



# **Welcome**

**Scott Martin**  
**World Technical Support**  
**Cobb-Vantress**



# **Effective Hatchery Management**

## **高效孵化管理**

**Scott Martin**  
**World Technical Support**  
**Cobb-Vantress**



# Maintenance 维修

Preventive 预防性维修

Predictive 预测性维修

Reactive 应对性维修

# Hatchery Ventilation孵化通风

## The Proper Set-up HVAC 空调的正确设置



<u>AREAS</u> <u>方位</u>	<u>CFM/1000</u> <u>立方英尺/分钟</u>	<u>TEMP</u> <u>温度</u>	<u>RELATIVE HUMIDITY</u> <u>相对湿度</u>	<u>AREA PRESSURE</u> <u>环境压力</u>
Egg Receiving & Holding 种蛋接收及存储区	1	65-68°	60-75%	Neutral To + .01
Setter Bays 入孵仓	4-5	76-80°	55-62%	+ .01 To + .015
Hatcher Bays 孵化仓	12-16	76-80°	55-62%	+ .01 To + .015
Chick Holding 鸡苗存储区	12-16	72-75°	65-70%	Neutral To Neg .01
Chick Pull & Wash 出雏间	12-16	72-75°	65-70%	Neg .010 To Neg .015
Clean Equipment Room 清洁设备仓库	0	72-75 °	N/A	Positive
Hallways 大厅	0	75°	N/A	Neutral





