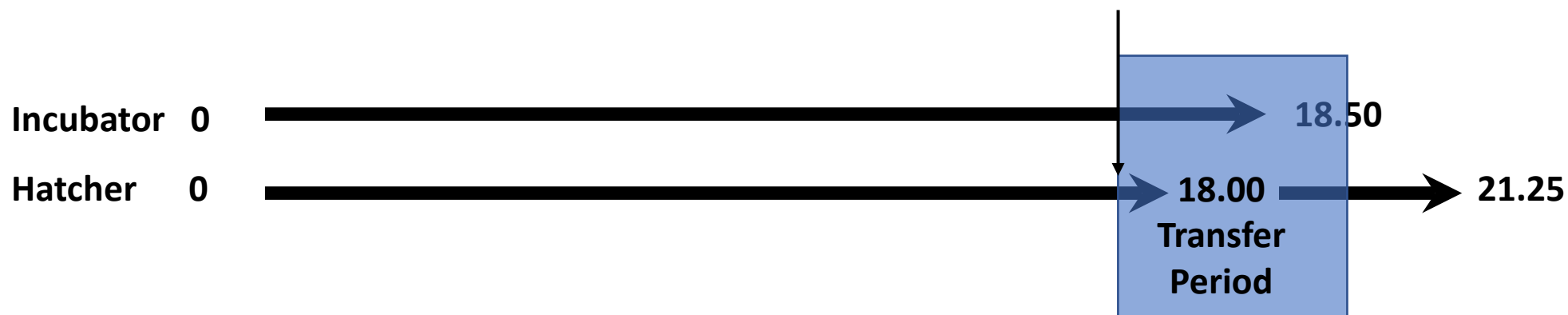
The incubation period is a single continuous process from the time the embryo starts developing through to the hatch.

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.



Hatcher Profile Start Time

Time in Cycle

Profiles (1 SS Chicken Hatcher 1)

	Day	Temp	Humidity	Damper
7	0:00h	98.0	36.0	25
	18:00h	98.0	40.0	30
	18:12h	97.9	40.0	35
	19:00h	97.8	40.0	4000p
	19:08h	97.8	40.0	3800p
	19:12h	97.8	40.0	3800p
	19:16h	97.7	40.0	3800p
	19:20h	97.6	40.0	3800p
	20:02h	97.5	43.0	3500p
	20:04h	97.4	46.0	3500p
	20:06h	97.3	49.0	3500p
	20:08h	97.2	52.0	3500p
	20:10h	97.1	54.0	3500p
	20:12h	97.0	56.0	3500p
	20:14h	96.8	58.0	3200p
	20:16h	96.6	56.0	3200p
	20:18h	96.4	54.0	3200p
	20:20h	96.2	52.0	3200p

