



INTERNATIONAL

*The key to your profit!*



# Housing preparation

# The importance of first day

Yeah! Sorry about the temperature. We haven't heat up your house

Feed and water? Yep, you can find something somewhere.

Just lay your eggs and go !!. We don't care about you!!

Hi Everyone !! I have just arrive to your farm.



And it is a little dirty. Maybe you can clean up yourself

Your room is crowded? Sorry your highness !!

# Preparing the welcome

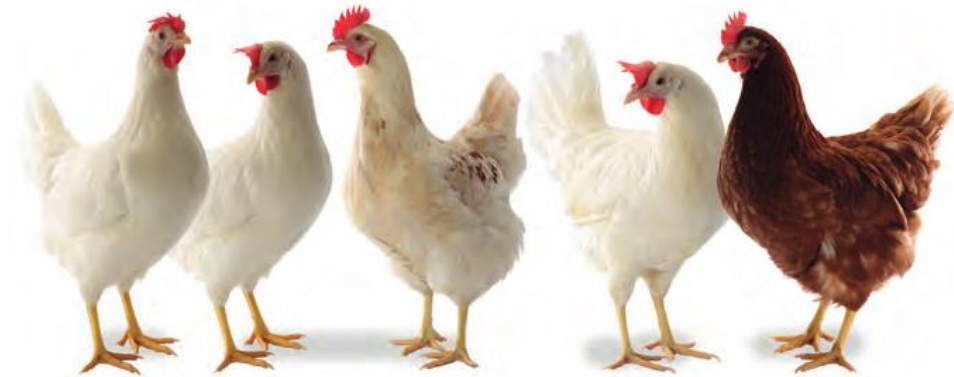


- C+D procedures
- Stocking density
- Pre heating the house
- Brooding Lay out



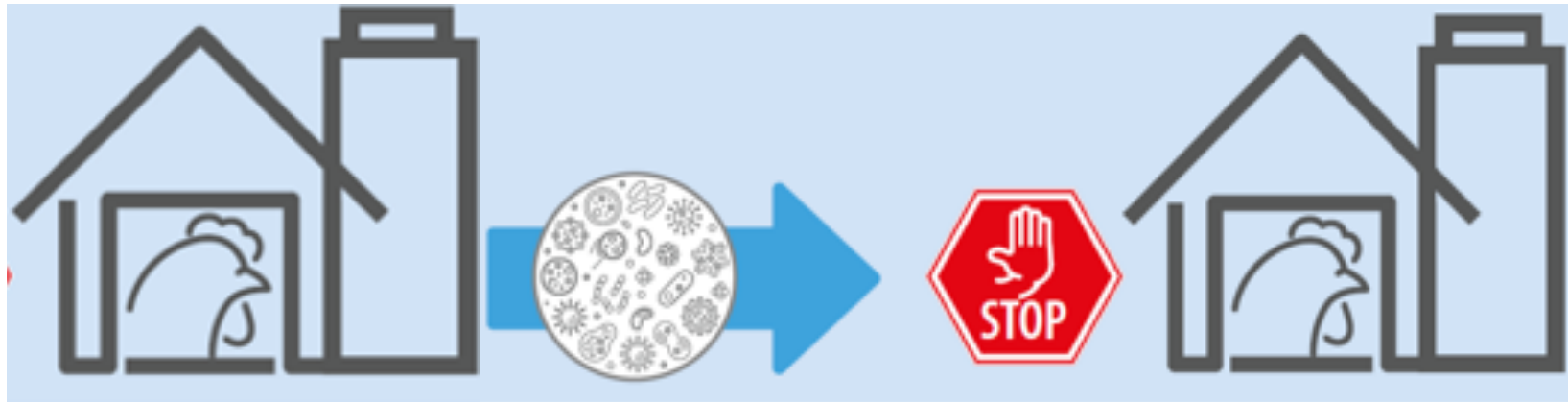
INTERNATIONAL

*The key to your profit!*



# Clean & Disinfection procedures

# Clean & Disinfection procedures



Avoid the transmission of diseases from one flock of birds to the next



# Clean & Disinfection procedures

## LONGEVITY OF DISEASE-CAUSING ORGANISMS

Disease	Lifespan away from Birds
Infectious bursal disease	Month
Coccidiosis	Month
Fowl Cholera	Weeks
Coryza	Hour to Days
Mareks Disease	Month
Newcastle Disease	Days to weeks
Mycoplasmosis	Hours to days
Salmonellosis	Weeks
Avian Tuberculosis	Years
Avian Influenza	Weeks to Month
Infectious Bronchitis	Weeks to Month

(Bell and Weaver; 2002)