**Data Logger**  
数据测量仪器





# Magnehelic Gauge 压差表





**Rectal  
Temperatures**  
直肠体温





**Chiller Water  
Temperature  
At  
Incubator  
孵化器内  
冷却水温度**





**Damper Adjustments**  
**挡板调节**



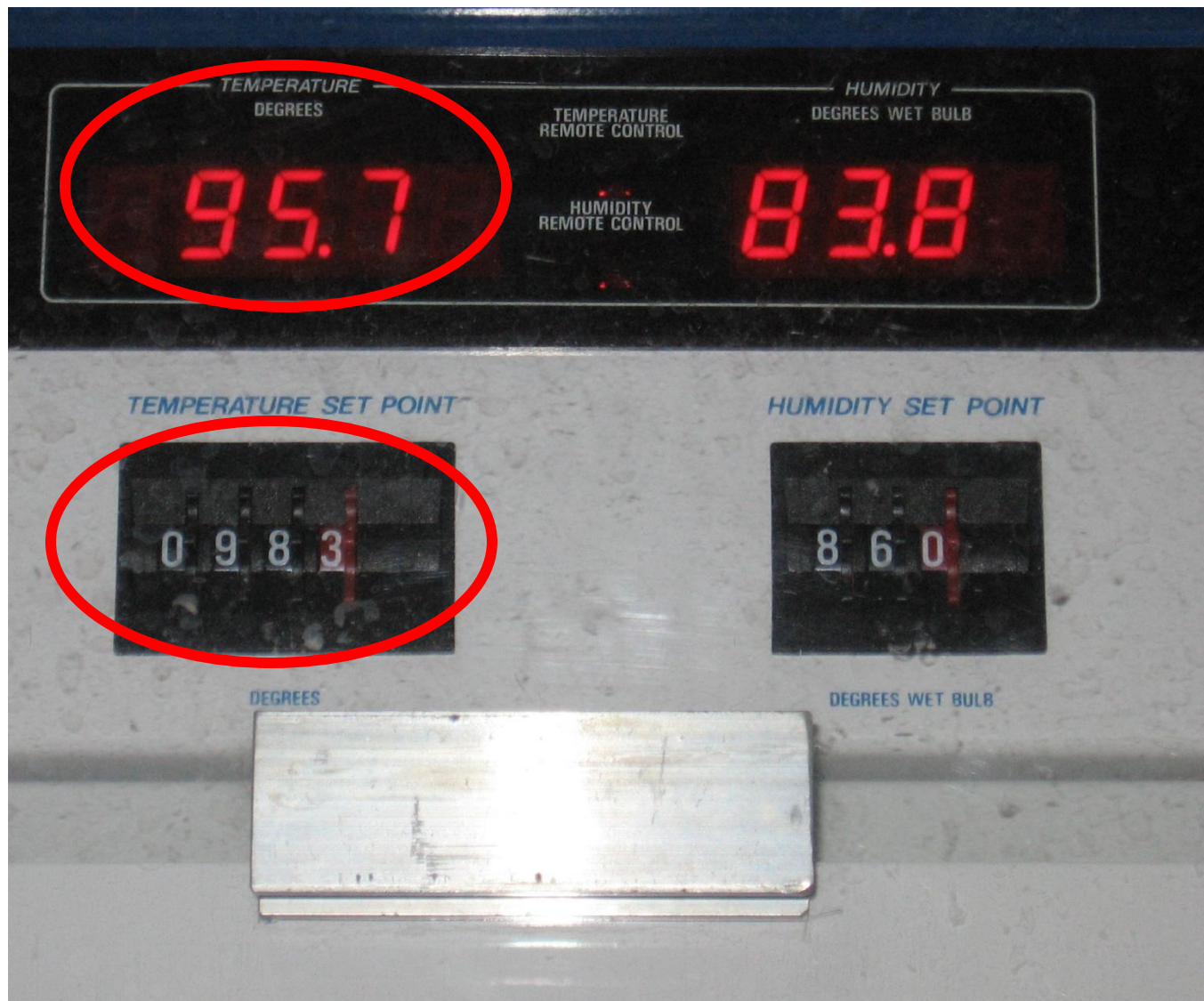








## 温度管理







**Nozzle  
Adjustment  
喷嘴调整**

19 9 2006



# Manage Curtains

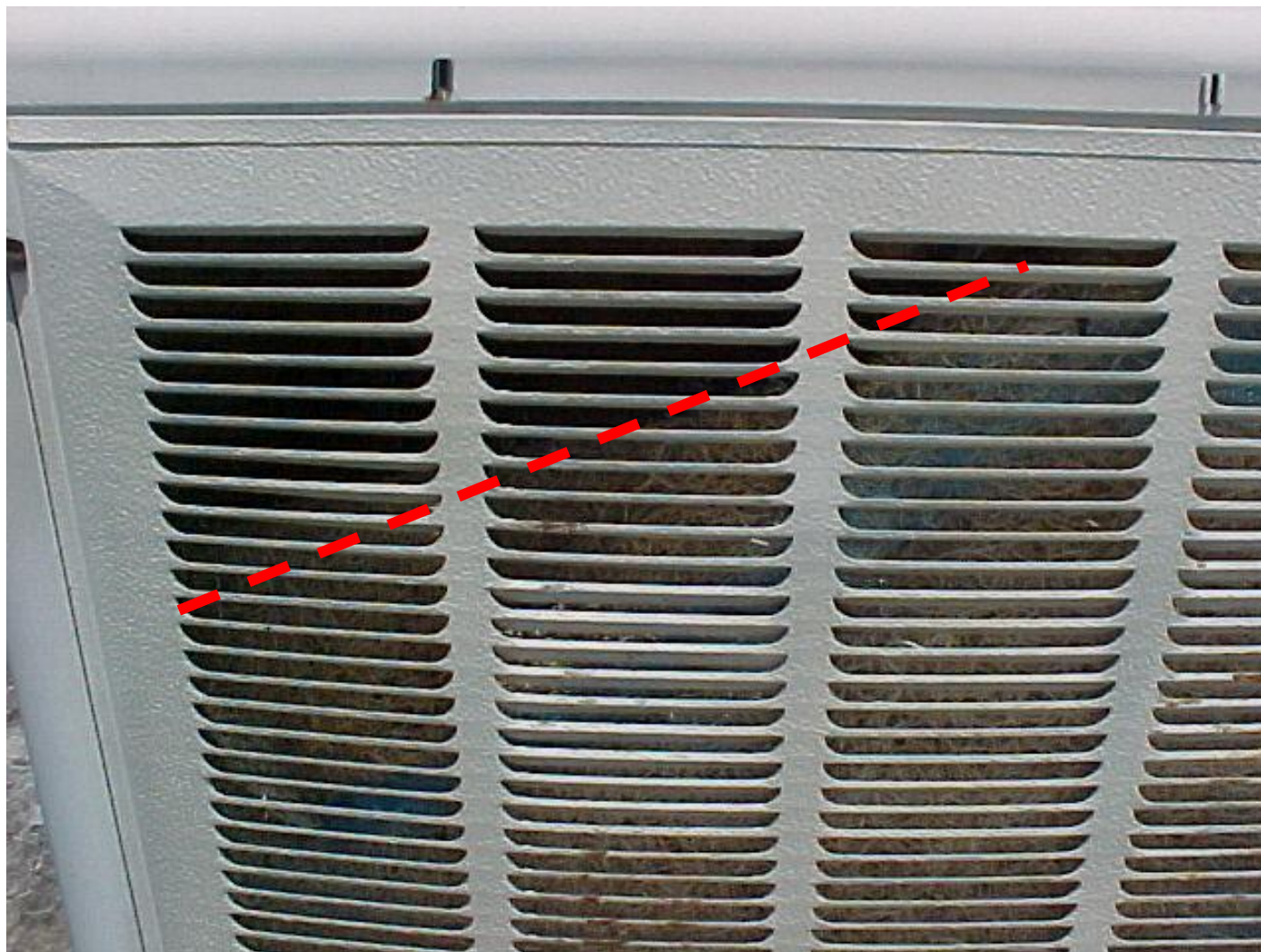
门帘管理

# City Water 市政供水





# Pad Not Sealed 湿帘垫不密封



# Cooling Coil (Bad) 冷却悬管（差）





# Cooling Coil (Dirty) 冷却悬管 (脏)





# Cooling Coil (Clean)

## 冷却悬管（干净）





# Cooling Coil (Back) (Correct Flow)

## 冷却悬管（背部）（水流正确）





# Cooling Coil (Clean)

冷却悬管（干净）





**Fresh  
Air Filters**  
新鲜空气过滤器

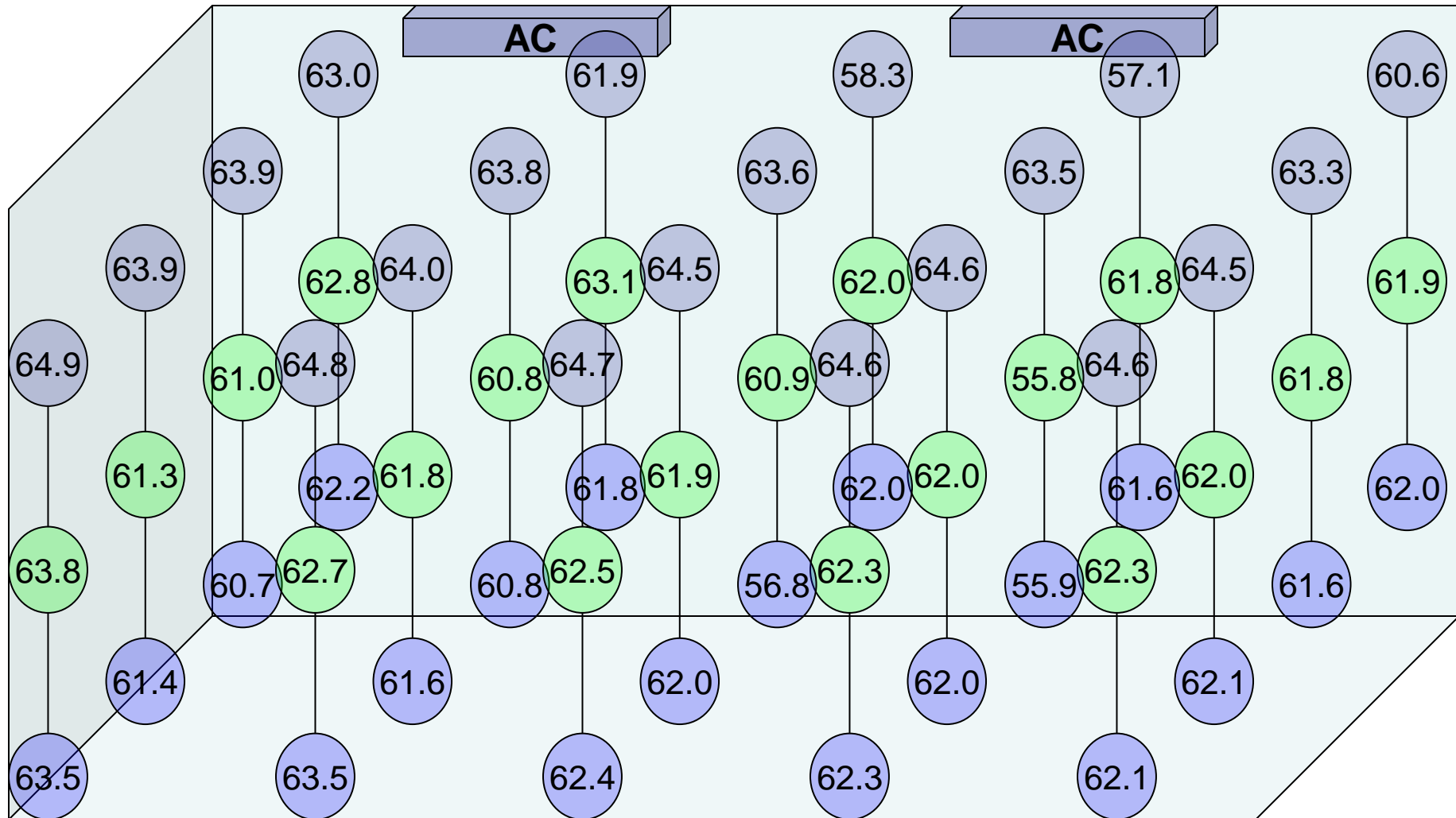


# Solid Filter (Return)

## 固体颗粒过滤器

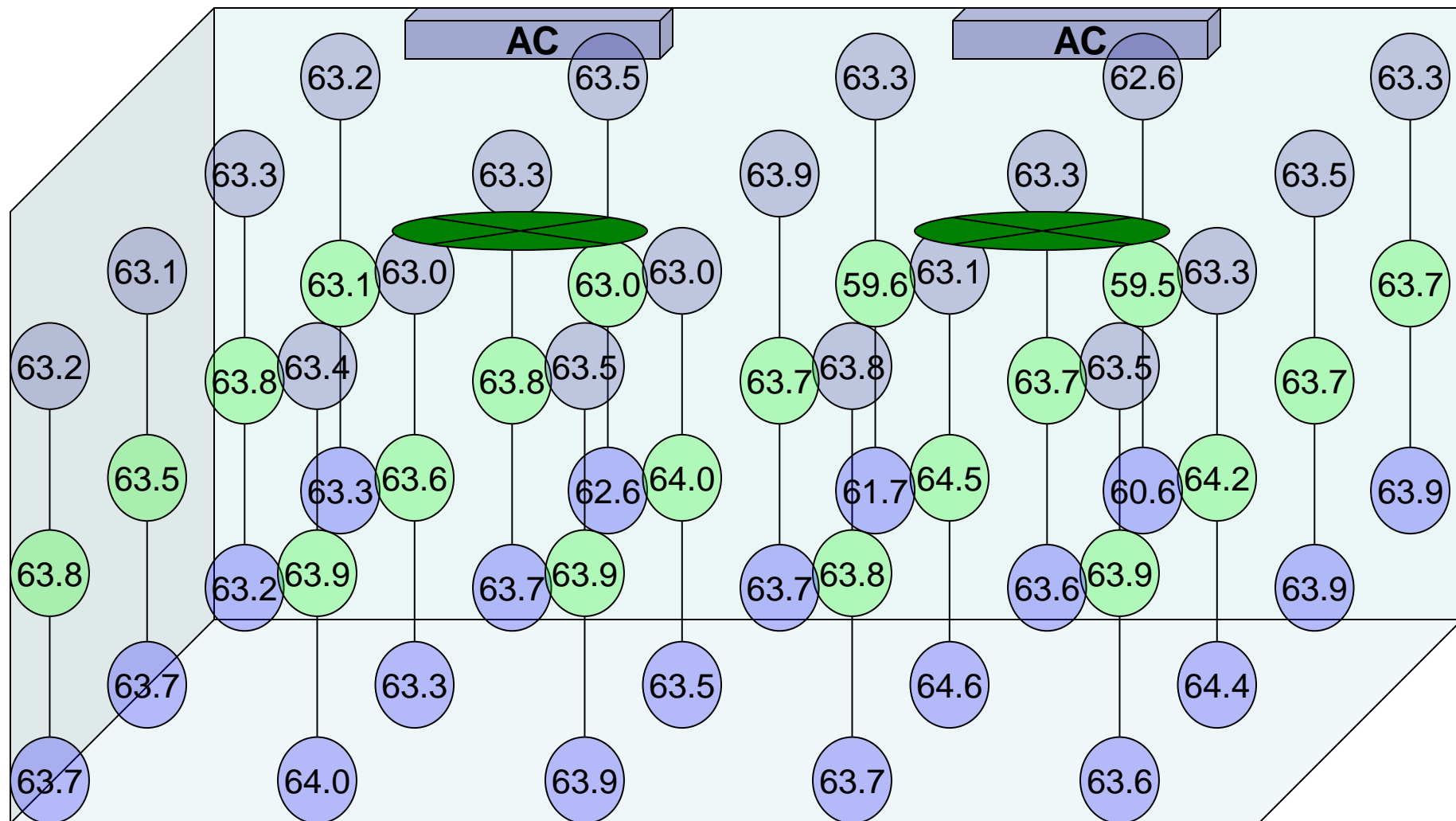


