



# **Female Management**

## **母鸡管理**

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This is our objective  
这是我们的目标

22 Weeks of age  
22周龄





This is our objective  
这是我们的目标

25 Weeks of age  
25周龄





# Presentation Outline



## 培训纲要

1. Body weight & feeding curve.
  2. Uniformity in frame size & fleshing (condition).
  - 3. The condition of the females at the moment of light stimulation.**
  4. Feeding from 21 to 24 wks of age.
  5. Feeding to peak production.
  6. Feeding at post peak production.
- 
1. 体重与喂料曲线。
  2. 骨架与胸形（状况）的均匀度。
  - 3. 光照刺激时的母鸡群状况。**
  4. 21到24周龄的喂料管理。
  5. 产蛋高峰的喂料管理。
  6. 产蛋高峰后的喂料管理。





Body weight and feeding pattern

鸡只体重与喂料曲线



# DAILY FEEDING & LIGHTING PROGRAM (0-28 DAYS)

每日喂饲与光照程序 (0-28天)



WEEK 周	DAY 日	FEED (gms./bird/day) 饲料 (克/鸡只/天)	FEEDING PROGRAM 喂饲程序	LIGHT 光照时间
	1	18	Full Feed 完全喂饲	24
	2	19	Full Feed	23
1	3	20	Full Feed	23
	4	21	Full Feed	23
	5	22	Full Feed	16
	6	23	Full Feed	16
	7	24	Full Feed	16
2	8	25	Full Feed	12
	9	26	Full Feed	12
	10	27	Full Feed	10
	11	28	Full Feed	10
	12	29	Full Feed	8
	13	30	Full Feed	8
	14	31	Full Feed	8
3	15	32	Limit Feed 限量喂饲	8
	16	33	Limit Feed	8
	17	34	Limit Feed	8
	18	35	Limit Feed	8
	19	36	Limit Feed	8
	20	37	Limit Feed	8
	21	38	Limit Feed	8
4	22	Set daily feed amount to 42 g. When this amount is consumed in 4.0 to 4.5 hours begin your skip-a-day feeding program .(6/1, 5/2, 4/3 ) 设定每天饲料量为42克。当在个数量的饲料在4.0到4.5小时内被消耗完毕时，开始隔天喂饲程序 (6/1, 5/2, 4/3 )	Limit Feed or Skip-a-day 限量喂饲或隔天喂饲	8
	23		Limit Feed or Skip-a-day	8
	24		Limit Feed or Skip-a-day	8
	25		Limit Feed or Skip-a-day	8
	26		Limit Feed or Skip-a-day	8
	27		Limit Feed or Skip-a-day	8