# Clean & Disinfection procedures

## STEP 1

Preparation



## STEP 2

Dry Cleaning



## STEP 3

Wet Cleaning



## STEP 4

Disinfection

Temperature 	Chemical Substance 
Organic Material 	Contact Time 

## STEP 5

Fumigation



## STEP 6

Sampling



# Step 1: Preparation



## OBJETIVE

Remove all equipment or waste (dead birds, feed, eggs, manure, etc.) left in the house

In the first 24 hours after depopulating the henhouse



Strongly disinsect the house

In the first 24 hours after removing the feed



Place rodent poison



## Step 2: Dry cleaning



### OBJETIVE

Remove all dust and dry organic material from the house



Brooms



Vacuum



compressed air

# Step 3: Wet cleaning



## OBJETIVE

Remove all remaining organic material and grease



For better result, use hot water & detergent

# Step 3: Wet cleaning

FOAM DETERGENT



ACID DETERGENT

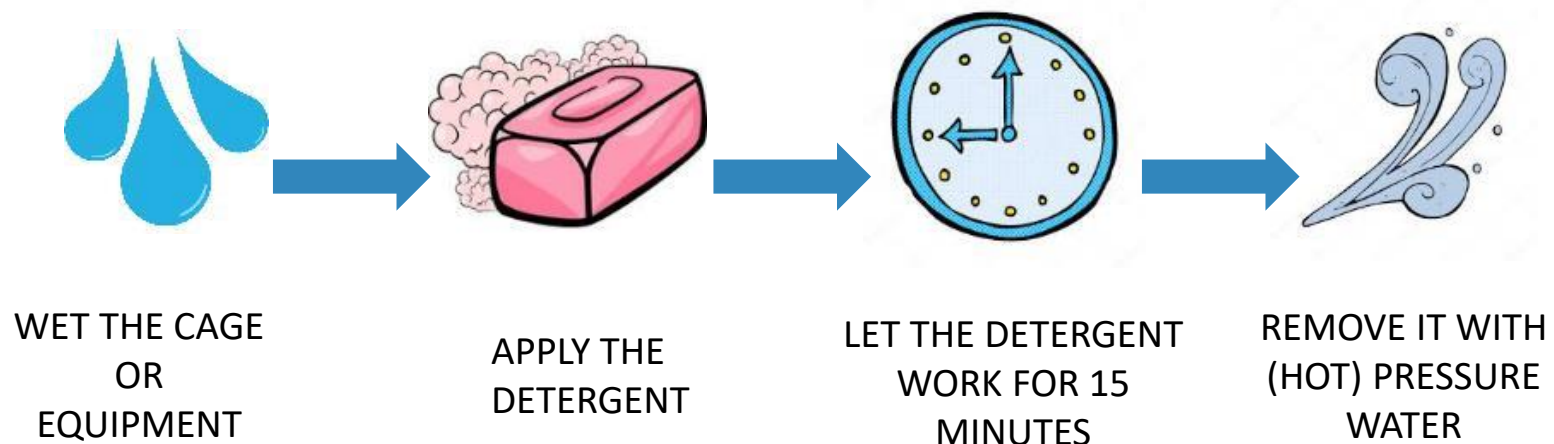
Effective at removing any mineral deposits or oxidation on surfaces