# Holding room temperature without fan 室内温度保持（无风扇）



# Holding room temperature within fan

## 室内温度保持（有风扇）





# Preventative Maintenance

## 预防维修

---



- **Calibrate machines and rooms**

机器及室内参数设置校准

- **Monitor settings** 孵化窗数据设置
- **Check embryo temperatures** 检查胚胎温度
- **Check moisture loss** 检查水分损耗
- **Check pipping** 检查啄壳
- **Check chick temperatures** 检查雏鸡温度
- **Confirm: what you think you have is what you have**

确认：你觉得你应该做的确实做到



**Embryo Diagnosis**

胚胎诊断



# Infertile or Fertile ?

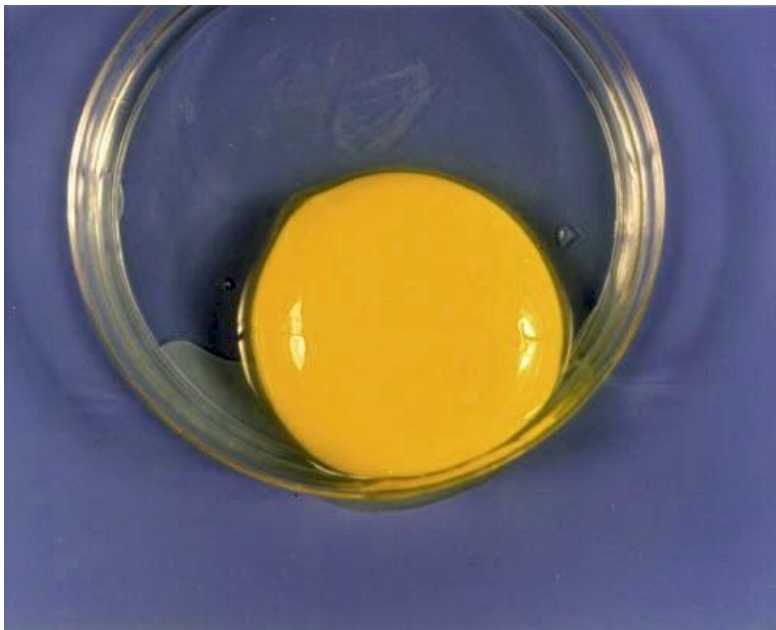
# 无精或未受精？

# Infertile or Fertile

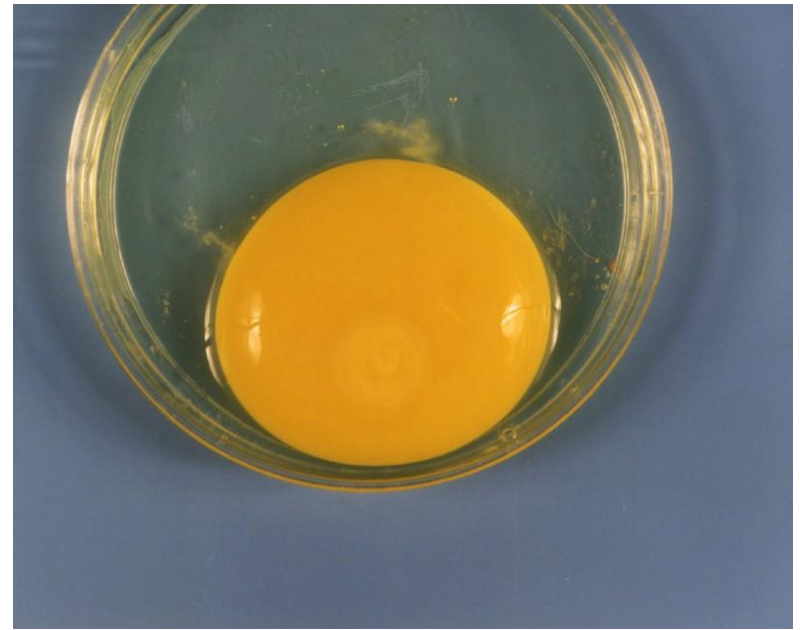
## 无精或受精



**Infertile 无精蛋**



**Fertile 受精蛋**

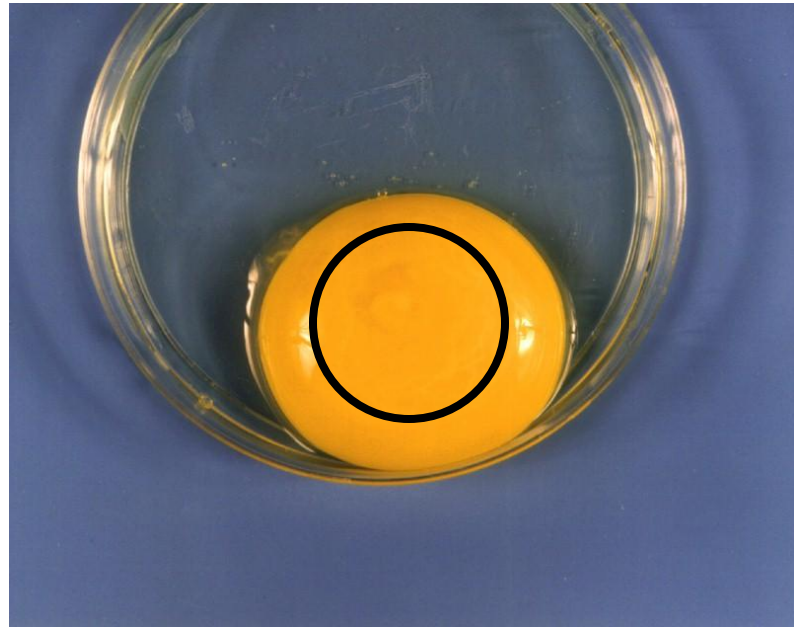
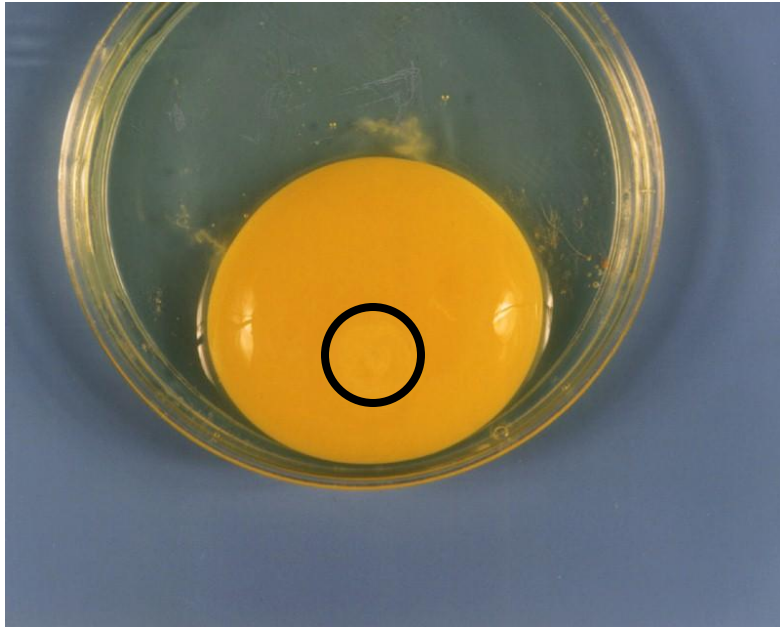