# BW & Feeding - ♀♀ Cobb 500-FF

体重与喂饲情况 - 科宝500-FF

Trying to recover

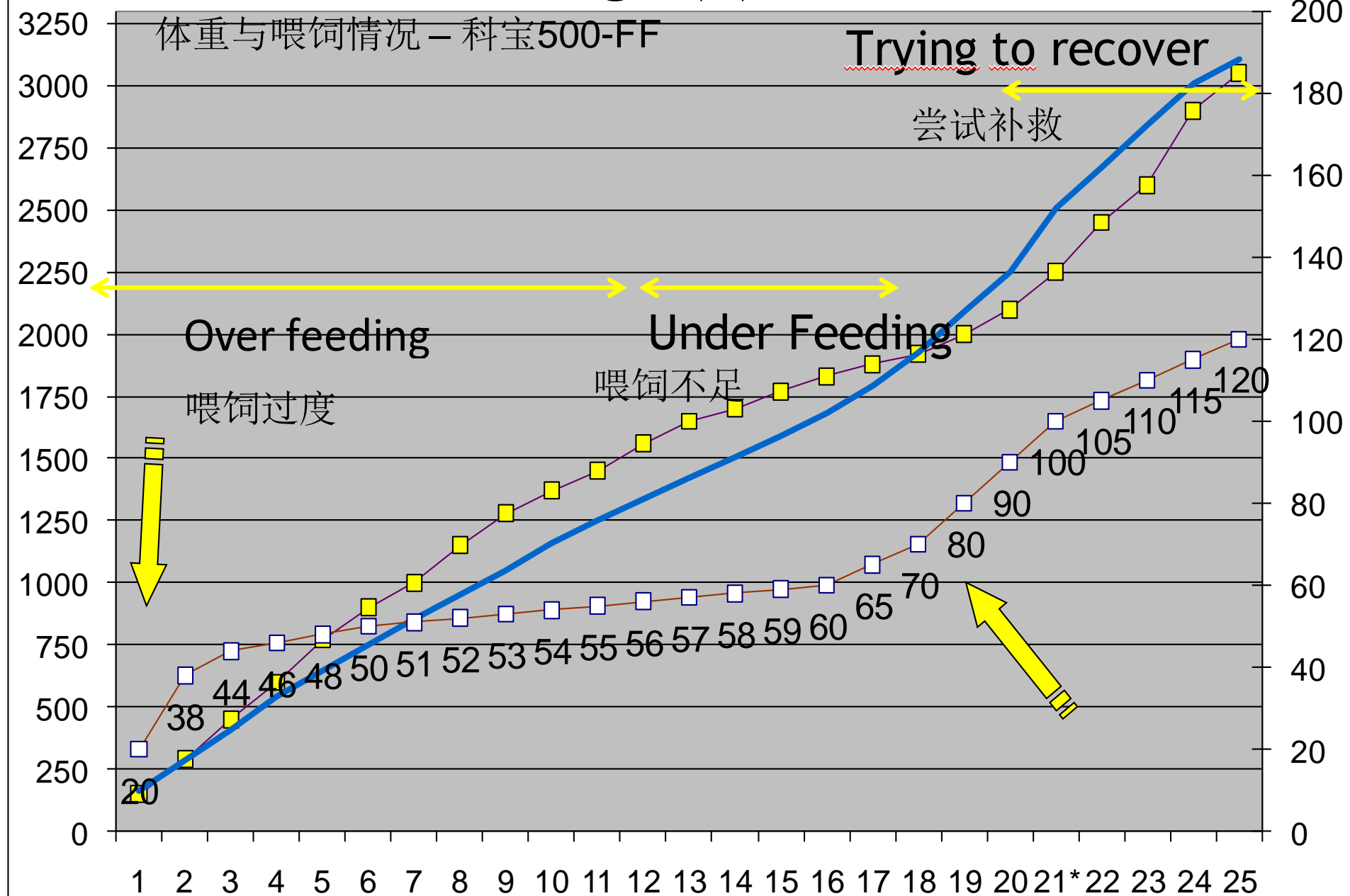
尝试补救

Over feeding

喂饲过度

Under Feeding

喂饲不足





# BW & Feed - ♀♀ Cobb 500-FF

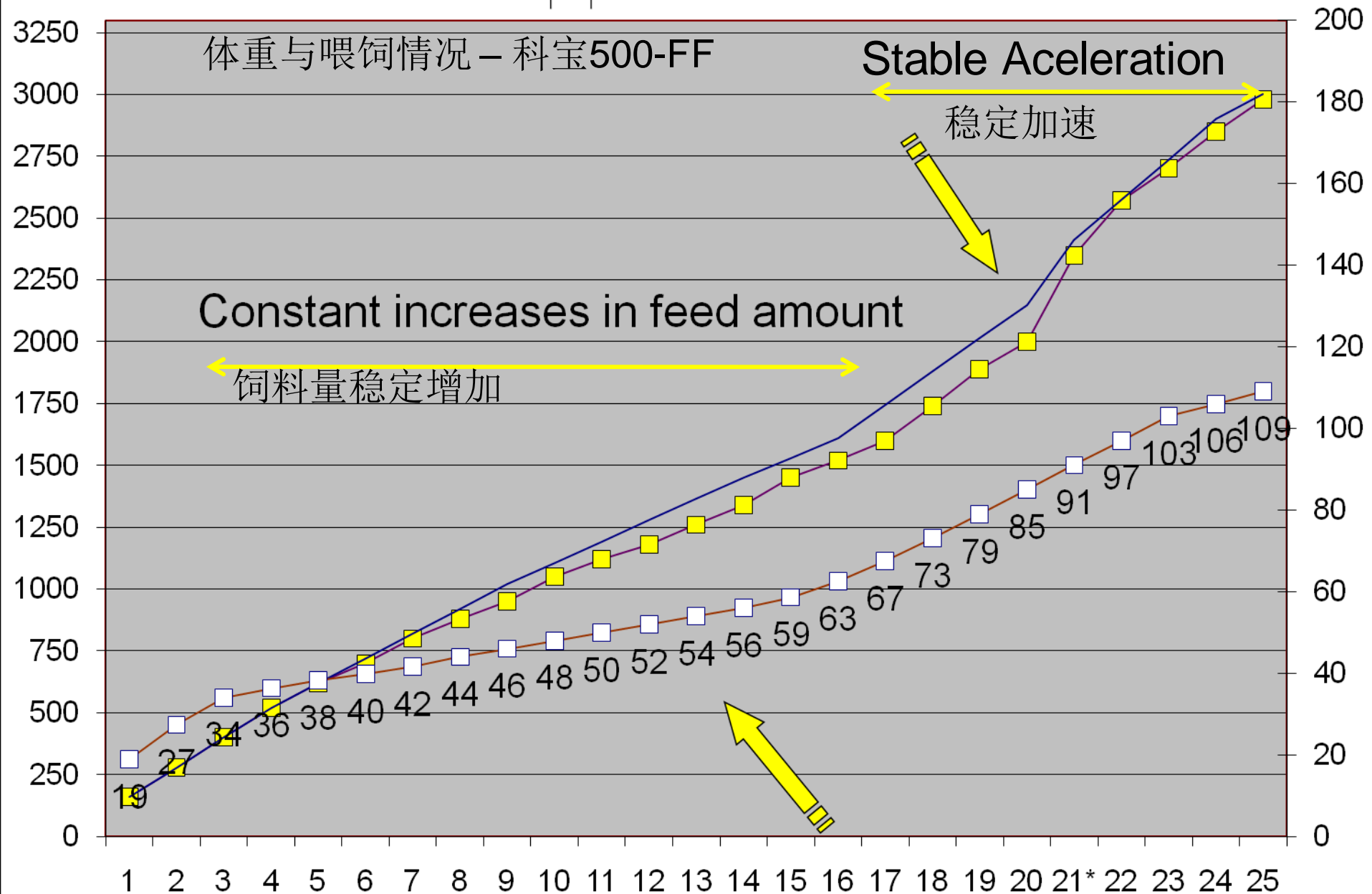
体重与喂饲情况 - 科宝500-FF

Stable Aceleration

稳定加速

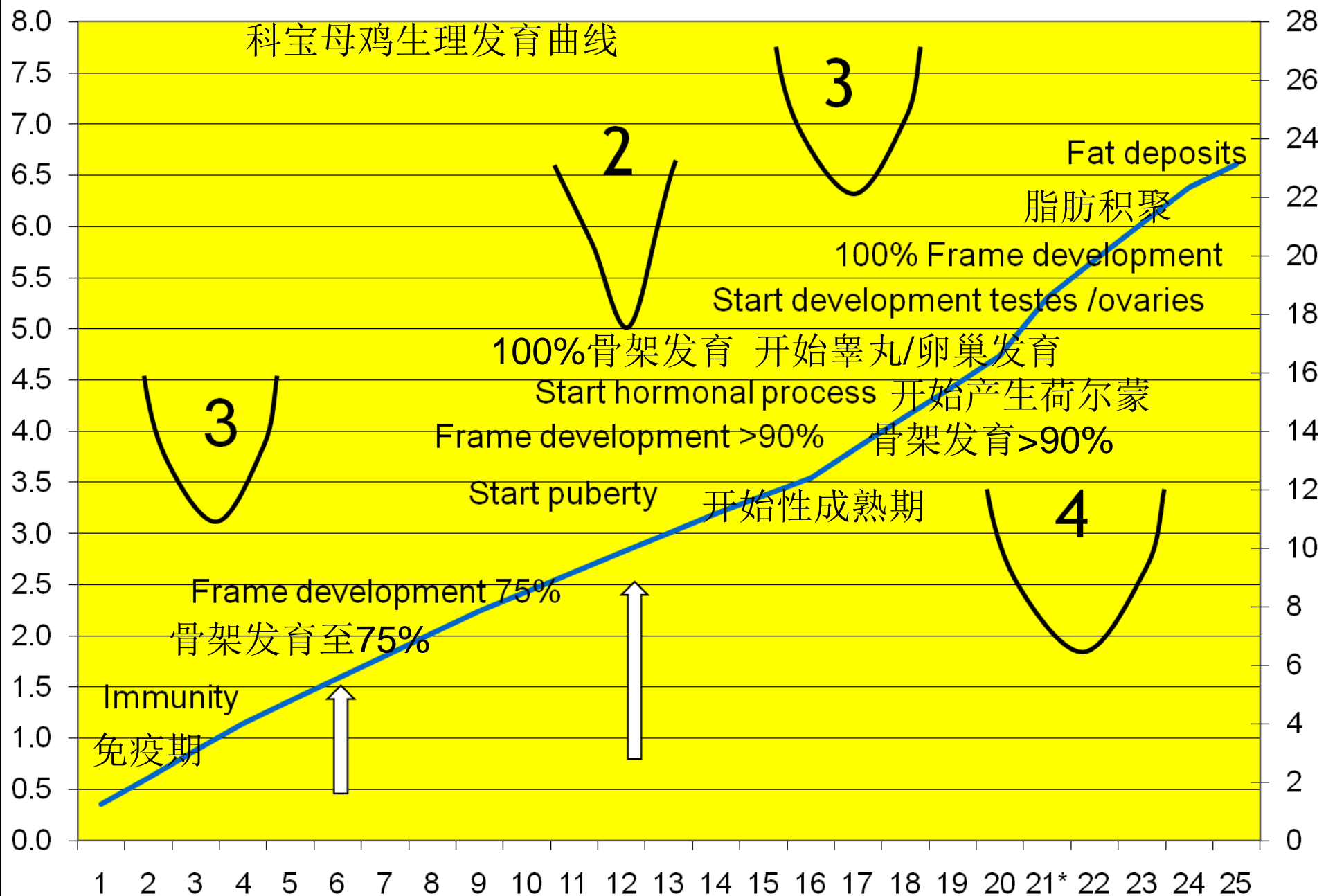
Constant increases in feed amount

饲料量稳定增加





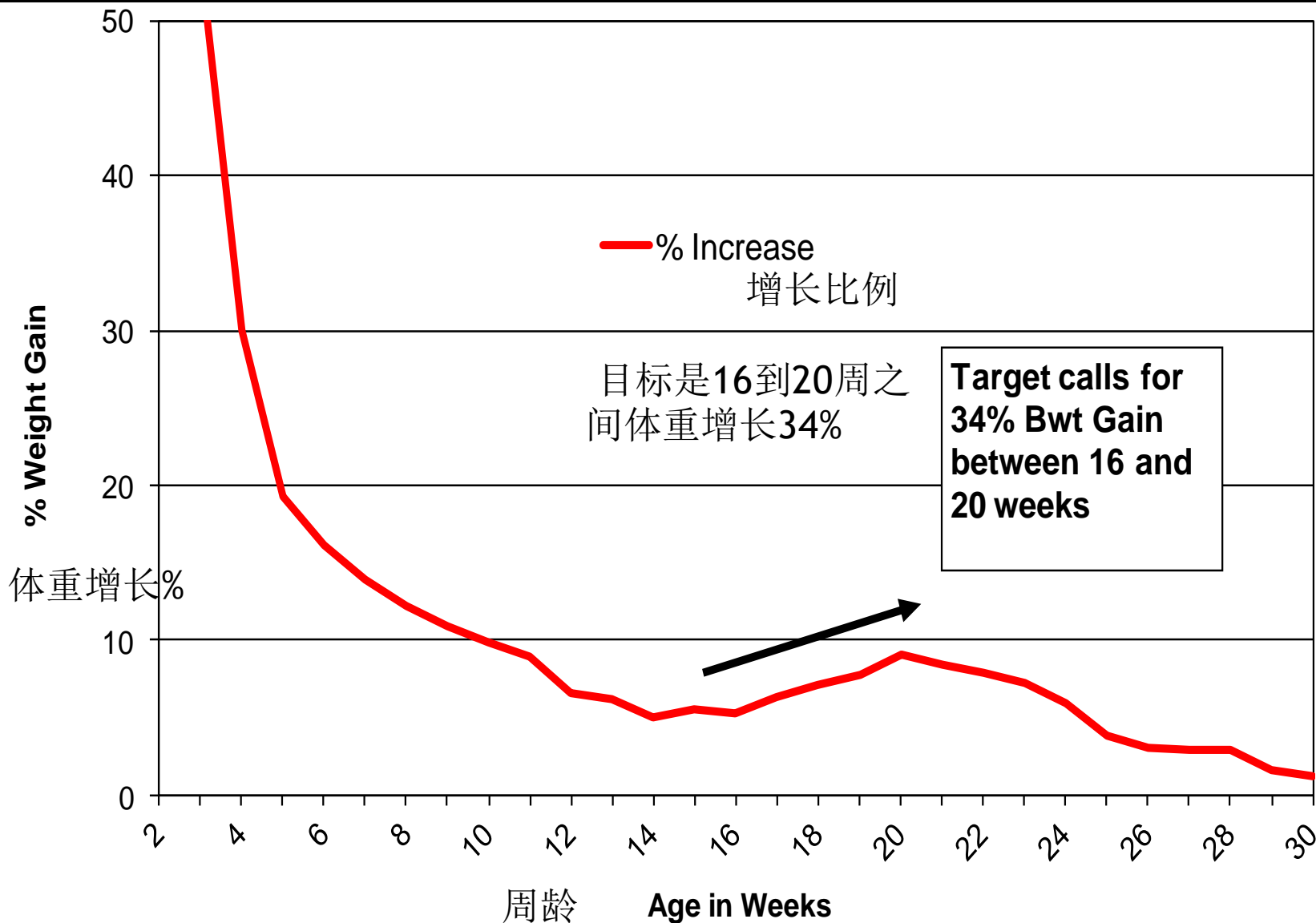
## Physiological development Curve Cobb female