Exit Start Adjust Transfer Setup Day

Edit Active Edit Copy Delete



Hatcher Profile

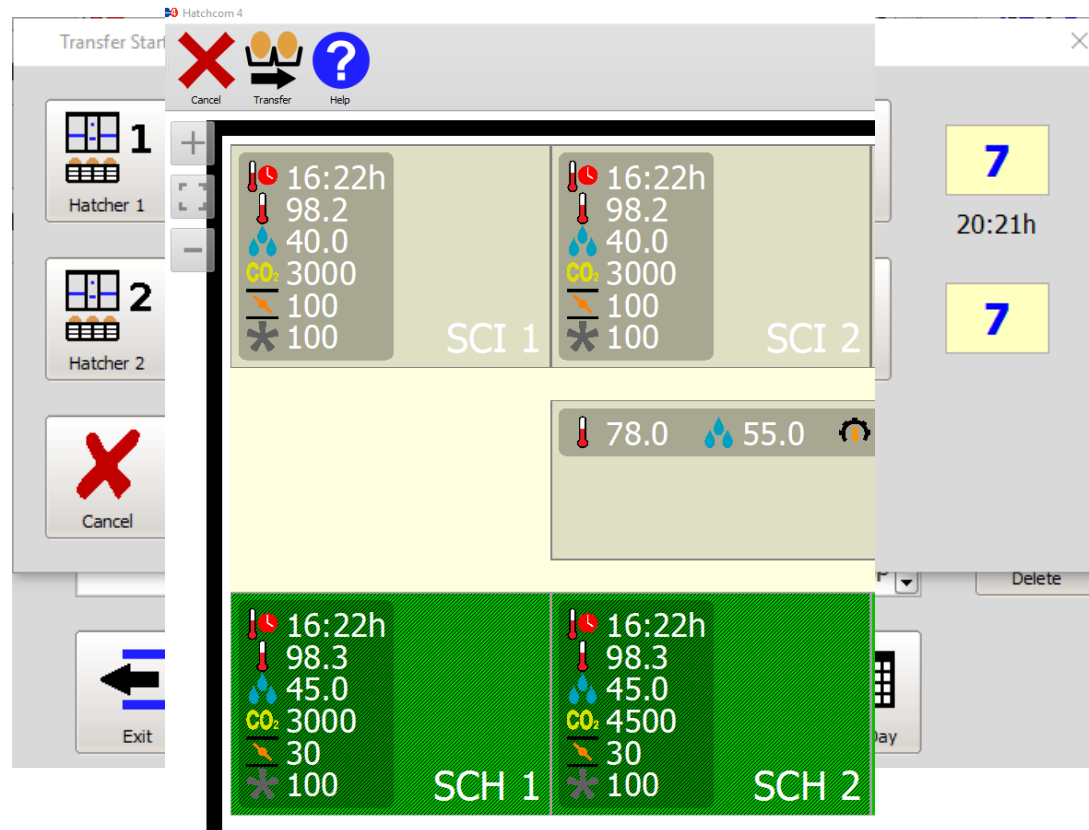
Profile 7 - Tutorial Profile (Not Recommended)			
Day	Temperature	Humidity	Damper
0.00	98.8	53.0	45
1.00	98.8	53.0	15
1.50	98.5	53.0	17
1.63	98.5	53.0	20
1.75	98.5	55.0	22
1.88	98.5	58.0	22
2.00	98.3	61.0	22
2.13	98.1	65.0	22
2.25	98.0	70.0	26
2.38	98.0	75.0	26
2.50	98.0	75.0	33
2.63	98.0	75.0	38
2.75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



Starting a Hatcher Profile

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



Hatcher Setups

Day in Cycle

Fan Setup (1 SS Chicken Hatcher 1)

	0-1	1-18	18-19	19-20	20+
▲	▲	▲	▲	▲	▲
100	100	100	70	80	90
▼	▼	▼	▼	▼	▼
Cancel	OK	Global	Select Days		

Carbon Dioxide Setup (1 SS Chicken Hatcher 1)

CO ₂ % Span Conc	5000	ppm	CO ₂ High CO ₂	6500	ppm
Min Damp	25	%	Safety Day	17	day
Hysteresis	100	ppm	Damp Duty	10	%
Cancel	OK	Global	Defaults		



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	Developmental	3	0.00	100.4	75%	0
		4	1.00	100.3	75%	0
		5	2.00	100.2	75%	0
		6	3.12	100.1	75%	0
		7	4.12	100.0	75%	0
		8	5.12	99.9	75%	2%
		9	6.00	99.8	75%	3%
		10	7.00	99.7	75%	4%
		11	8.00	99.6	75%	5%
Neutral	Maintenance	12	9.00	99.5	70%	10%
		13	9.12	99.4	62%	15%
		14	10.00	99.3	55%	20%
		15	10.06	99.2	50%	25%
		16	11.00	99.0	45%	30%
		17	11.12	98.8	40%	35%
		18	12.00	98.6	35%	40%
		19	12.06	98.4	35%	45%
		20	12.12	98.2	35%	50%
		21	13.00	98.0	35%	55%
		22	13.12	97.8	35%	60%
Exothermic	Maturity	23	14.00	97.6	35%	65%
		24	14.12	97.4	35%	70%
		25	15.00	97.2	35%	75%
		26	15.12	97.0	35%	80%
		27	16.00	96.8	30%	85%
		28	16.12	96.8	30%	90%
		29	17.00	96.8	30%	95%
		30	18.00	96.8	30%	100%



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.