BASIC DETERGENT

Effective at removing oils, fats, greases, proteins

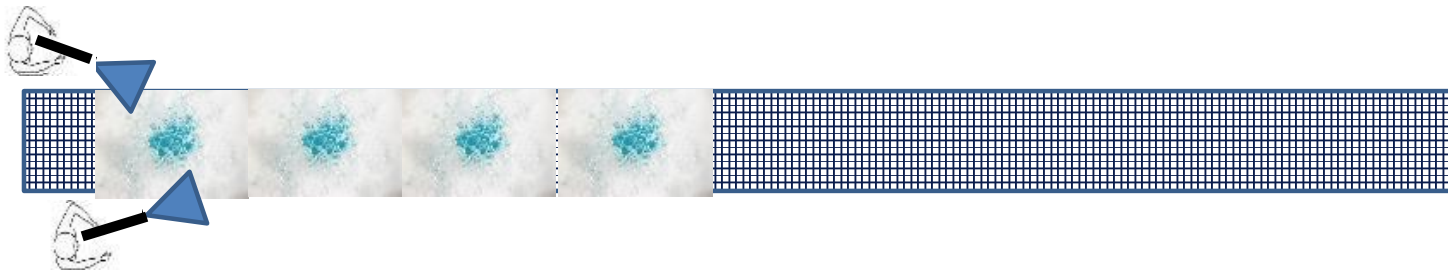
# Step 3: Wet cleaning

## DETERGENT USE



# Step 3: Wet cleaning

## FOAMING PROCEDURE

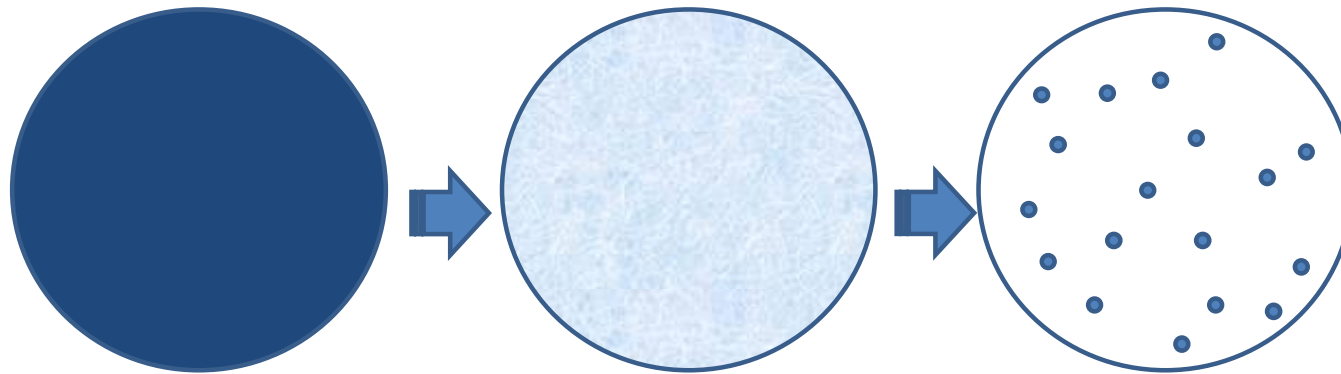


# Step 4: Disinfection



## OBJECTIVE

Kill all remaining pathogens that survived the previous steps.



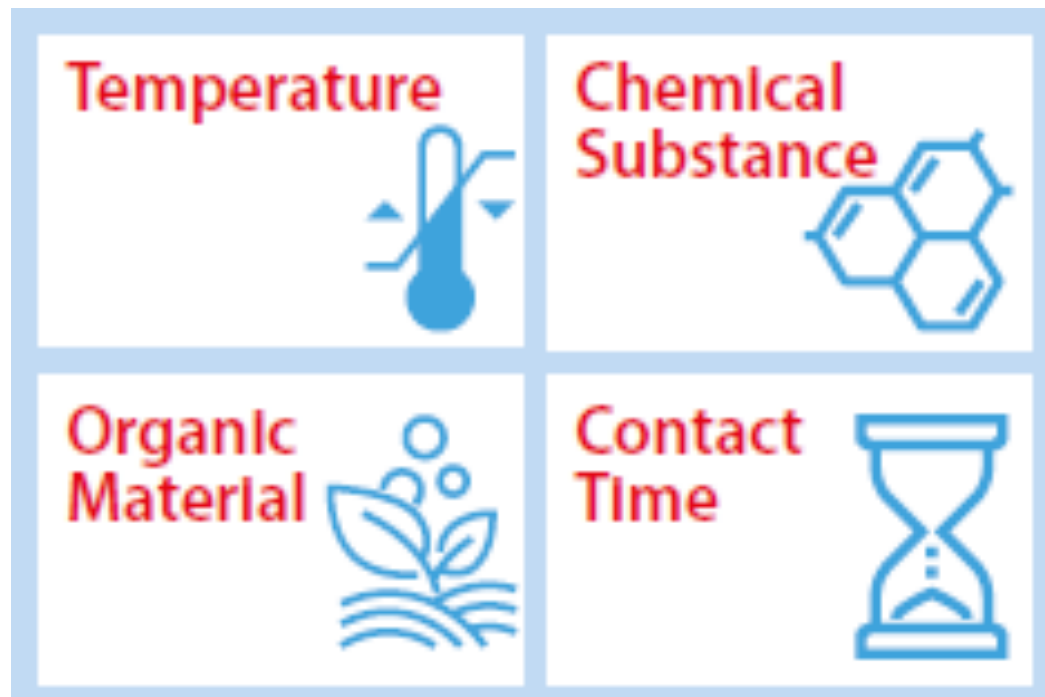
**Before cleaning**  
1.000.000.000  
Bacteria / cm<sup>2</sup>