# Embryo Size 胚胎大小



Day 1 第一天

Day 2 第二天





***HATCHABILITY***  
***OR***  
***HATCH OF FERTILE*** ?  
孵化率  
或  
受精孵化率

# ***HIT OUR TARGET!! 实现目标!!***

---



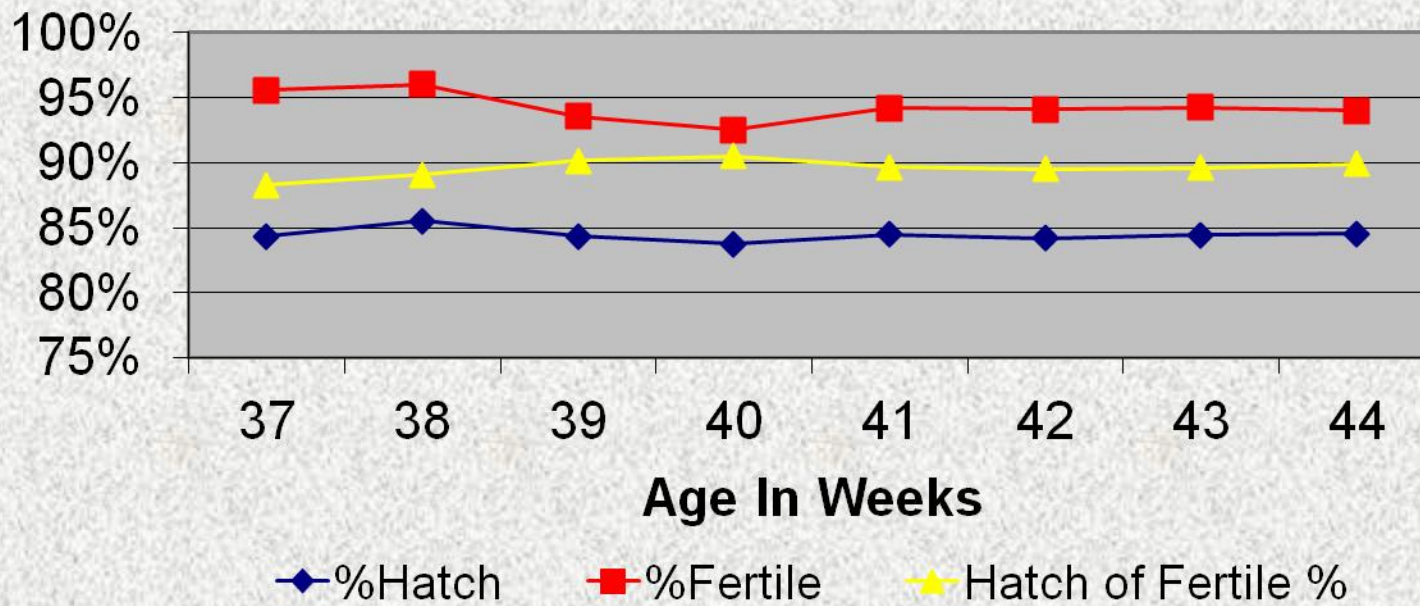
	<b>HATCH</b> 孵化率	<b>FERTITLE</b> 受精率	<b>HOF</b> 受精孵化率
1999	81.41	91.83	88.7
JAN--2000	84.20	95.10	88.5
W\E 2-4-2000	84.10	94.80	88.7