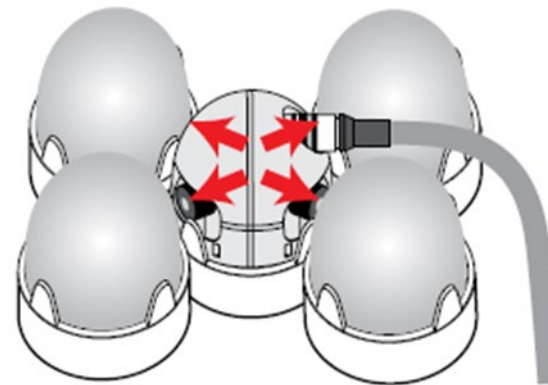
Factors that influence profile development are:

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

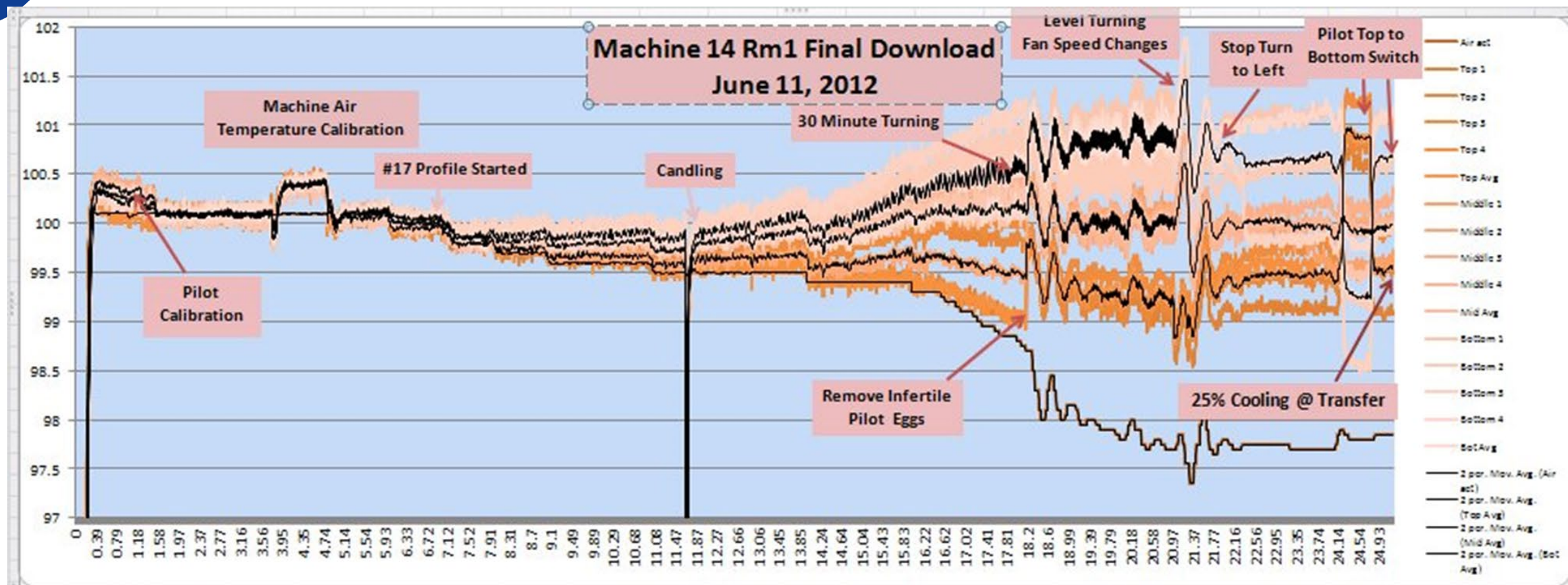


Pilot Egg System

- 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.