**After cleaning**  
1.000.000  
Bacteria / cm<sup>2</sup>

**After disinfection**  
< 1.000  
Bacteria / cm<sup>2</sup>

# Step 4: Disinfection

## MAIN FACTOR AFFECTING DISINFECTION



# Step 4: Disinfection

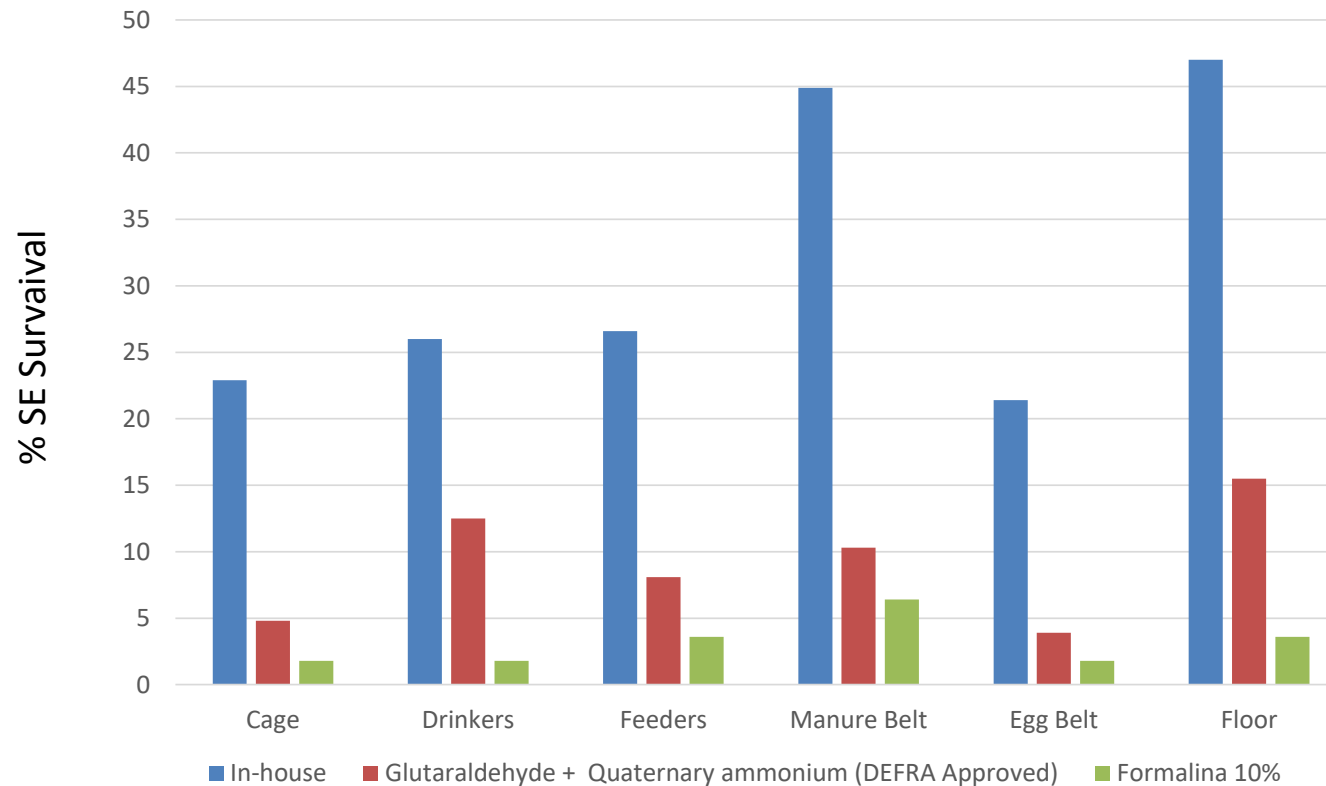
MAIN DISINFECTANS								
Chemical disinfectant	Mycoplasma	Gram + Bacteria	Gram - Bacteria	Enveloped virus	Non-enveloped virus	Fungal spores	Coccidia	Characteristic
Aldehydes	++	++	++	++	++	+	-	Efficacy reduced by organic material, soap and hard water. Irritative
Alkalis	++	+	+	+	+-	+	+	Corrosive, irritative
Biguanides	++	++	++	+-	-	-	-	Ph dependent, inactivated by soaps
Chlorine Compounds	++	++	+	+	+-	+	-	Inactivated by sunlight and soap, corrosive, irritative
Oxidant agents	++	+	+	+	+-	+-	-	Corrosive
Phenolic Compounds	++	+	++	+-	-	+	+-	Irritative
Quaternary Ammonium Compounds	+	+	+	+-	-	+-	-	Inactivated by organic material, soap and hard water

First option: Aldehyde + Quaternary Ammonium



# Step 4: Disinfection

Survival of Salmonella enteritidis after disinfection process in commercial layer farms