# Percentage Increase in Female Bodyweight Gain

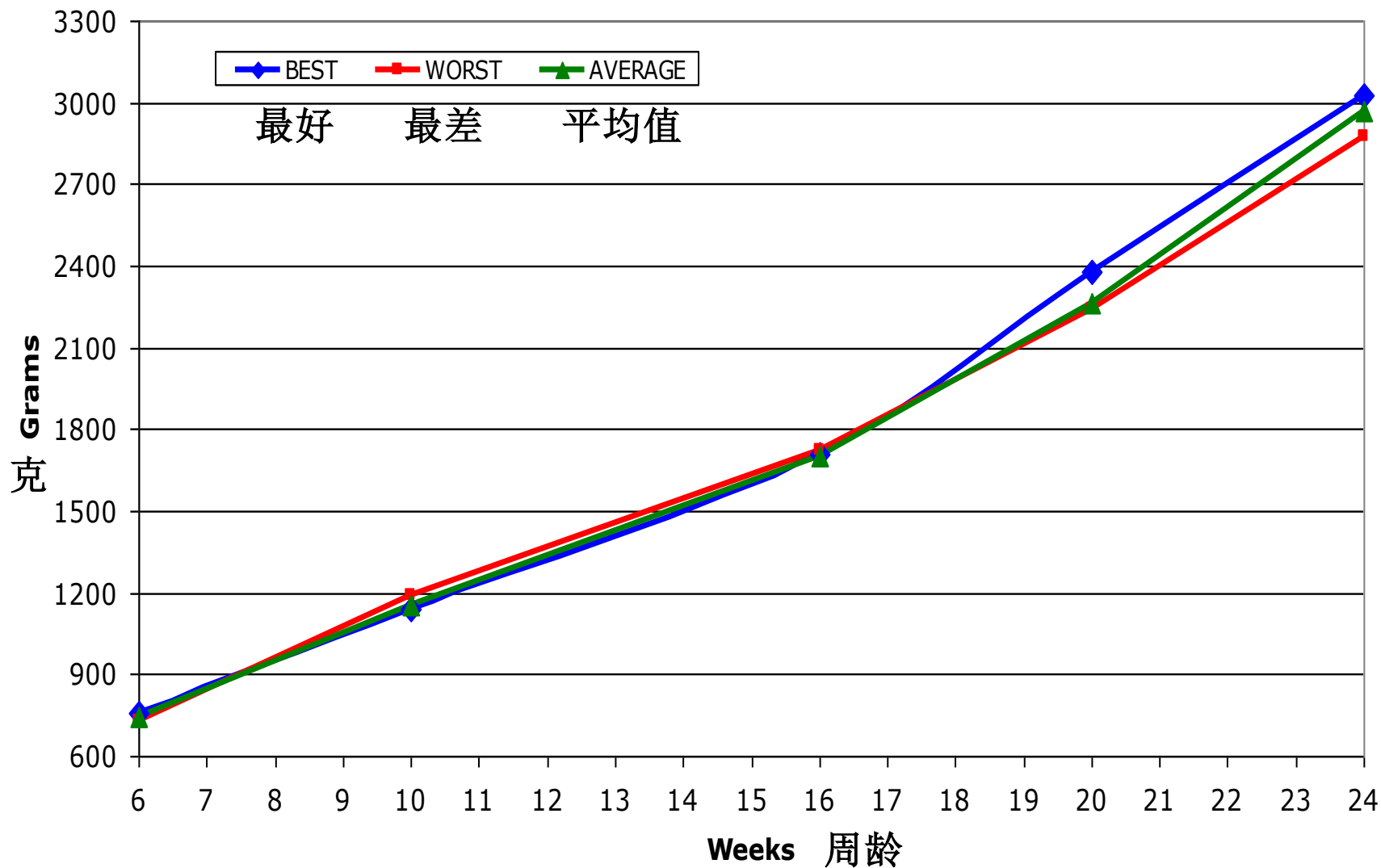
母鸡体重增长比例





养殖成绩与  
母鸡体重

## FLOCK PERFORMANCE Female Bodyweights







**Grading for flock uniformity**  
对鸡群分级以保障均匀度



# Grading for Uniformity

## 分级来保障均匀度



- Frame uniformity: At debeaking (early grading) and 3-4 wks grading then 7-8 wks grading
- Fleshing uniformity: at 16 wks.
- Normally 3 pens (small, medium, large birds).
- Small birds will eat slower; as of 5 wks of age, do not mix them with large birds.
- 骨架均匀度：在断喙（早期分级）和3到4周龄分级，然后在7到8周龄再分级
- 胸型均匀度：16周龄。
- 通常有3个隔栏（小型鸡只、中型鸡只、大型鸡只）。
- 小型鸡只会吃得比较慢；5周龄后，切勿将其与大型鸡只混合在一起。



# Some Basics need to be right!

## 一些基本事项需要做对！

1. Enough feeder space (15 cm > 12 wks).
  2. Fast feed distribution (< 3 minutes).
    - Pan, spin or chain feeding in rearing?
  3. Good bird distribution over house area.
    - Feeding in the dark.
  4. Good feed uniformity (no segregation).
    - Mash or crumble?
- 
1. 足够的料位（12周龄以上需要有15厘米的空间）
  2. 快速饲料分配（3分钟以内）。
    - 养殖时使用料盘、螺旋盘式料线系统还是链式料线系统喂料？
  3. 鸡舍内良好的鸡只分布。
    - 黑暗喂料。
  4. 良好的饲料均匀度（不会出现混合度降低情况）。
    - 粉料还是破碎料？



**< 3 MINUTES UNIFORM FEED DISTRIBUTION**

**<3分钟均匀饲料分配>**





10 birds/m<sup>2</sup> and mini slats to get birds more mobile

10只/m<sup>2</sup>的饲养密度再加装板条架，让鸡只有更多活动空间





**CROP FILL AFTER TRANSFER**

**转群后嗉囊满料**





# How to recover underdeveloped birds

## 如何帮助体重不达标的鸡只达标

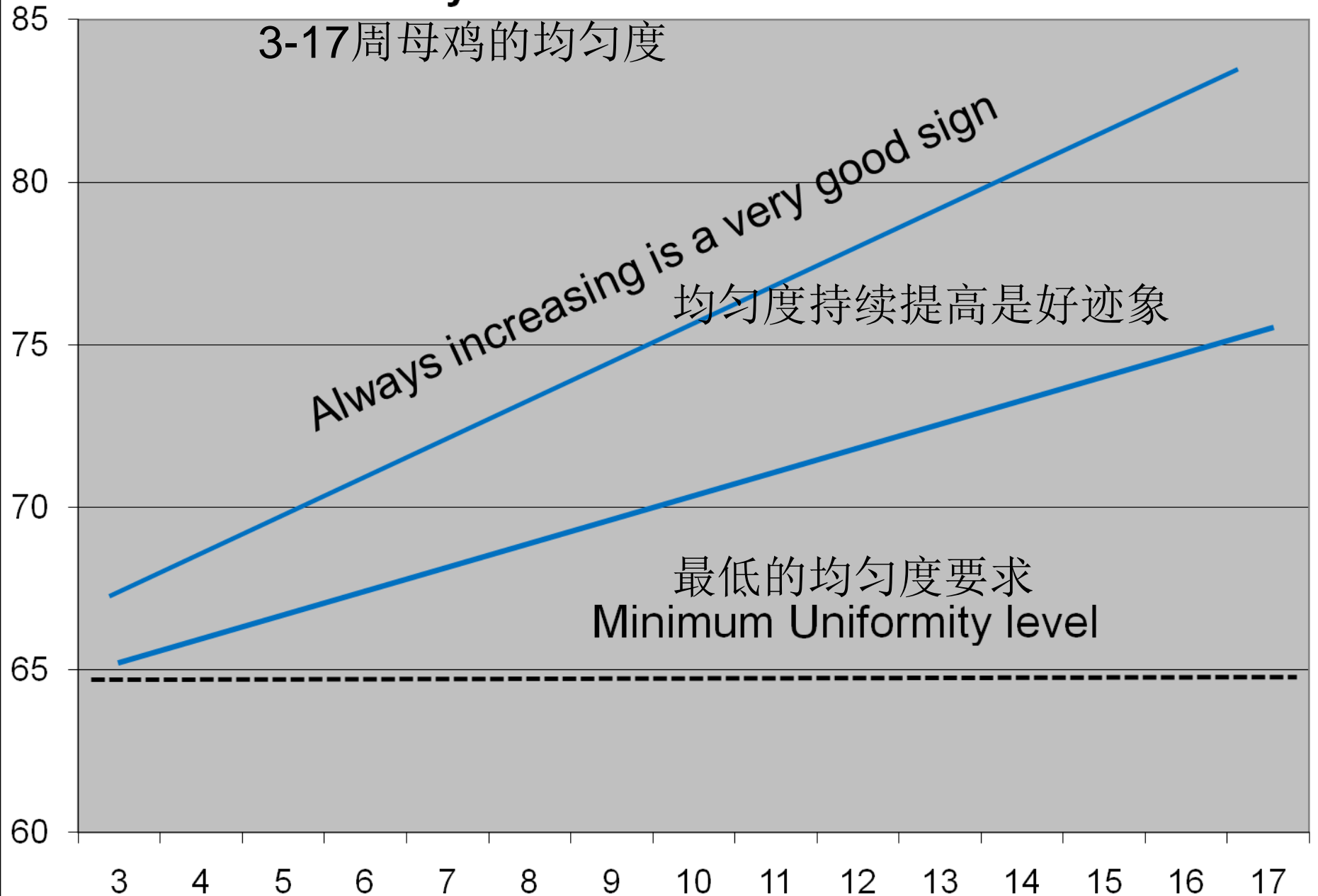
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- In same house, on same feeder track, use in the pen 20% more feeding space.
- A house left empty, transfer the heavy or the light birds.
- If flock is on 5/2 feeding program the smaller birds can eat 6 days instead of 5 days & in 3 weeks should recover.
- 在同一鸡舍里的相同送料线上，给隔栏内的鸡只多至少20%的料位。
- 预留一间鸡舍，转群时将体重较大或较轻的鸡只专舍管理。
- 如果正在对鸡群使用**5/2**喂饲程序，较小的鸡只可以喂6天料而非**5**天，在**3**周时间内就应该可以恢复正常。



# Uniformity 3-17 Weeks in Females

3-17周母鸡的均匀度





Grading at 4 & 8 weeks of age 4周龄与8周龄时分级			
Week 周龄	Small 较小鸡只	Average 普通鸡只	Heavies 超重鸡只
1	22	22	22
2	34	34	34
3	37	37	37
4	40	40	40
5	42 (+2)	42 (+2)	42 (+2)
6	48 (+6)	44 (+2)	44 (+2)
7	49	46	46
8	49	49	49
9	51 (+2)	51 (+2)	51 (+2)
10	55	53	53
11	56	55	55
12	57	57	57
13	59	59	59



# Conclusions about Uniformity

## 关于均匀度的结论



- Grading to achieve uniform frame and correct fleshing score before light stimulation
  - 16 to 21 weeks uniformity needs to improve constantly
- Spending quality time in the hen house observing and feeling the birds for right fleshing
  - Fleshing score, pin bone opening, fat reserve
- Fast and uniform feed distribution
  - feeding time best time to observe the birds
- 在加光前，通过分级实现均匀的骨架和好的胸型评分数
  - 需要持续改善16到21周龄的均匀度
- 花大量时间在母鸡舍里观察和用手测量鸡只胸型以确保精确
  - 胸型分数、耻骨打开、脂肪储备
- 快速与均匀的饲料分配
  - 喂饲时是观察鸡只的最佳时间