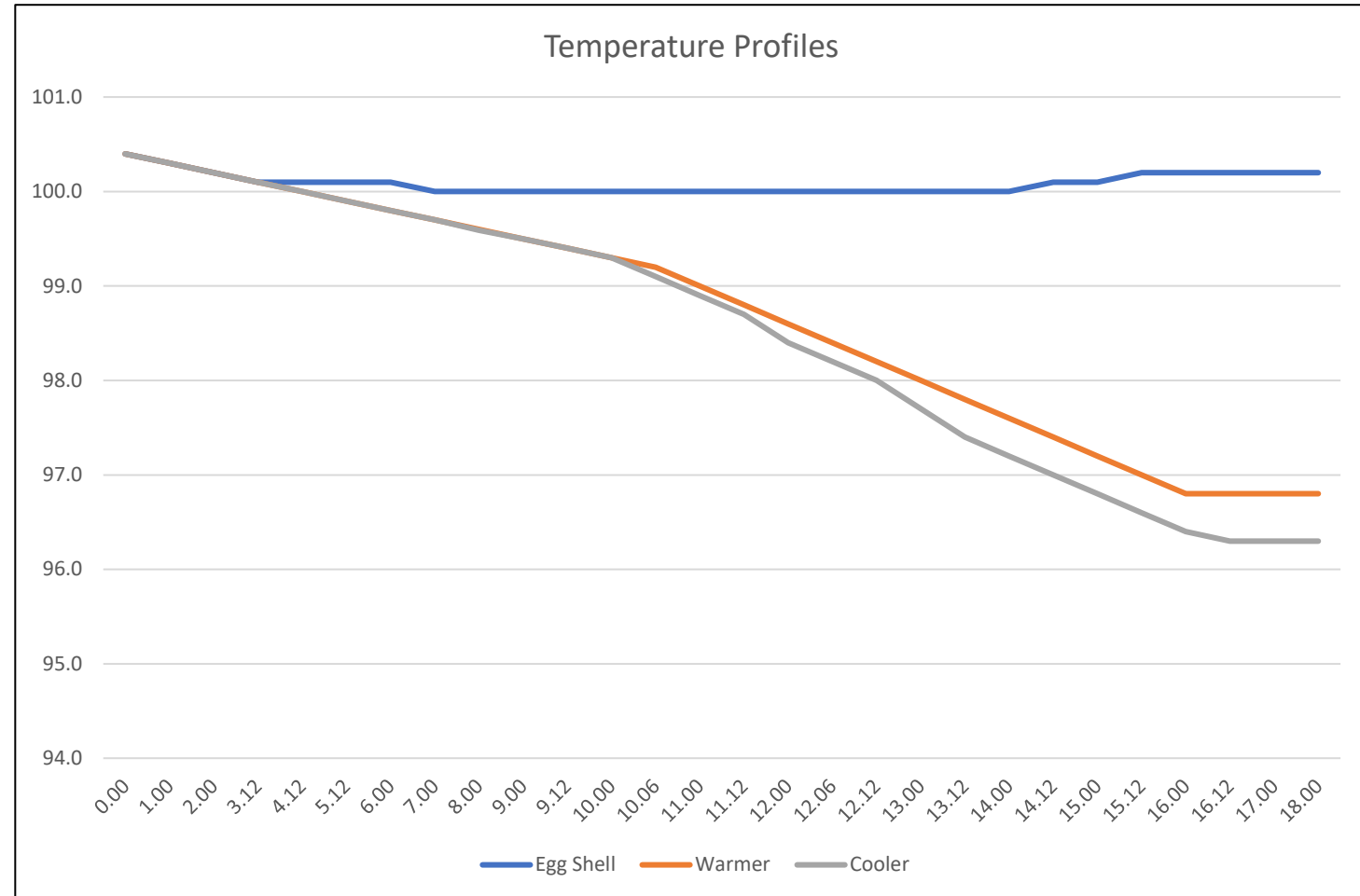


Testing with Pilots



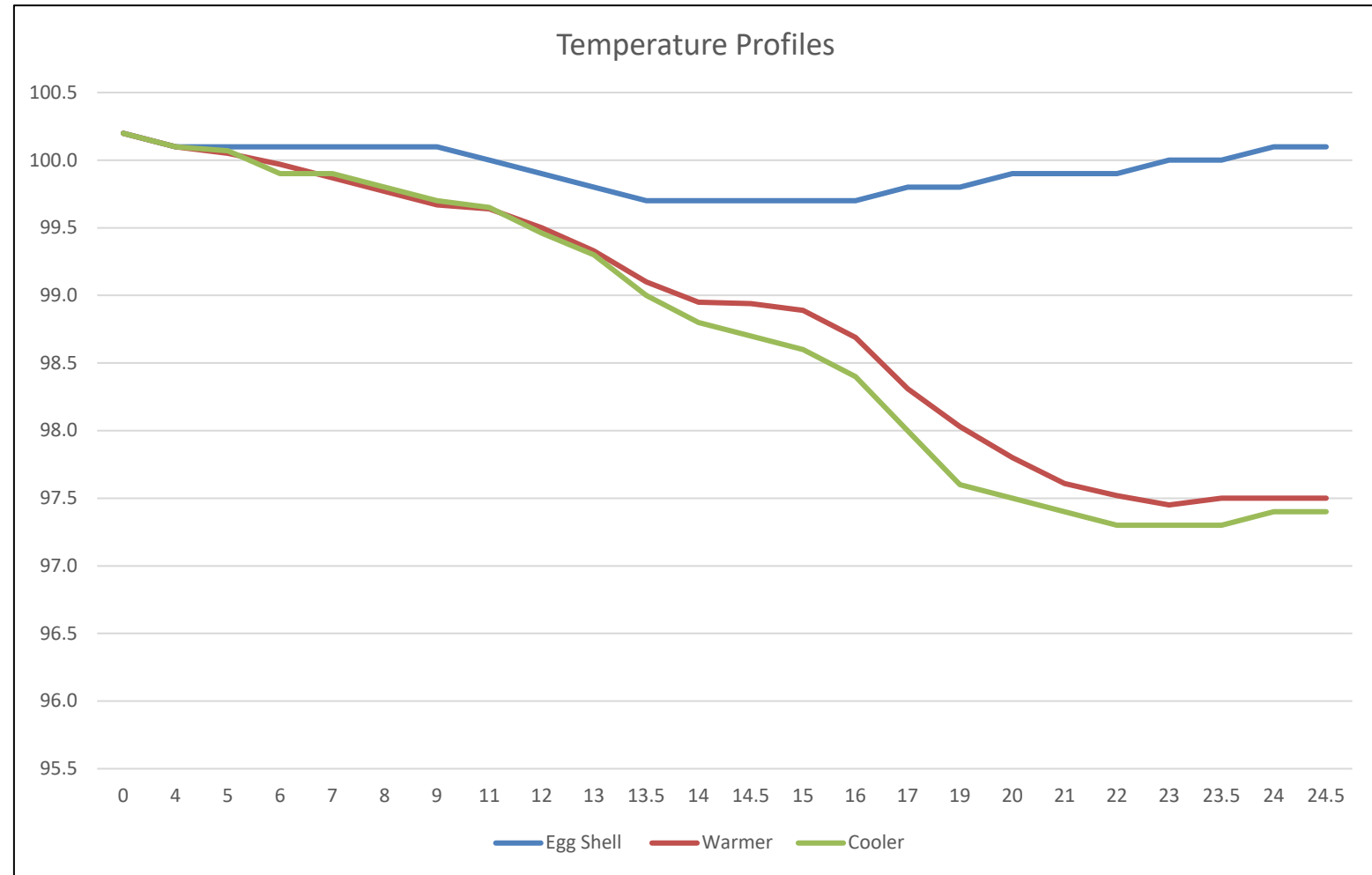
P120 Different Broiler Breeds

		Egg Shell	Warmer	Cooler
Developmental	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



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



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
		4	3.00	100.2	75	3000ppm
		5	4.00	100.2	75	4000ppm
		6	5.00	100.1	75	5000ppm
		7	6.00	100.1	75	6000ppm
		8	7.00	100.0	75	7000ppm
Neutral	Maintenance	9	8.08	99.9	72	8000ppm
		10	9.00	99.8	72	9000ppm
		11	10.00	99.7	72	9000ppm
		12	12.00	99.5	72	9000ppm
		13	13.00	99.4	72	9000ppm
		14	14.00	99.2	65	6000ppm
		15	14.50	99.0	60	5000ppm
		16	15.00	98.8	50	4000ppm
Exothermic	Maturity	17	16.16	98.6	45	4000ppm
		18	17.00	98.4	40	4000ppm
		19	18.00	98.2	40	4000ppm
		20	19.00	98.0	40	3500ppm
		21	20.00	97.8	38	3500ppm
		22	21.00	97.6	36	3500ppm
		23	22.00	97.4	35	3200ppm
		24	24.00	97.6	33	3000ppm
		25	25.00	97.7	32	2800ppm
						100