# KEEP IT SIMPLE!!

## 数据分析简单明了



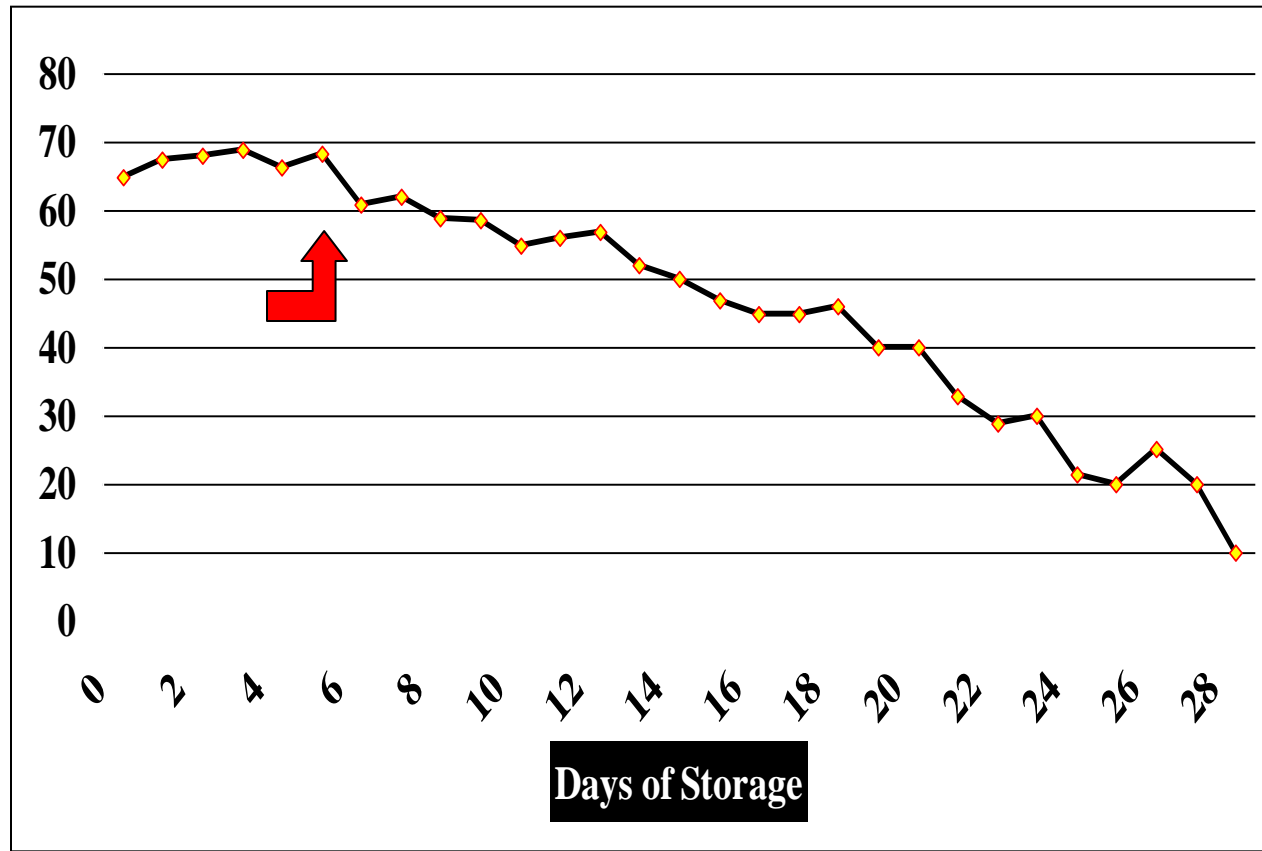
Hatchery Data





# Effect Of Egg Storage On Hatchability

## 种蛋储存对孵化率的影响





Chick Quality

鸡苗质量



## Comfortable Chicks

鸡苗感觉环境舒适







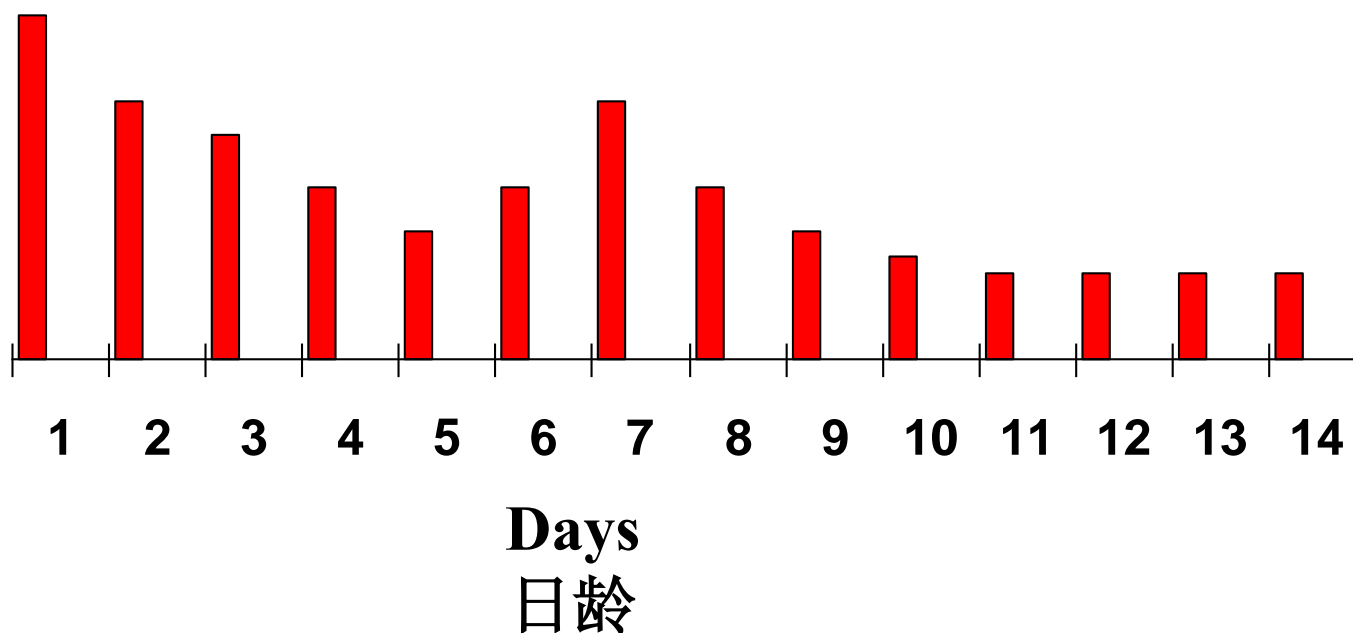
**Panting  
Chicks**  
鸡苗喘息

# Chick Quality 鸡苗质量



## Normal Daily Mortality 正常日死亡率

Mortality  
死亡率



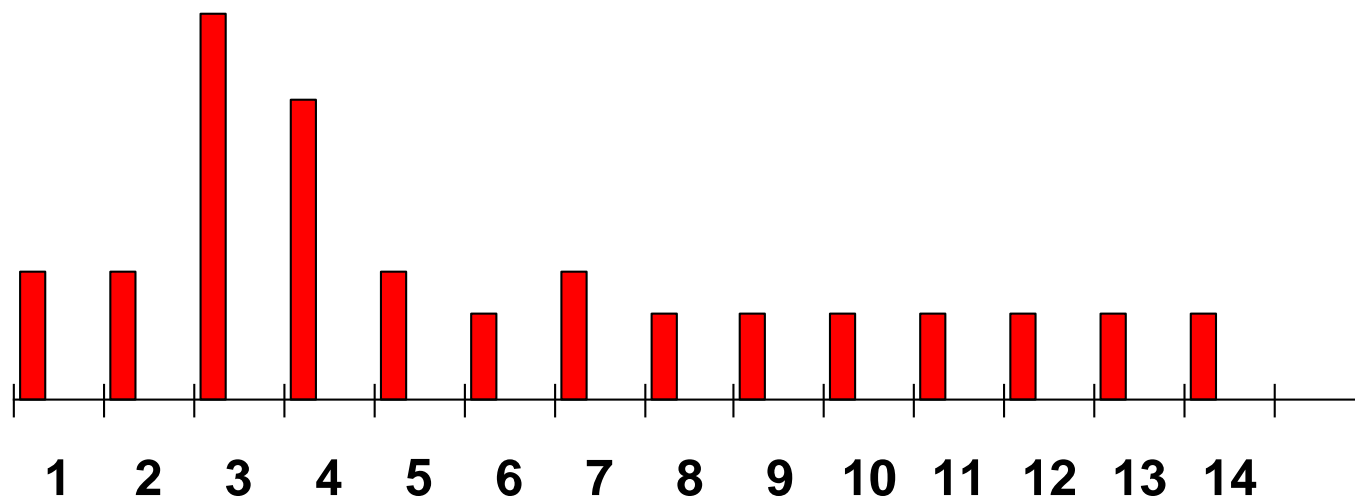


# Chick Quality 鸡苗质量



## Dehydration 脱水

Mortality  
死亡率



Days  
日龄

# Incubator Assessment 孵化评估



Incubator # 孵化器标编号	3	7	11	17	Total	%	Standard
Flock # 鸡群编号	387	343	396	404	x	x	
Flock Age 鸡群周龄	37	61	39	29	x	x	
Chick Count 抽检数量	100	101	100	100	100.25	x	
Activity Level 活动水平	loud	loud	loud	loud	x	x	
Red Hocks 关节发红	2	8	6	3	19		
Red Beaks 鸡喙发红					0		
Culls 淘汰		2			2		
Dehydrated 脱水					0		
Navel Large 大脐带	1	7	2	3	13		
Navel Small 小脐带	43	59	63	51	216		
Wicks 弱雏				2	2		
Leaky 免疫渗漏	1	23	7		31		
Good 正品雏	56	18	29	45	148		