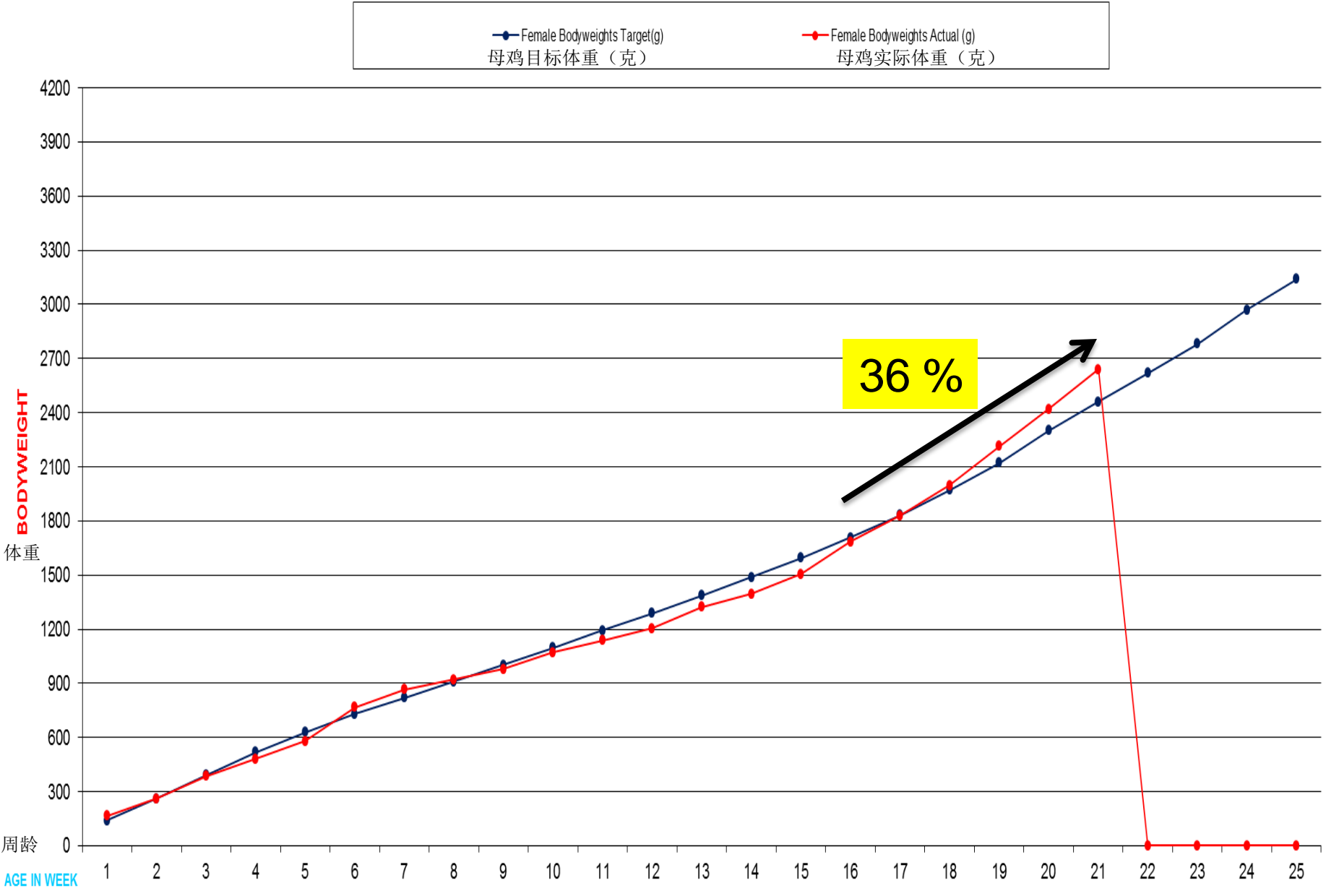




Conditioning of females

母鸡鸡群状况



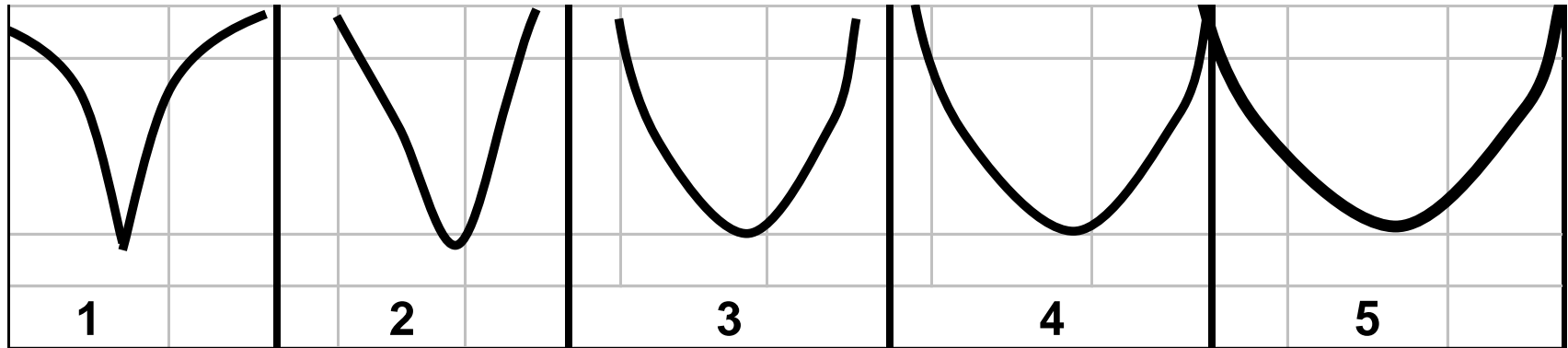




# Format & Fleshing Condition



## 胸型形态表与胸型状况



Condition needed by the females (min.95%)

4 weeks format 3-4

12 weeks format 2-3

16 weeks format 3-2

20 weeks format 4-3

25-30 weeks format 3 or 4

母鸡所需满足的条件（至少95%达标）

4周龄时应处于第3至第4种形态

12周龄时应处于第2至第3种形态

16周龄时应处于第3至第2种形态

20周龄时应处于第4至第3种形态

25至30周龄时应处于第3或第4种形态





**Fleshing score no. 2**

**At 12 weeks 、**

**12周龄时的胸型为第2种**





**Fleshing score no. 3**

**At 16 weeks**

**16周龄时胸型为第3种**



**Fleshing score no. 4 at 20 weeks**  
**20周龄时的胸型为第4种**





# Fleshing Score Sheet

## 胸型评分表



Female fleshing scoring 母鸡胸型得分

House # 鸡舍编号

Age: 鸡龄

Date: 日期

Total samples

总样本数

330

Total score

总分数

1216

Ave fleshing score

平均体膘分数

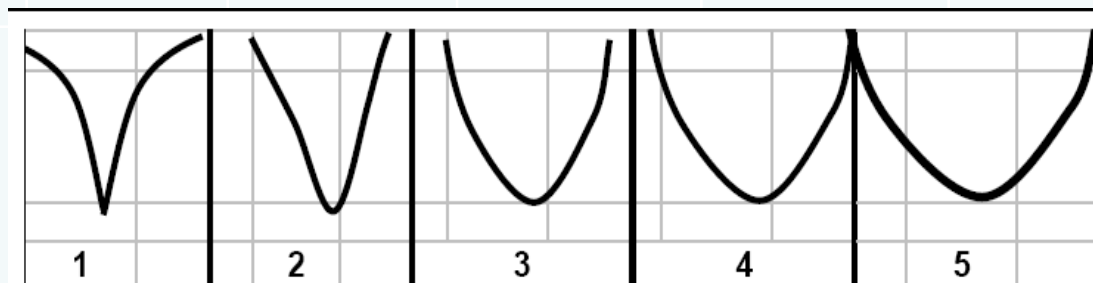
3.68

First lighting at

第一次加光时间:

22 + 2

PARAMETERS 标准



	Fleshing score 体膘分数					Total samples 总样本数	Average score 平均分
	1	2	3	4	5		
Pen 1							
围栏1	5	12	20	60	20	117	3.67
	5	24	60	240	100	429	
Pen 2	2	10	11	50	15	88	3.75
围栏2	2	20	33	200	75	330	
Pen 3							
围栏3	1	20	12	80	12	125	3.66
	1	40	36	320	60	457	



# Characteristics of the Female for Right Moment of Light Stimulation



## 适合进行光照刺激的母鸡的特点

1. Certain amount of Wattle and Comb development
  2. Have enough BW and breast muscle development (good U shaped breast)
  3. More than 2 finger of pelvic bone opening
  4. Certain fat deposits around the pelvic bones
1. 适当的肉垂和鸡冠发育
  2. 足够的体重与胸肌发育（良好的U形胸）
  3. 耻骨开放到2指以上
  4. 耻骨周围有一定的脂肪积聚
- A minimum of 90% of females need to fulfill at least 3 of the 4 characteristics to be considered in condition.
  - 至少90%的母鸡需要符合这4项特点中的至少3项才被视为符合加光条件。