Fan Setup (1 SS Chicken Incubator 1)

0-1	1-13	13-19	19-23	23+
▲	▲	▲	▲	▲
40	90	60	80	90
▼	▼	▼	▼	▼

Turn Setup (1 SS Chicken Incubator 1)

15	30	45
60	90	120
OK	Stop Turn	Stop at Day
19		

Carbon Dioxide Setup (1 SS Chicken Incubator 1)

Span Conc	5000 ppm	High CO2	10000 ppm
Min Damp	15 %	Safety Day	14 day
Hysteresis	100 ppm	Damp Outy	10 %

P40 Profile

Incubator Profile 510 - 512 Total Incubation Time Profile 3						
	Day/Hr	Air Temperature	Humidity	Damper CO2 PPM	Damper % Opening	
PreWarm Endothermic Developmental	1	-6	80.0	75%	5	5
	2	-3	85.0	75%	5	5
	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%

Fan Setup (1 SS Chicken Incubator 1)

	0-1	1-10	10-14	14-17	17+
▲	▲	▲	▲	▲	▲
40	90	70	80	90	100
▼	▼	▼	▼	▼	▼
Cancel	OK	Global	Select Days	Delta Drive	

Carbon Dioxide Setup (1 SS Chicken Incubator 1)

CO ₂ %	5000 ppm	CO ₂ High CO ₂	12000 ppm
Span Conc			
Min Damp	10 %	Safety Day	9 day
Hysteresis	100 ppm	Damp Duty	10 %
Cancel	OK	Global	Defaults

Turn Setup (1 SS Chicken Incubator 1)

minutes	15	30	45
	60	90	120
OK	STOP Stop Turn	Stop at Day	14
Cancel	Global	STOP Stop Left	

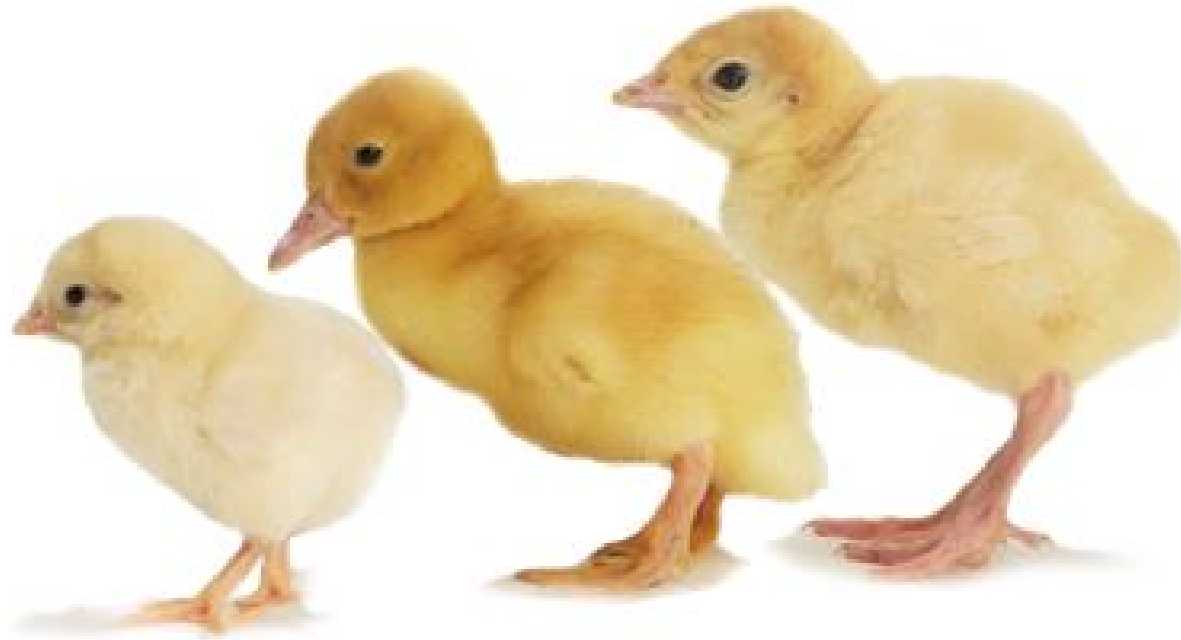


Profiles

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