Fuente: Carrique-Mas 2008

# Step 4: Disinfection

## DISINFECTANTS DILUTION RECOMMENDATION

Virus	Disease	Dilution		
		EN	AOAC (EPA)	Other
<i>African Swine Fever virus</i>	African Swine Fever			ASFV 2011(0,50%)
<i>Avian Infectious Laryngotracheitis virus</i>	Infectious laryngotracheitis		AOAC (0,25%)	
<i>Aujeszky's disease virus</i>	Aujeszky's disease/ pseudorabies		AOAC (0,25%)	
<i>Avian Influenza H9N2</i>	Avian influenza (bird flu or fowl pest) (zoonosis)		AOAC (0,25%)	
<i>Avian Influenza H5N1</i>	Avian influenza type H5N1 (zoonosis)		AOAC (0,25%)	
<i>Bovine enterovirus</i>	Bovine enterovirus (abortion, infertility, diarrhea, respiratory infections)	EN 14675 (0,10%)		
<i>Bovine viral diarrhea (BVD)</i>	Bovine viral diarrhea (BVD)	EN 14675 (1,00%)		

# Step 4: Disinfection

## ADVICES ON DESINFECTANT APPLICATION



Use enough disinfectant  
dissolution:  
25 ml / bird for the cages  
300 ml / m<sup>2</sup> for surfaces



Use disinfectant in foam

# Step 5: Fumigation

## OBJETIVE

Fumigate after liquid disinfection has been completed and the equipment has been installed again.



It cannot replace liquid disinfection

# Step 6: Sampling

## OBJETIVE

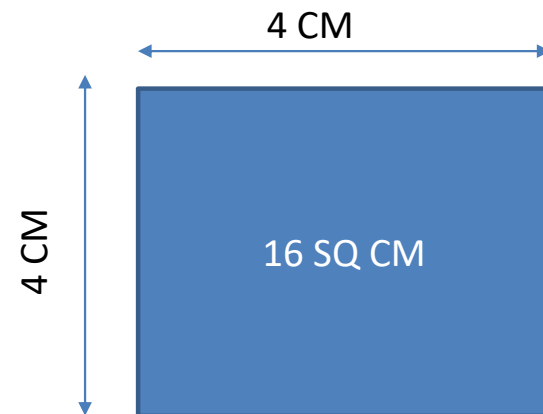
Check if the C&D procedures has been successful before to house the new flock

Place of sampling	Salmonella spp.	Enterobacteria in 16 sq cm	
	Unacceptable	Good	Unacceptable
Wall-floor junction Drinkers Feeders Manure bell Eggs belt Fans	<b>Presence</b>	<b>&lt; 5</b>	<b>&gt; 10</b>

If results are unacceptable, take corrective measures.