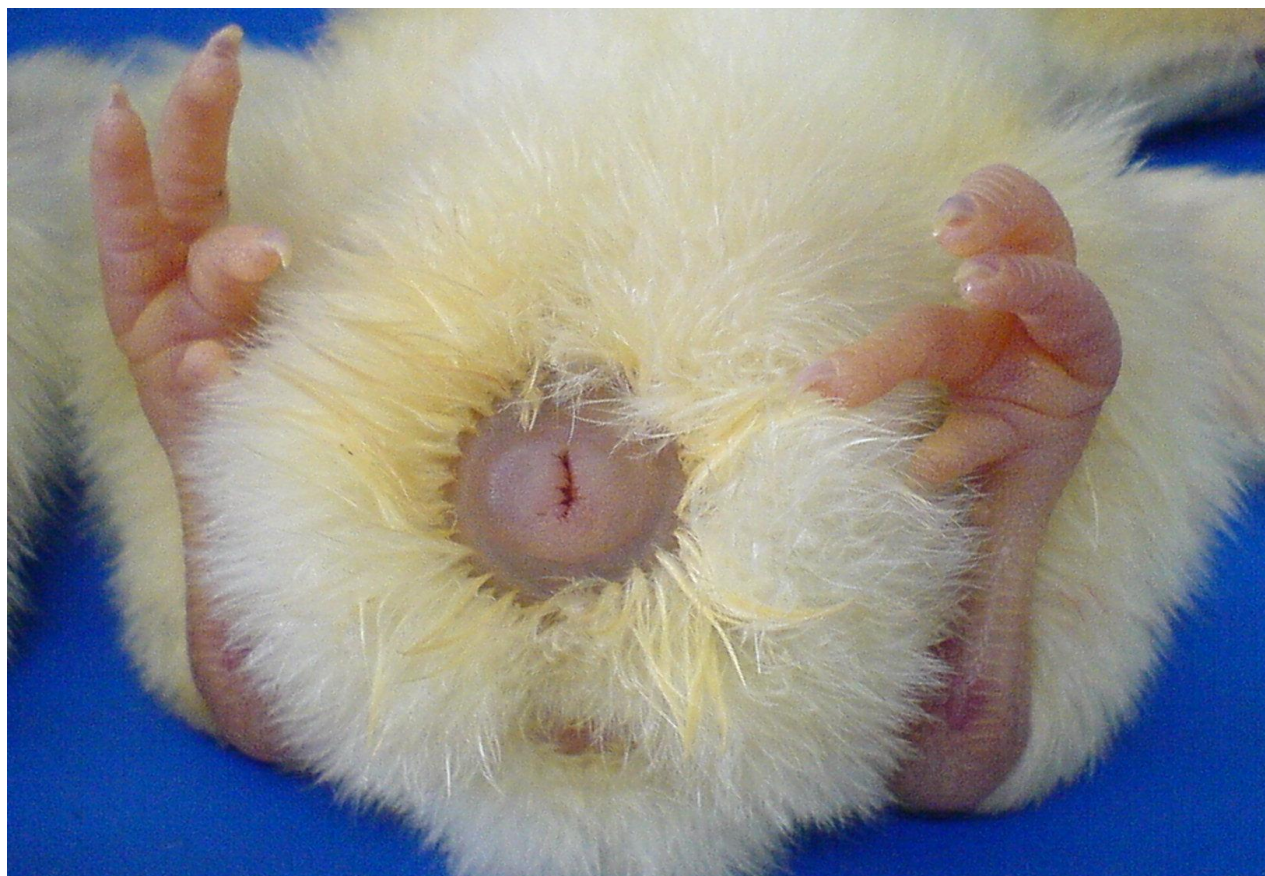




















Weak

# Incubator Assessment 孵化评估



Incubator # 孵化器标编号	3	7	11	17	Total	%	Standard
Flock # 鸡群编号	387	343	396	404	x	x	
Flock Age 鸡群周龄	37	61	39	29	x	x	
Chick Count 抽检数量	100	101	100	100	100.25	x	
Activity Level 活动水平	loud	loud	loud	loud	x	x	
Red Hocks 关节发红	2	8	6	3	19		
Red Beaks 鸡喙发红					0		
Culls 淘汰		2			2		
Dehydrated 脱水					0		
Navel Large 大脐带	1	7	2	3	13		
Navel Small 小脐带	43	59	63	51	216		
Wicks 弱雏				2	2		
Leaky 免疫渗漏	1	23	7		31		
Good 正品雏	56	18	29	45	148		

# Pre-Pull 出雏前



- Hatch Window-Hatch Spread

孵化窗-孵化速度

- 30 hours or less ( hatch starts)

30小时或更短（出雏开始）

- 23 hours- <30%

- 12 hours- 70 to 80%

- Chick Temperatures pre pull/pull

出雏前鸡苗温度

# Step Programs 分步方案



- Lower Temperature in hatcher 孵化器温度较低
- Timing is important (step down before chick overheats)  
时间的把握很重要（温度过高前把温度降下来）
- Take temperatures at pre-pull and at pull times  
记录出雏前和出雏中的温度

**Remember**

**牢记：**

Step programs are designed to keep chicks from overheating  
Not to cool down

分步方案设计的目的是避免鸡苗由于温度过高而受热应激，并不在于降温



0 512

0 508

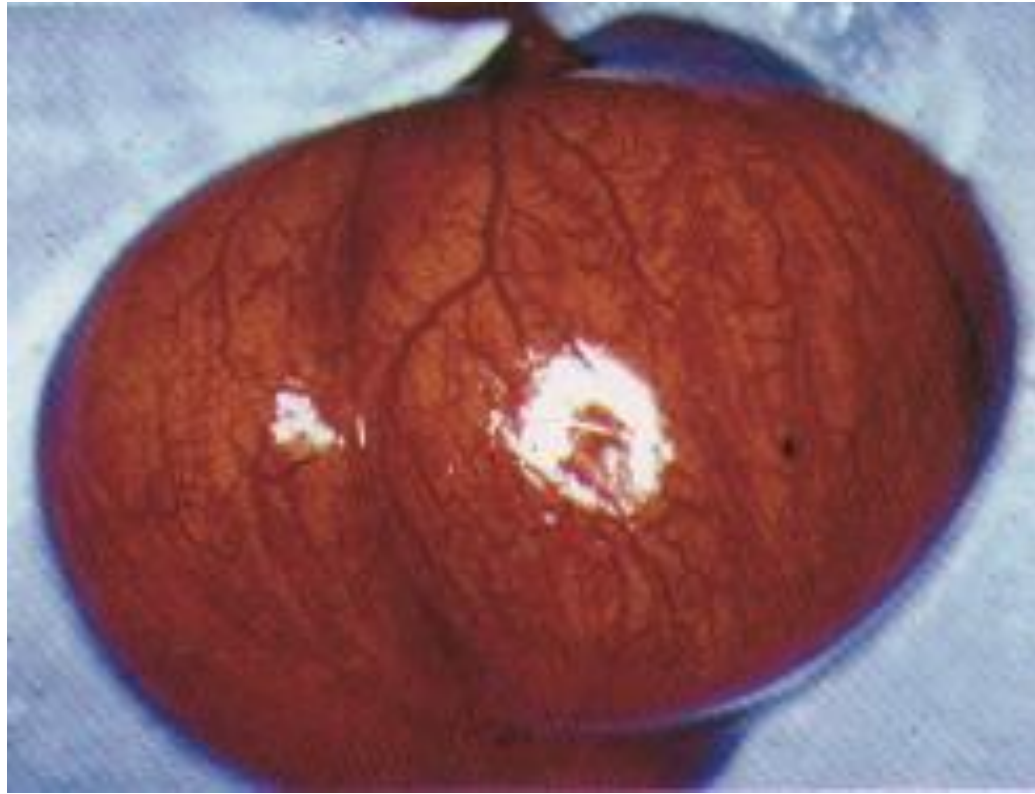
0 504

PULL 出  
维





# The Sac of Life 生命之囊





# The Yolk Sac 卵黄囊

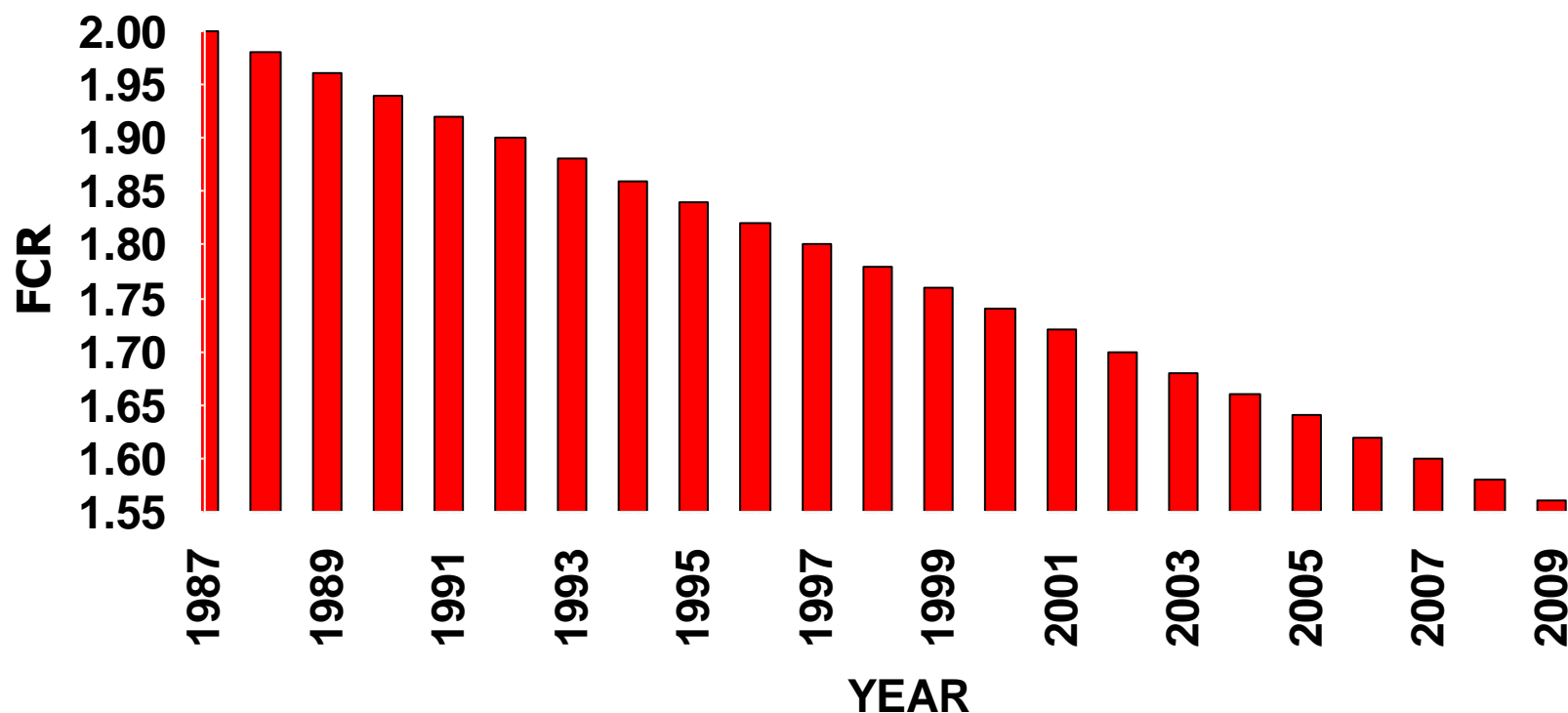


- **Contains essentials 主要成分**
  - **Nutrients (25% protein, 25% lipids)**  
**营养(25%蛋白质, 25%脂类)**
    - This is just for maintenance, the yolk itself doesn' t provide enough alone for growth.  
只是为了维持生命。卵黄自身是不能满足发育所需能量的。
  - **Water水分 (50%)**
  - **Antibodies 抗体**
- **Absorption of yolk 卵黄吸收**