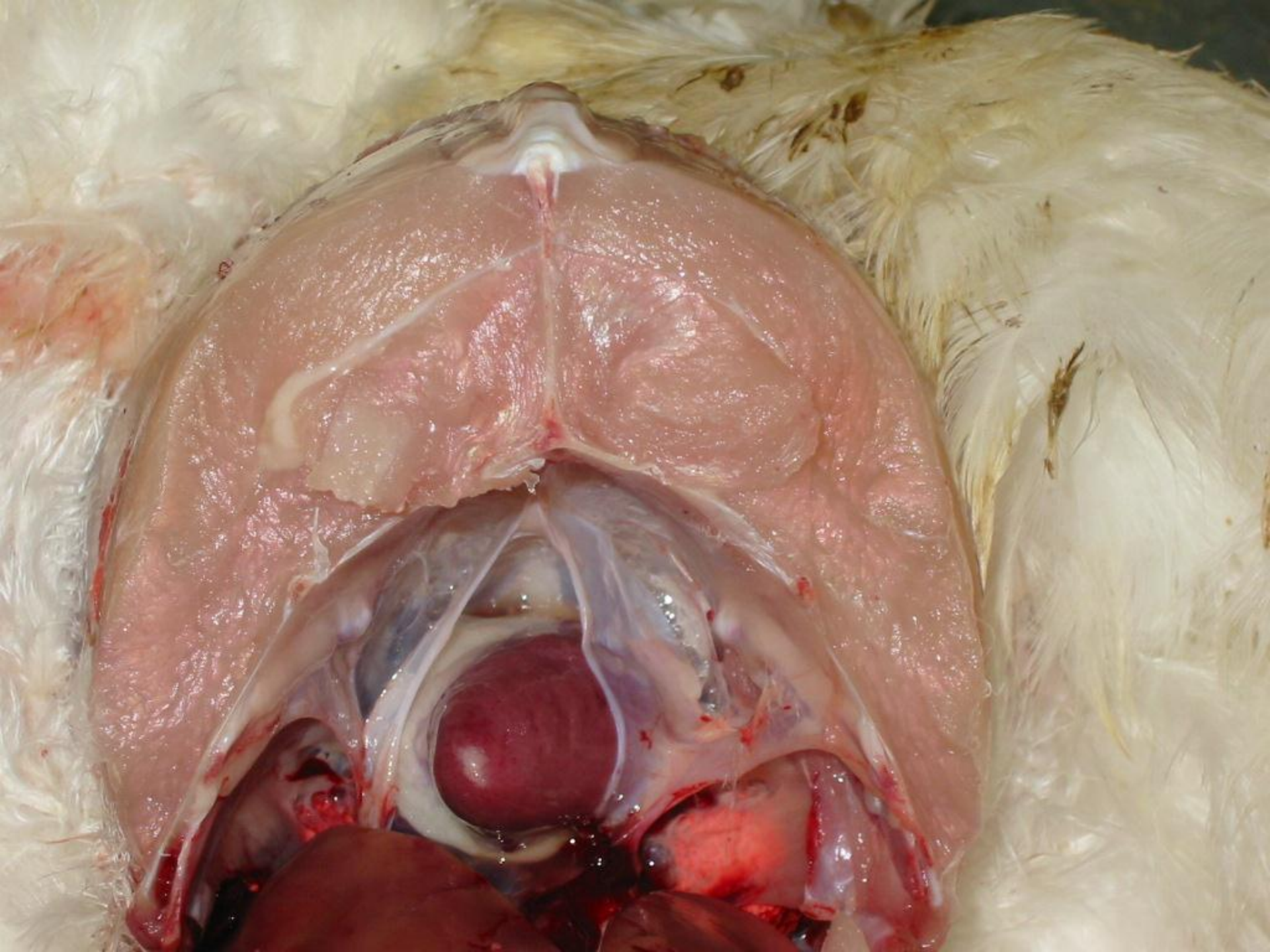




**PROPER FLESHING AT LIGHTING AGE – ROUNDED**  
**达到光照鸡龄时的正确胸型-呈圆形**





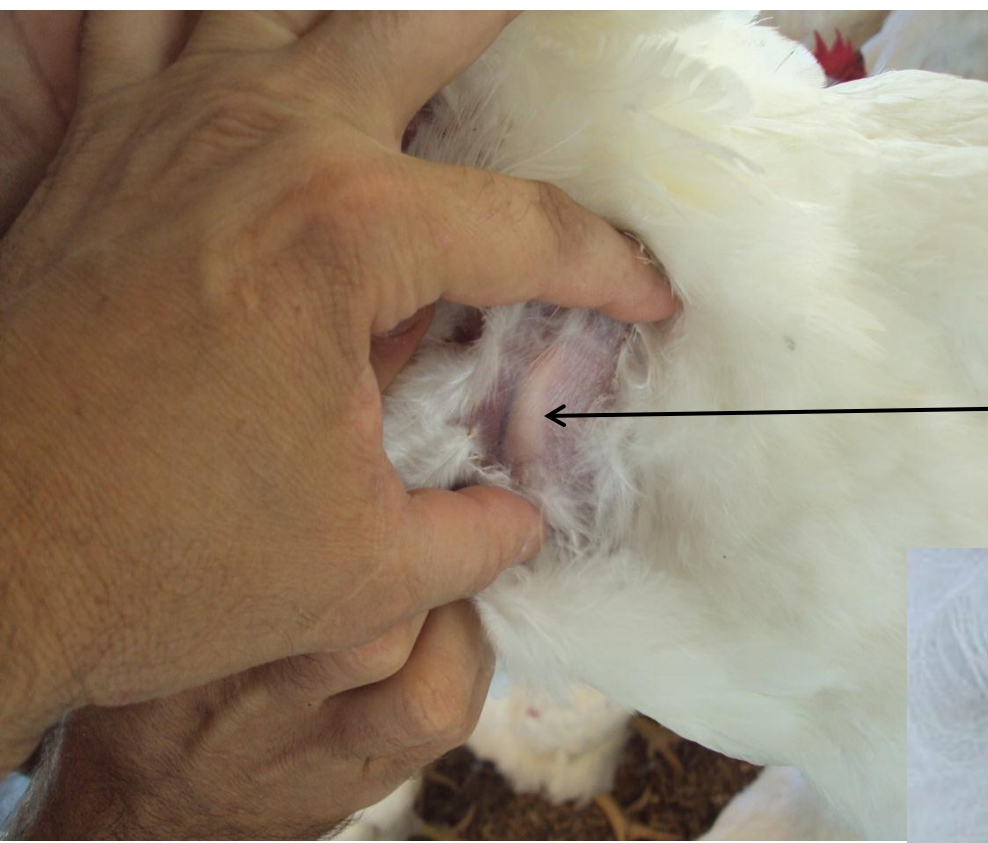






**Opening of 4 cm or around 2 fingers at 22 weeks**  
**22周龄时开口 4厘米或大约2指**



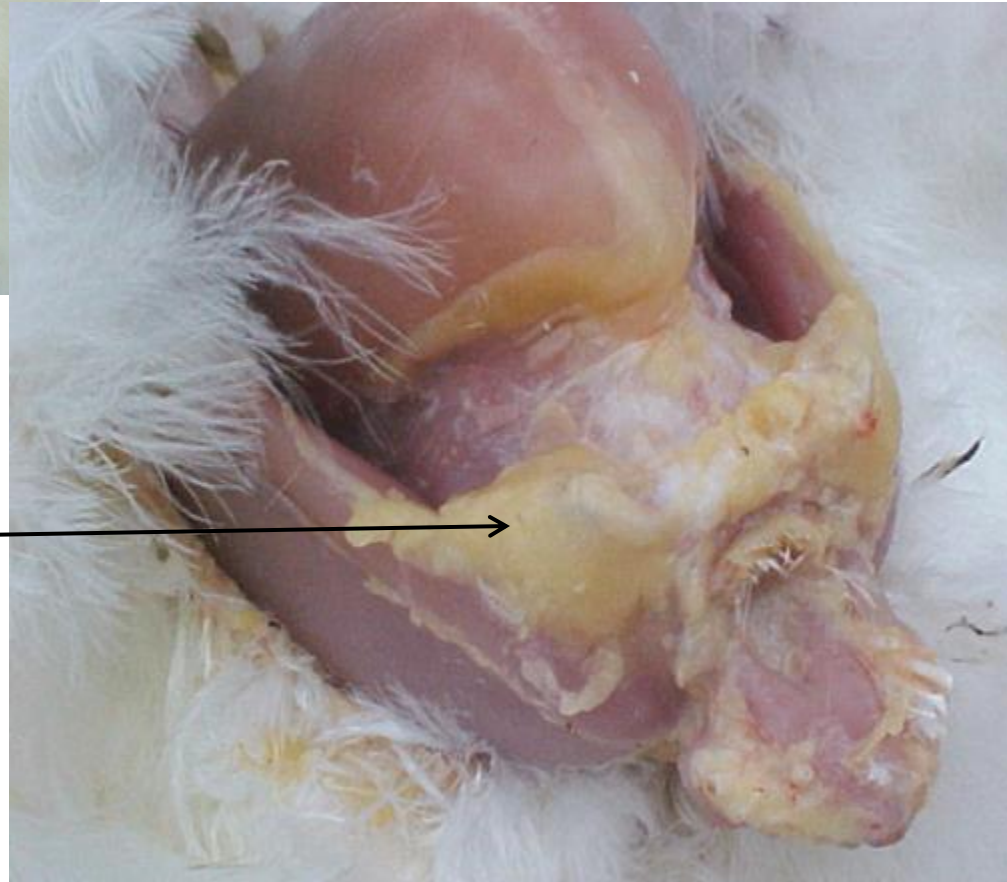


# at lighting 光照时的脂 肪储存



Under wing on the rib cage  
在翅下的肋骨架上

On pin bones 在髌骨上





# Energy Partitioning of the Hen

## “Old Concept”母鸡的能量分配



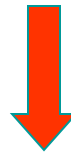
“旧的概念”

Body Weight 体重



Light Stimulation 光照刺激

Growth 成长

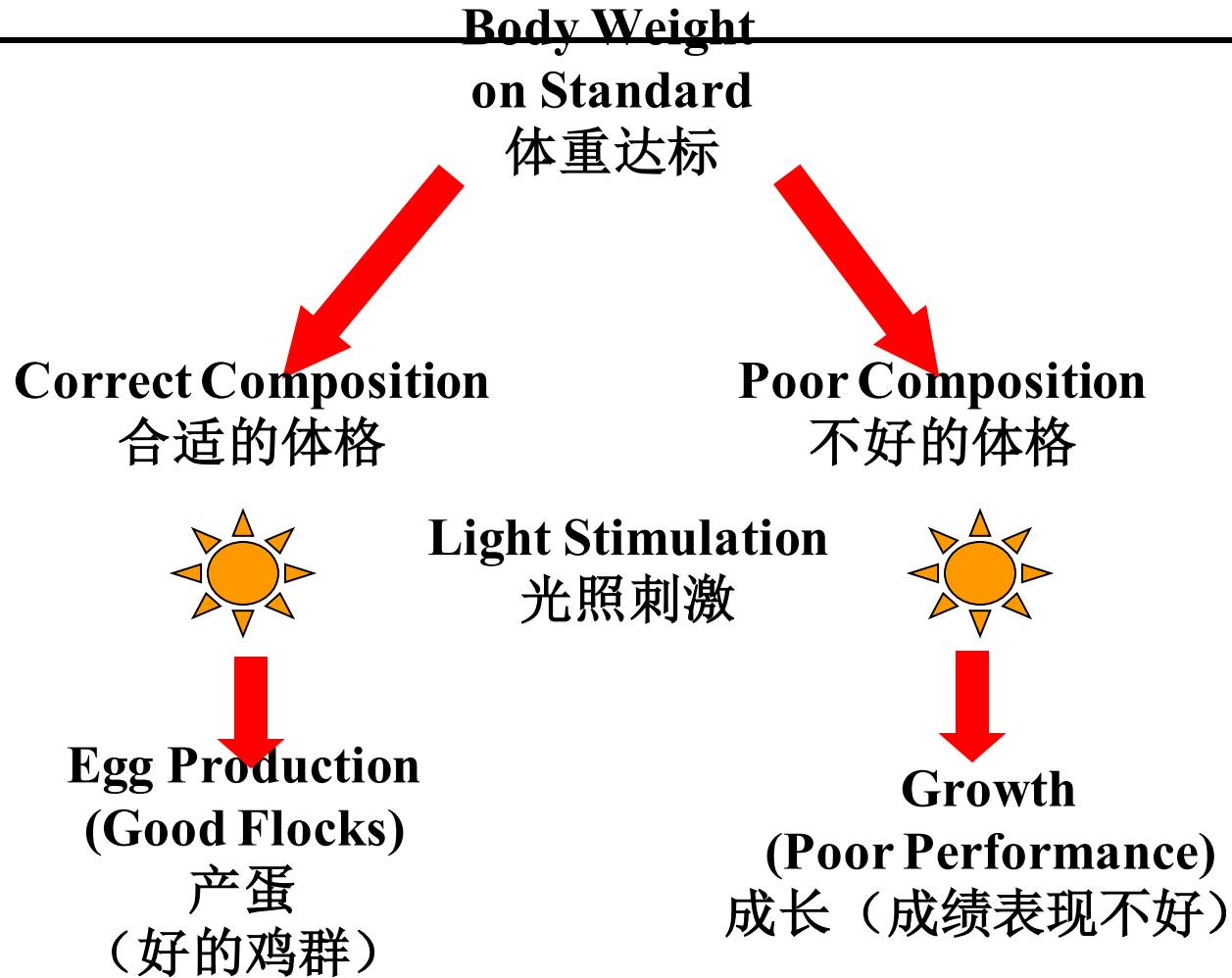


Egg Production 产蛋



# Energy Partitioning of the Hen

## 母鸡的能量分配





# Light Stimulation Response

## 光照刺激响应

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Make sure that the birds are properly fleshed  
and have the proper amount of fat reserve

BEFORE

light stimulation!