# Step 6: Sampling

SWAB FOR ENTEROBACTERIA



# Step 6: Sampling

## STERILE GAUZE SAMPLING FOR SALMONELLA



Fotos: MAGRAMA



INTERNATIONAL

*The key to your profit!*



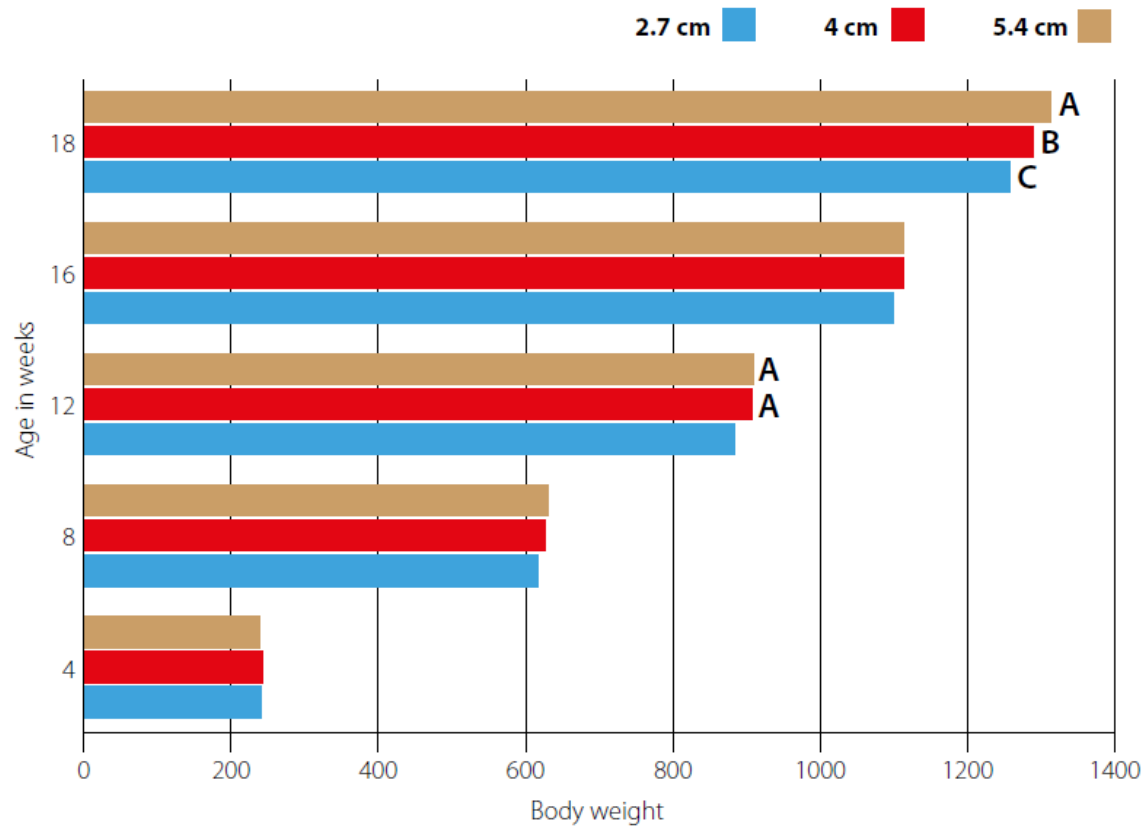
# Stocking density



# Stocking density in rearing

Age	Floor space		Feeder space		Drinker Space	
	Cage	Floor	Cage	Floor	Cage	Floor
0 – 3 weeks	140 cm <sup>2</sup> /bird	21 birds/m <sup>2</sup>	2.5 cm/bird	4 cm/bird 60 birds/pan	1.25 trough cm/bird 16 birds/nipple	1.4 trough cm/bird 16 birds/nipple 100 birds/fontain
3 – 16 weeks	285 cm <sup>2</sup> /bird	16 birds/m <sup>2</sup>	5 cm/bird	8 cm/bird 30 birds/pan	2.5 trough cm/bird 8 birds/nipple	2.5 trough cm/bird 8 birds/nipple 75 birds/fontain

# Effect of feeder space during rearing



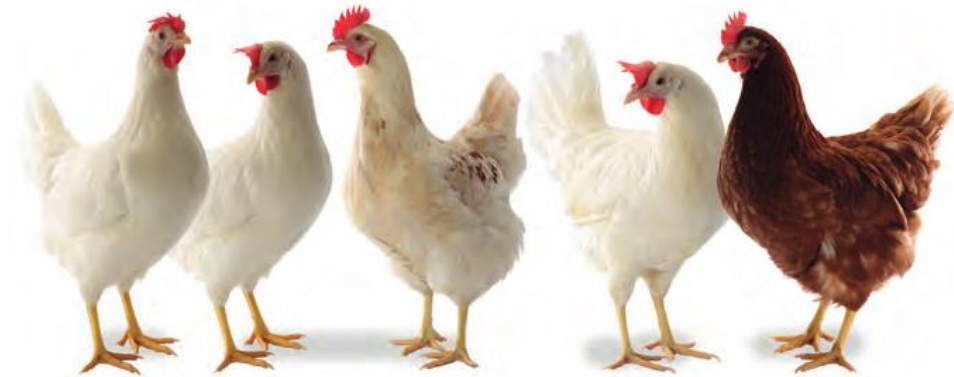
# Stocking density in rearing

Equipment	Requirements*
<b>Stocking Density</b>	475 – 750 cm <sup>2</sup> /hen
<b>Drinkers</b> Round drinkers Linear drinkers Nipple drinkers	1 drinker (Ø 46 cm) for 125 hens 1 running meter for 80 – 100 hens 1 nipple for 6 – 8 hens (access to 2 nipples/hen)
<b>Feeders</b> Round feeder Chain feeder	1 feeder (Ø 40 cm) for 25 hens 10 – 15 cm/hen