# FCR Improvement Rate 料肉比改善趋势

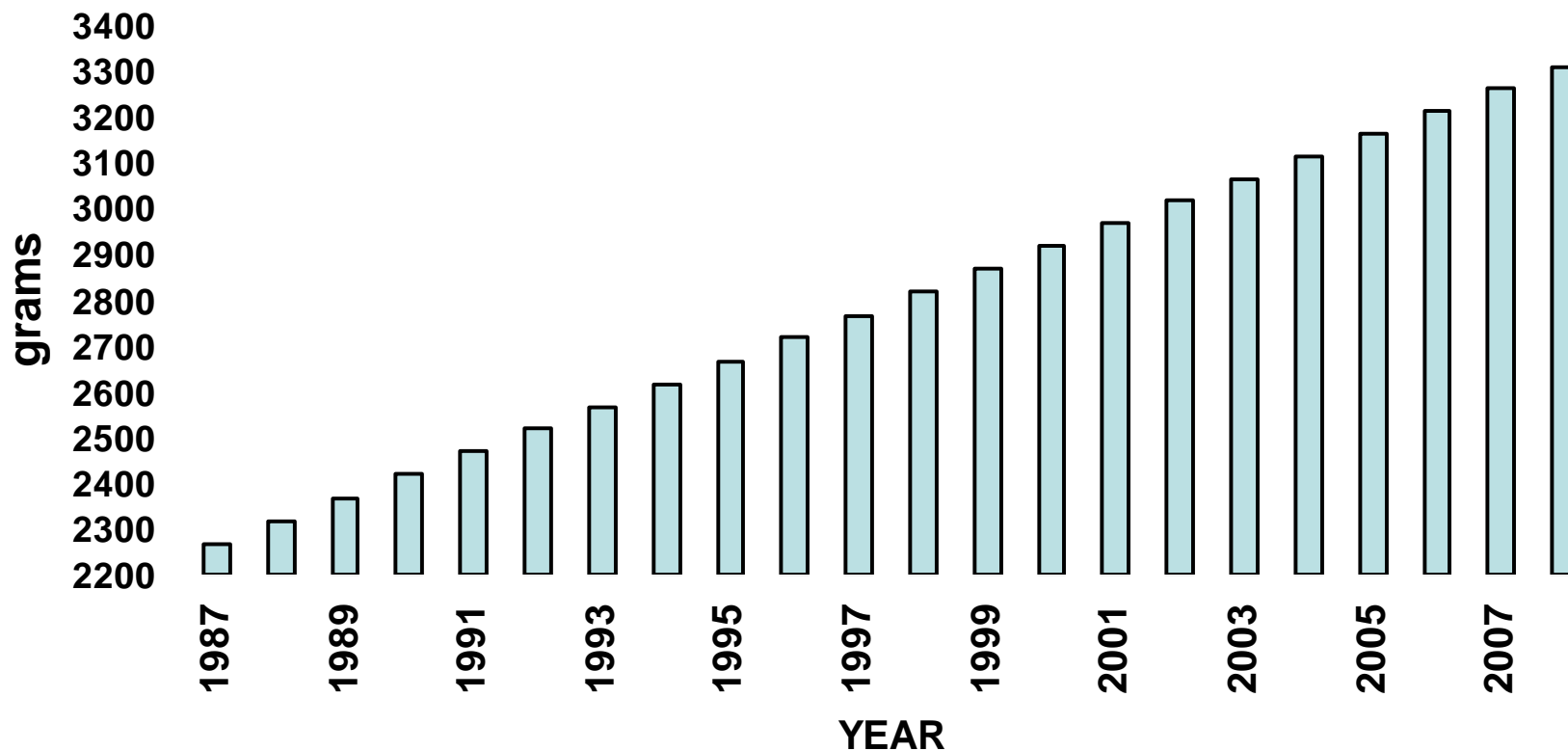
for 4.0 lb Bird 鸡只重量4.0磅

About 1 to 2 points FCR/ year 降低1-2个点/年



# 49 Day Weight 49日齡体重

## 55-65g/ year 增加55-65克/年



# Stress in the first 5 days



## 前5天的应激

Baby chicks were split between 5 groups:

A,B,C,D, and E

根据应激种类可以将鸡苗分成5组

- Group A: stress high temperature  
A组: 热应激
- Group B: stress low temperature  
B组: 冷应激
- Group C: control group  
C组: 管理到位
- Group D: placement without feed/water first 12 hours  
D组: 入雏后12小时内未供水/供料
- Group E: placement without feed/water first 24 hours  
E组: 入雏后24小时未供水/供料



# Stress in the first 5 days



## 前5天的应激

- All the Baby chicks were of the same breeder flock - 45 weeks old.

所有鸡苗源于同一种鸡群-45周龄

- Same eggs weight and incubated in the same setter/hatcher machine.

种蛋重量相同、在同一孵化器/出雏器中孵化

- All the groups were placed 7 hours after hatch.

均在孵化7小时候进雏

# Stress in the first 5 days 前5天应激

## (Temperature variation ) (温度差异)



Age (Days) 日龄	Group A A组	Group B B组	Group C C组	Group D D组	Group E E组
1	95°F	80.5*	89.5*	89.5*	89.5*
2	94.1°F	79.7°F	88.7°F	88.7°F	88.7°F
3	93.2°F	78.8°F	87.8°F	87.8°F	87.8°F
4	92.3°F	77.9°F	86.9°F	86.9°F	86.9°F
5	91.4°F	77°F	86°F	86°F	86°F

# Stress in the first 5 days 前5天的应激 (body weight) (体重)



Age (Days) 日龄	Group A A组	Group B B组	Group C C组	Group D D组	Group E E组
1	41.7gr	41.7gr	41.7gr	41.7gr	41.7gr
2	54.2gr	42.2gr	57.6gr	52gr	37.2gr
3	65.6gr	65gr	67.4gr	61.2gr	55.8gr
4	77.9gr	82.4gr	85.6gr	77.9gr	66.5gr
5	101.6gr	99.6gr	129gr	93.2gr	84.3gr