确保在光照刺激之前鸡只有正确的胸型和合适的  
脂肪储存



# 1st Light Stimulation to 1<sup>st</sup> Egg

## Lighting Program

从第1次加光到第1枚种蛋

光照程序



Lighting Program for Pullets Reared in Open Sided Housing 对在开放式鸡舍里养成的小母鸡的光照程序		
		Open Sided 开放式鸡舍
1 <sup>st</sup> Light Stimulation 第1次光照刺激	13 hours 13小时	80-100 lux
+ 1 week 1个星期以上	14 hours 14小时	80-100 lux
5% HD	15 hours 15小时	80-100 lux
35% HD	16 hours 15小时	80-100 lux



# 1st Light Stimulation to 1<sup>st</sup> Egg

## Lighting Program

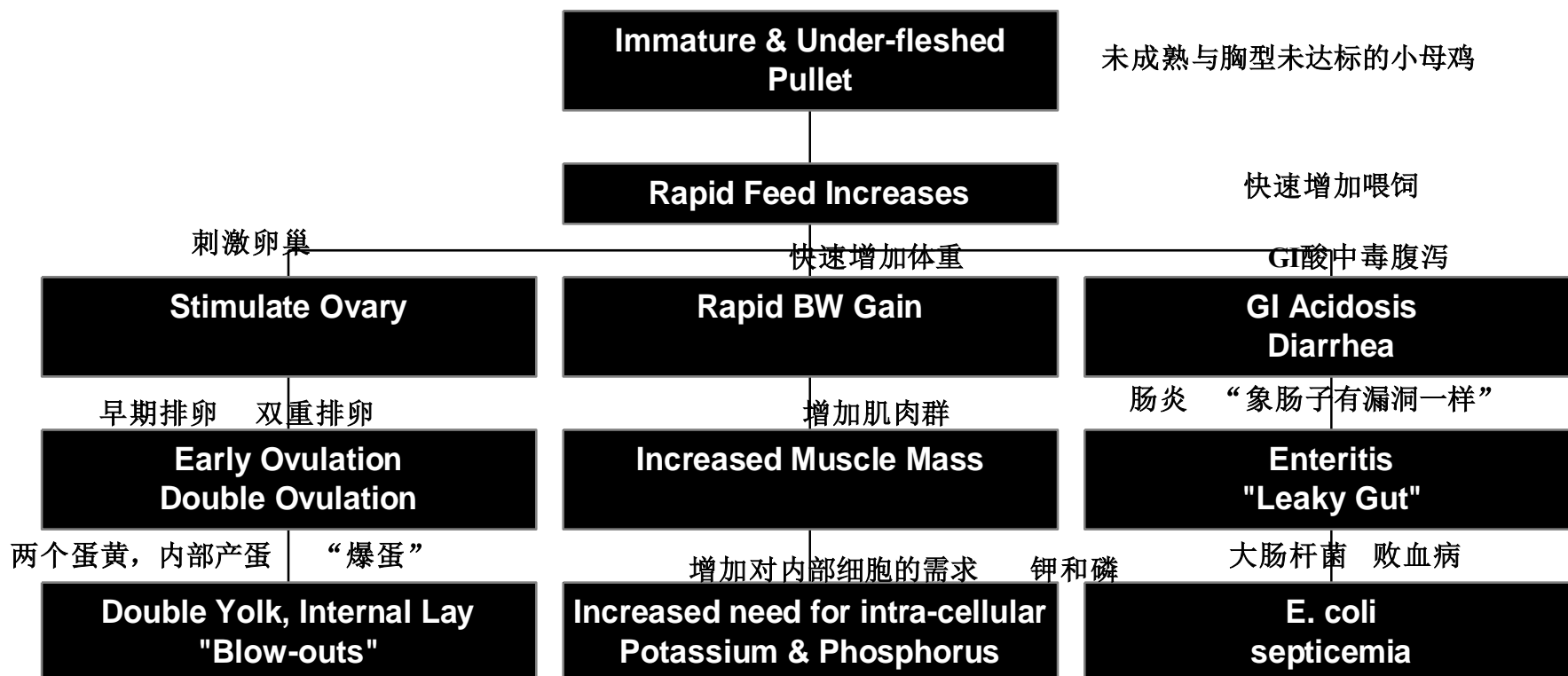
从第1次光照刺激到第1枚种蛋

光照程序



Lighting Program for Pullets Reared in Light Controlled Housing 对在控制光线的鸡舍里养成的小母鸡的光照程序			
		Open Sided开放 式鸡舍	Windowless 没有窗的鸡舍
1 <sup>st</sup> Light Stimulation 第1次光照刺激	13 hours 13小时	80-100 lux	40-60 lux
+ 1 week 1个星期以上	14 hours 14小时	80-100 lux	40-60 lux
5% HD	15 hours 15小时	80-100 lux	40-60 lux
35% HD	16 hours 15小时	80-100 lux	40-60 lux





Ref.: Dr. Ken Powell

参考: Ken Powell博士





**Feeding Curve + Light Program**

**21-30 wks of age**

**喂饲曲线 + 光照程序**

**21-30周龄**



# Production Space Requirements

## 产蛋空间要求



	Floor Space 养殖面积	
	ft <sup>2</sup> /bird 平方尺/鸡只	m <sup>2</sup> /bird 平方米/鸡只
Floor-Open Sided 开放式鸡舍	2.75	3.9
Floor-Closed (windowless) 密封式鸡舍 (无窗)	2.25	4.8
2/3 Slats-1/3 Floor 2/3板条-1/3地板	2.00	5.4
	Feeder Space 料位	
Chain 链式料线	6"/bird 6英寸/鸡只	15cm/bird 15厘米/鸡只
Pan 料盘	12 hens/pan 12只母鸡/料盘	
	Drinker Space 水位	
Nipple 乳头饮水器	6-8 birds/nipple 6-8只鸡/乳头饮水器	
Bell Type 钟式饮水器	80-100/bell drinker 80-100只鸡/钟式饮水器	
	Nest 产蛋箱	
Manual Gather 人工收蛋	4 Hens/nest hole 4只母鸡/蛋窝	
Community 集体	50 Hens//m <sup>2</sup> 50只母鸡/平方米	
Single Hole Automatic 单穴自动收集	5 Hens/Nest hole 5只母鸡/蛋窝	
	Lights 光线	
Open Sided 开放式鸡舍	80-100 lux	
Closed (windowless) 密闭式 (无窗)	40-60 lux	



# Feeding after Light Stimulation

## 光照刺激之后的喂料



- After 1st light stimulation, limit weekly feed increases to small increases (2 to 3 grams per week) until 1st egg.

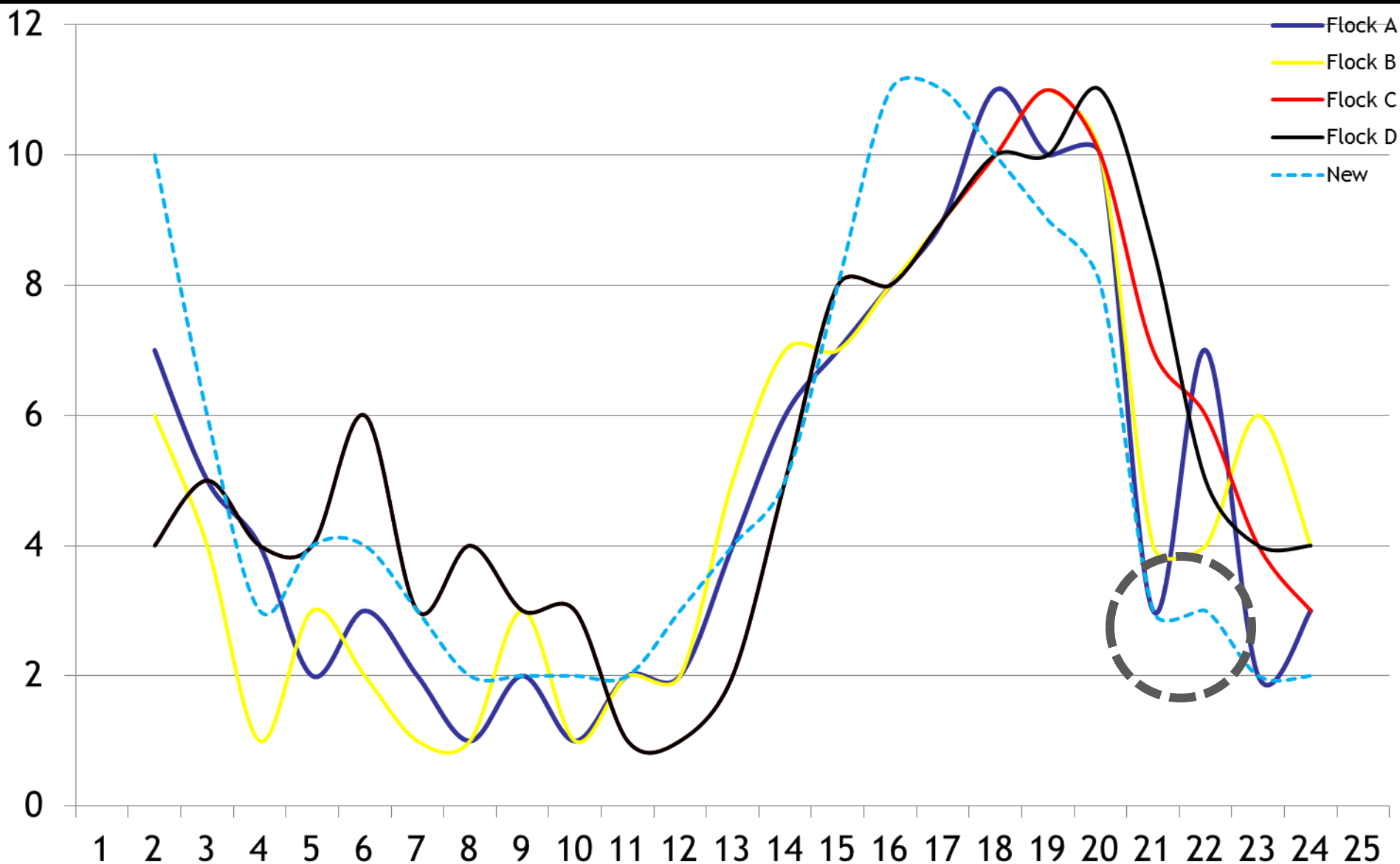
- 在第一次光照刺激后，限制每周饲料增加少量（每周增加2到3克），直到见第一枚种蛋