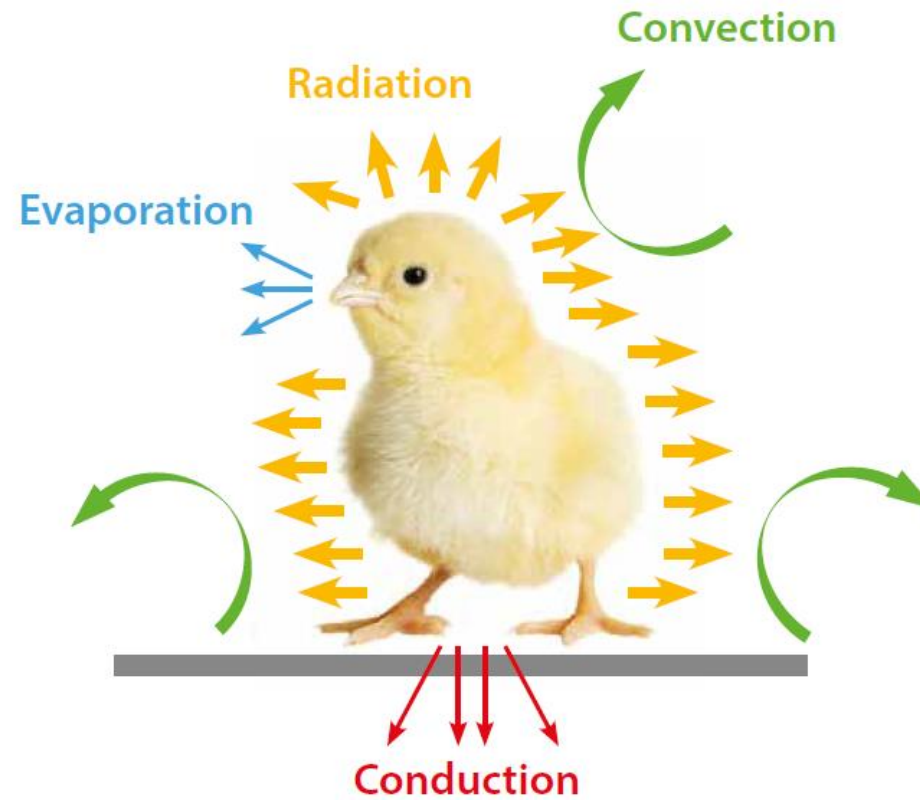
INTERNATIONAL

*The key to your profit!*



## House pre-heating

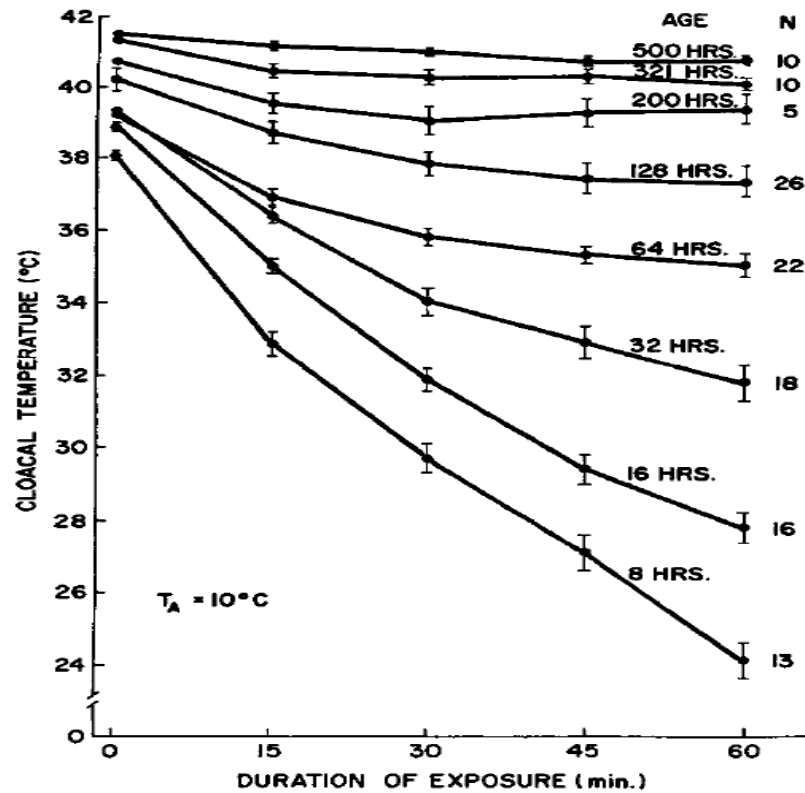
# Poultry therm-regulation



In the first week of life, the body surface-to-volume ratio is relatively high

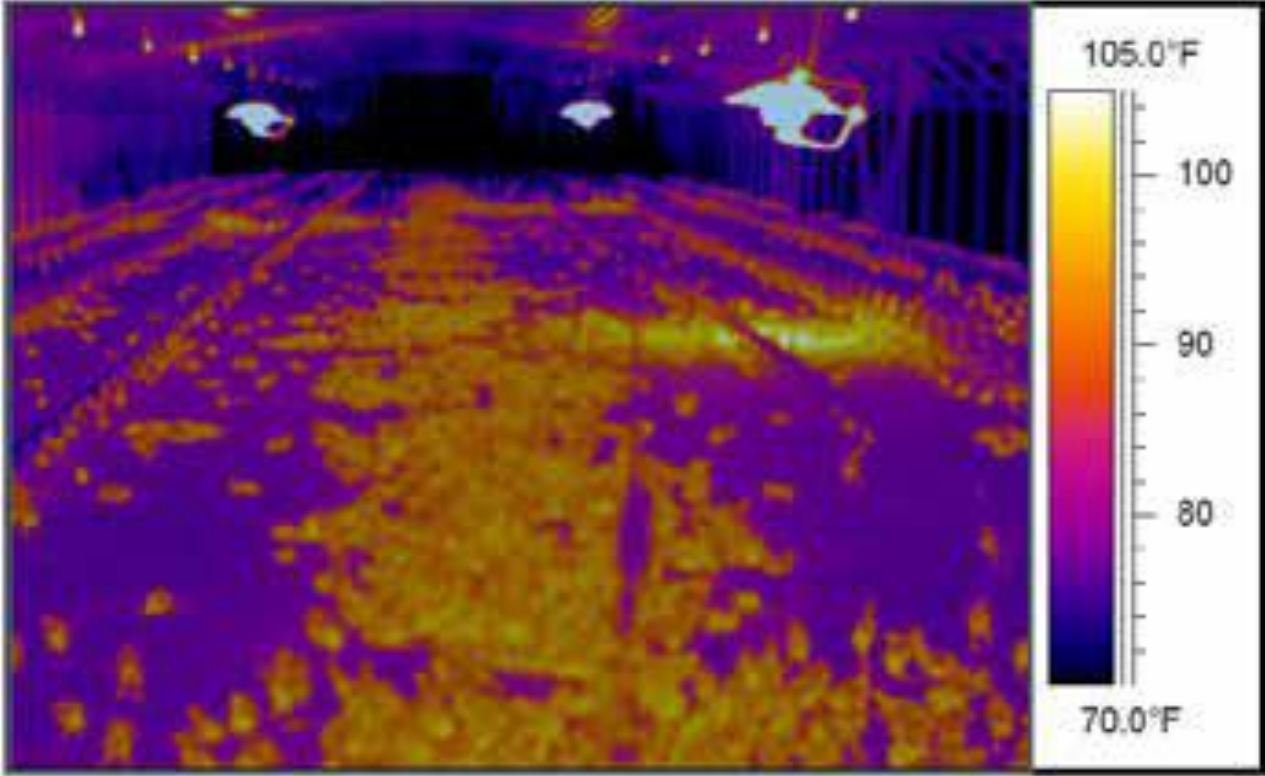
# Poultry therm-regulation

Cloacal temperature changes for chicks of 8 ages exposed to 10° C



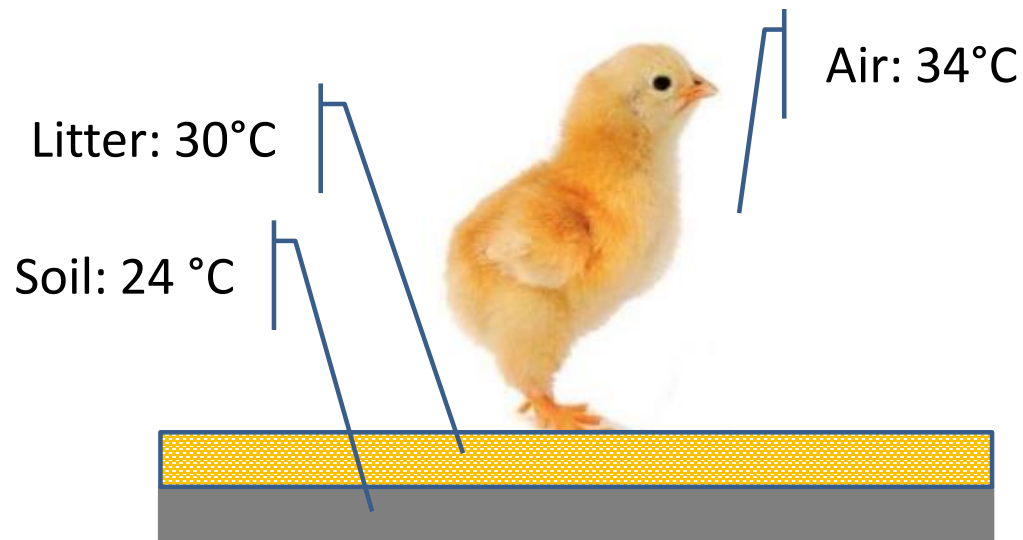
David 1970

# Pre heating the house



# Pre heating the house

Pre-heat the house before the chicks arrive for 24 hours in warm weather and 48 hours in cold weather.



Check it !!





INTERNATIONAL

*The key to your profit!*



## Brooding lay out

# Cage brooding layout



# Cage brooding layout

Avoid  
paper  
under  
nipple line



# Cage brooding layout

No easy  
access to  
this drinker



# Cage brooding layout



Reduce the water pressure in the drinking system to create a hanging drop at chick eye level.

# Cage brooding layout



Use 360-activated nipples are preferable in rearing houses. If not available, use cups systems during the first 5 – 7 days.

# Floor brooding layout



THANK YOU **FOR** YOUR INTEREST



Any  
question?