# Stress in the first 5 days前5天应激 (Intestine weight)（肠道重量）

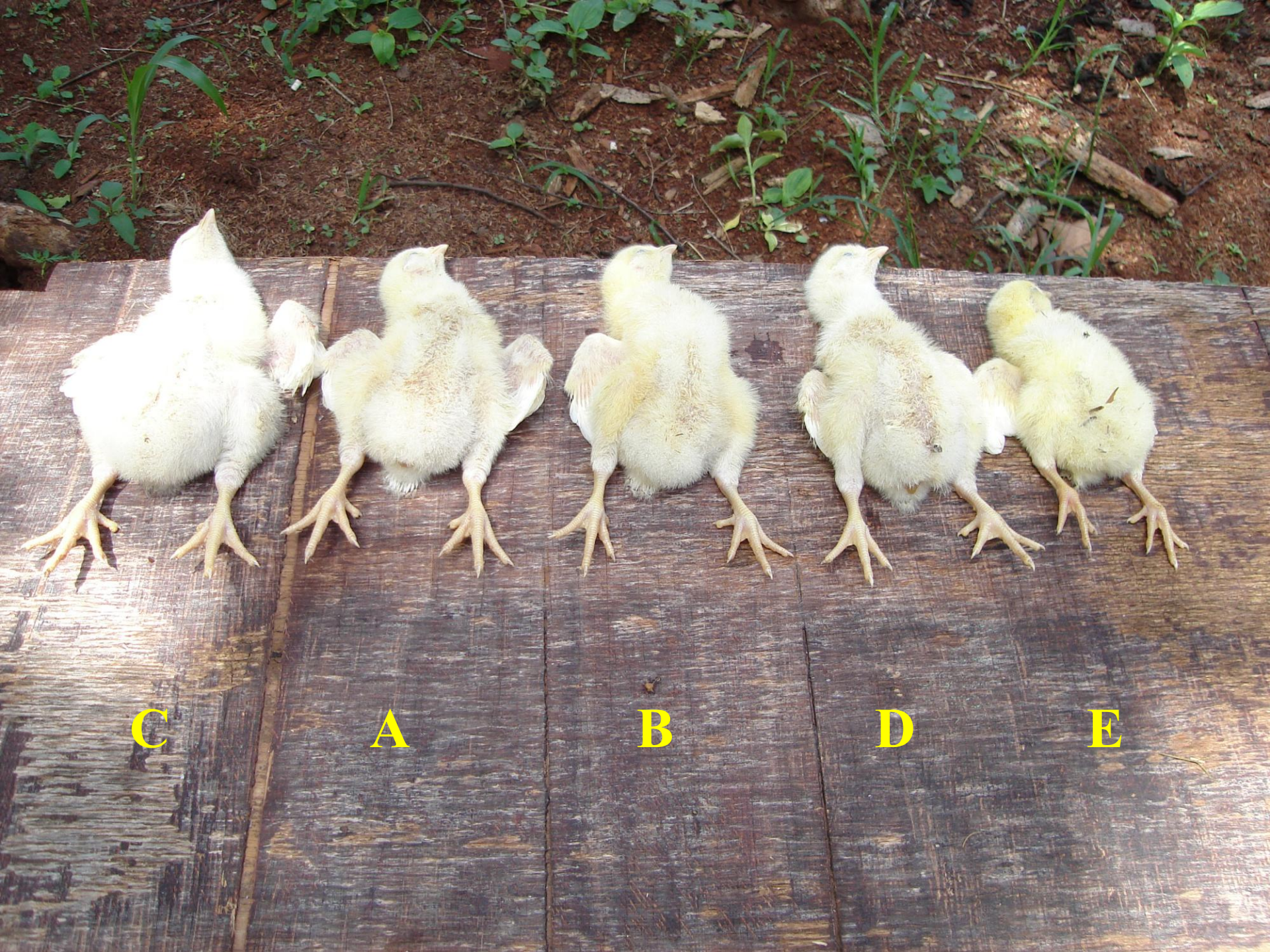


Age (Days) 日龄	Group A A组	Group B B组	Group C C组	Group D D组	Group E E组
1	1.30gr	1.30gr	1.30gr	1.30gr	1.30gr
2	3.48gr	3.61gr	3.75gr	3.12gr	1.09gr
3	5.28gr	5.85gr	5.95gr	4.92gr	3.92gr
4	8.24gr	8.30gr	8.70gr	7.78gr	6.25gr
5	9.92gr	9.81gr	10.60gr	9.34gr	8.68gr









C

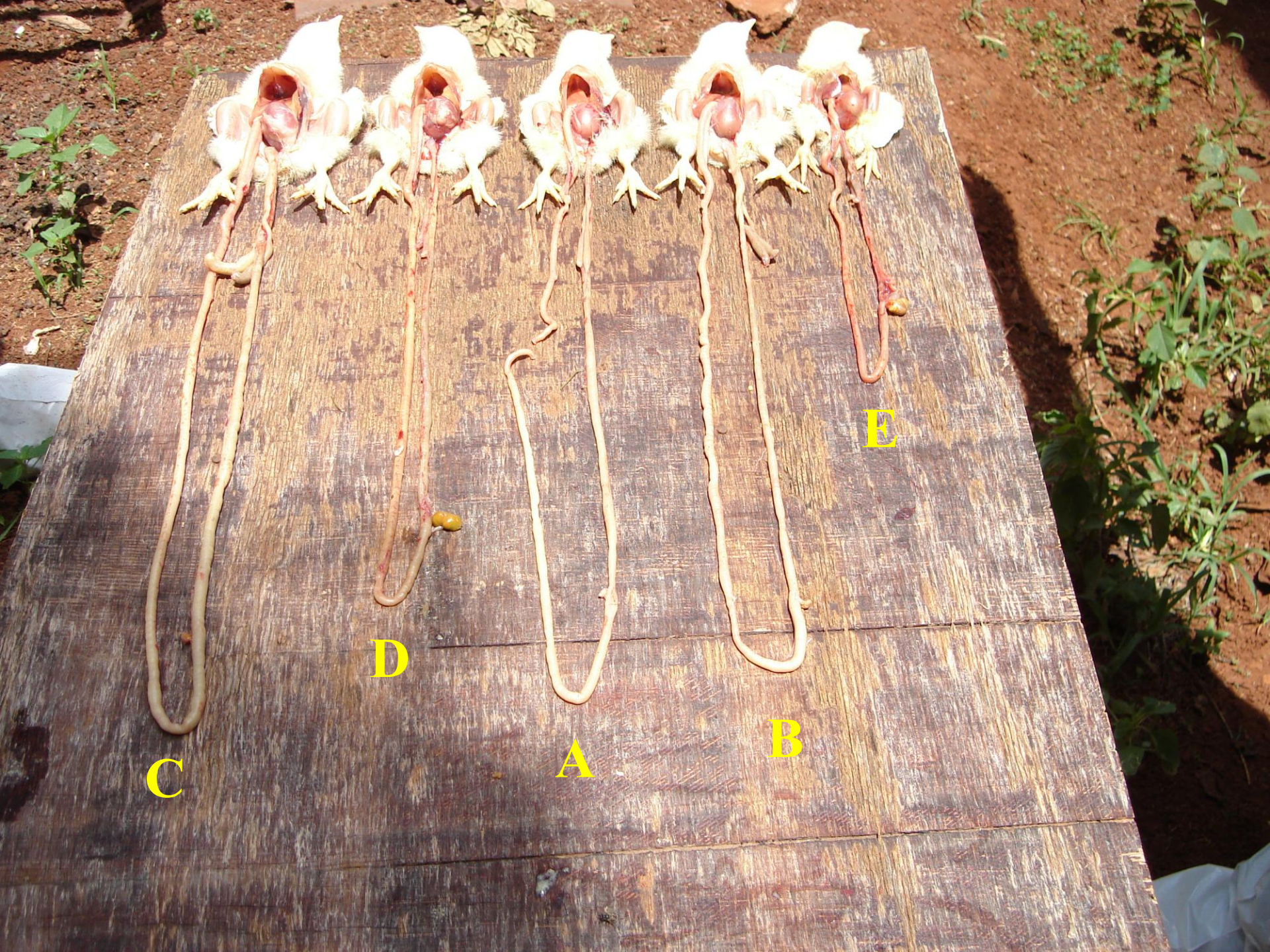
A

B

D

E





C

D

A

B

E



# FCR Advantage 料肉比优势



Cobb Advantage of 2 points of FCR  
(\$250/ton Feed Cost)

## Cobb Feed Conversion Advantage 料肉比优势

Cost / Lb. Live Change in Profit 成本/磅 \$0.0025

Target Live Weight 目标体重 x 4.00 Lb

Cost / Bird Change in Profit 成本/只 \$0.01

Number of Birds / Week 每周出栏数量 x 1,000,000

Change in Profit / Week 每周实现利润转化 \$10,000.00

Number of Weeks / Year 周数/年 x 52

**FCR Advantage in Profit \$520,000.00**

料肉比的优势可以转化为每年\$520,000.00的利润。





**Thank You 谢谢!**

**Scott Martin  
World Technical Support  
Cobb-Vantress**