- the female does not seem to respond positively to large feed increases (20 weeks to 1<sup>st</sup> egg)
- large feed increase attribute more to increases in body weight rather than preparation for lay (ovary development)
- Slowing down the feed increase at this age will also prevent excessive pre peak mortality (due to peritonitis) & high % of DY
- 母鸡看上去并不会对大量增加饲料有积极反应（从20周到产第一枚蛋）
- 大量增加饲料只会更容易让鸡只增加体重，而不会有助于产蛋准备（卵巢发育）
- 在这个鸡龄时放缓饲料增加速度还能避免出现产蛋高峰前的死亡率过高（因腹膜炎）以及高比例双黄蛋



# Feeding Pattern from 20 weeks to 1<sup>st</sup> egg

## 从20周龄到见第一枚种蛋的喂饲规律曲线







Feeding to peak production  
产蛋高峰的喂饲



# Feeding to Peak Production

## 产蛋高峰的喂饲



➤ Once the birds do begin production do not be overly aggressive with feed increases, instead slow feed increases prior to 30-35 % HD production and then more aggressive feed increases after 30-35% HD

➤ 当鸡只刚开始产蛋，不要过快的增加料量，相反，在产蛋率达30-35%前要放缓加料，然后在产蛋率达到30-35%以后后要积极地加料。

- produce good results with excellent bodyweight control
- 在很好地控制体重的情况下产生良好的成绩



# Production Feeding (\*example)

## 产蛋期用料标准（举例说明，供参考）



Production Feed Example 产蛋期用料示范 (Crumble Diet- 2780ME, 15.5% Protein) （破碎料-2780ME，15.5%蛋白质）								
Feed Increase each 5% 料量增加5%				Days天数	Feed Increase each 10% 饲料增加10%			
%HD 产蛋率	+ grams 克数	Feed Amount 饲料量	Calories / bird / day 卡路里/鸡只/天		%HD产蛋率	+ grams 克数	Feed Amount 饲料量	Calories / bird / day 卡路里/只鸡/天
5	2	118	328	168	5	2	118	328
10	2	120	334	172				
15	3	123	342	175	15	5	123	342
20	3	126	350	177				
25	3	129	359	179	25	6	129	359
30	3	132	367	180				
35	4	136	378	182	35	7	136	378
40	4	140	389	184				
45	4	144	400	185	45	8	144	400
50	4	148	411	186				
55	4	152	423	188	55	8	152	423
60	4	156	434	189				
65	4	160	445	192	65	8	160	445





Post peak feed reduction  
产蛋高峰后减饲



# Basic Rules for Feed Reduction

## 减饲的基本原则



### Items to Consider

- Body Weight gain up to peak production (18-20 %)
  - Concept valid with BW between 2.8 - 3.1 kg with production between 0.5 - 3% in the first week of production
- Actual peak production (HD level off for 5-7 days)
- Egg weight
- Feed clean up time (mash or crumbled feed)

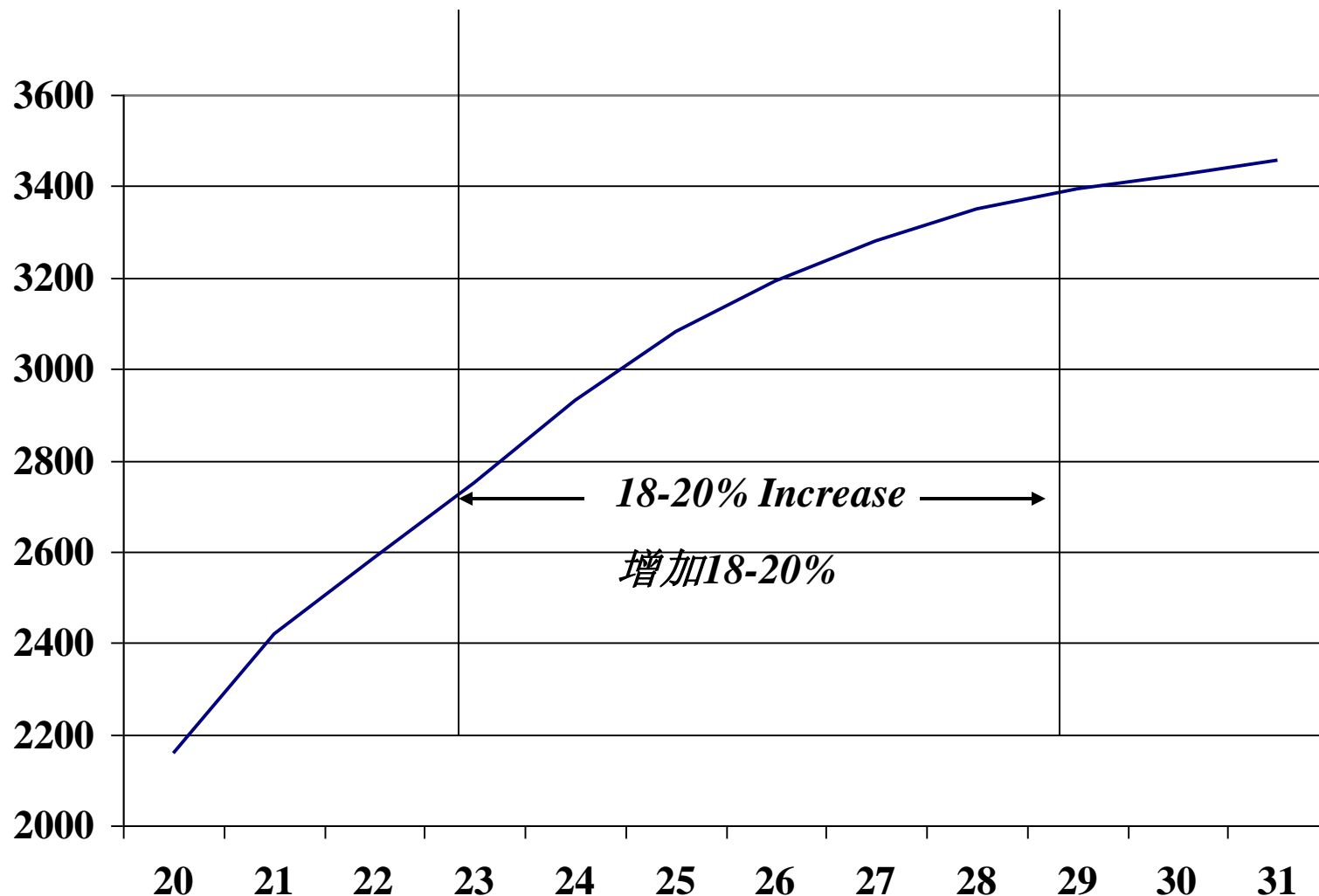
### 考虑因素

- 到产蛋高峰体重增加（18-20%）
  - 产蛋首周产蛋率在0.5-3%之间以及体重在2.8-3.1公斤之间，适用此原则
- 实际产蛋高峰（HD高峰产蛋率稳定5-7天）
- 蛋重
- 清料时间（粉碎或破碎料）



# Weight Gain from Onset to Peak

从产蛋开始到产蛋高峰的体重增加情况







产蛋开始与蛋重关系

### ONSET OF PRODUCTION VERSUS EGG WEIGHTS.

鸡龄  
周龄

Age in weeks	Age at 1 to 3% average weekly production start		
	24 weeks	25 weeks	26 weeks
23			
24	46		
25	48	47	
26	50	49	49
27	52	51	50
28	54	53	52
29	55	55	55
30	56	57	56
31	57	59	58
32	59	60	60
33	60	61	61
34	60	62	61
35	61	62	62
36	62	62	63
38	62	63	64
40	64	64	64
44	66	65	66
48	67	67	67
52	68	67	68
56	69	69	69
60	69	70	69
64	69	70	70

开始平均每周产蛋1-3%  
的鸡龄



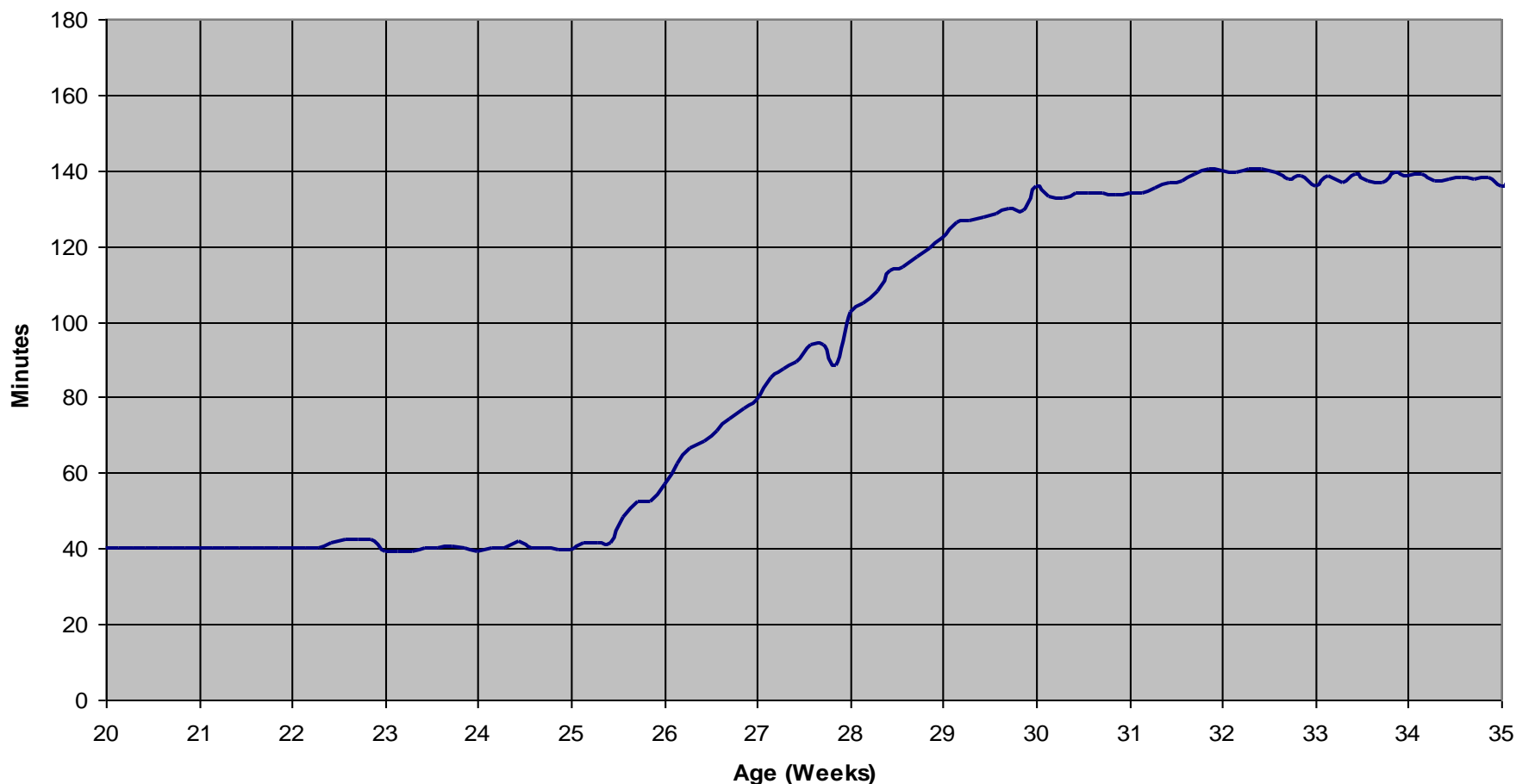
# Feed Consumption Time

## 清料时间



Average Feed Clean-up Time

平均清饲时间



周齡





# Feed Reduction 减饲

Age 鸡龄	HD产蛋率	Feed 饲料	Bodyweight 体重
24	3.0	118	3010
25	18.0	126	3120
26	48.0	147	3240
27	68.0	164	3350
28	78.0	164	3450
29	85.0	164	3540
30	85.0	163	3600
31	84.0	162	3620
32	83.5	161	3640
33	83.0	160	3660

20 %



# Can you Guess Egg Production Profile in this Flock?



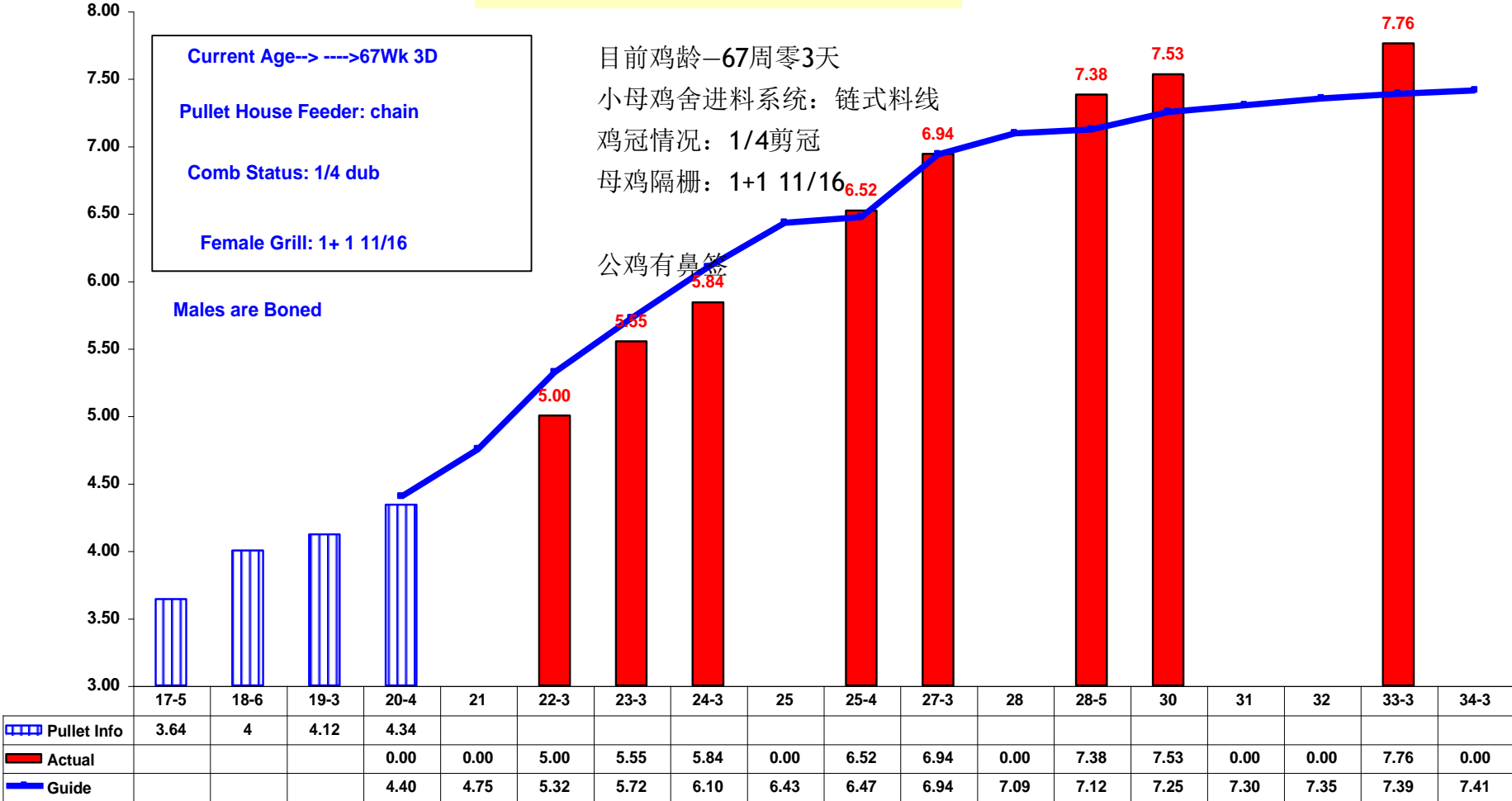
你可以猜猜这个鸡群的产蛋情况吗？

34周时的母鸡体重

CASANO 2

Hen Body Weights to 34 Weeks

Casano 2



小母鸡情况

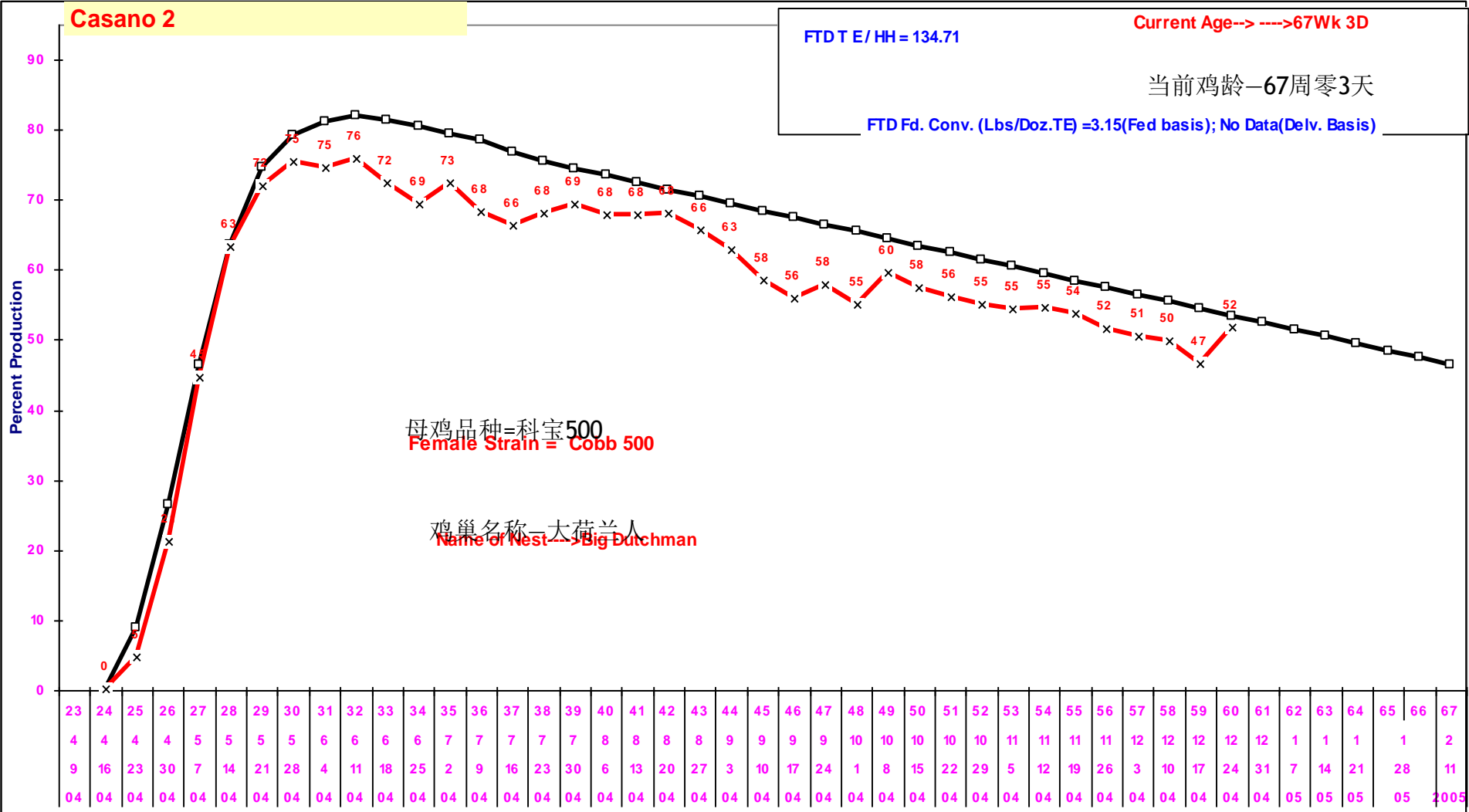
实际情况

指引



Insufficient BW @ Photo-stimulation; inconsistent gains post move; result > delayed production onset; low peak

光照刺激时体重不足；转群后体重增长不稳定；结果造成延迟开产；高峰产蛋率低







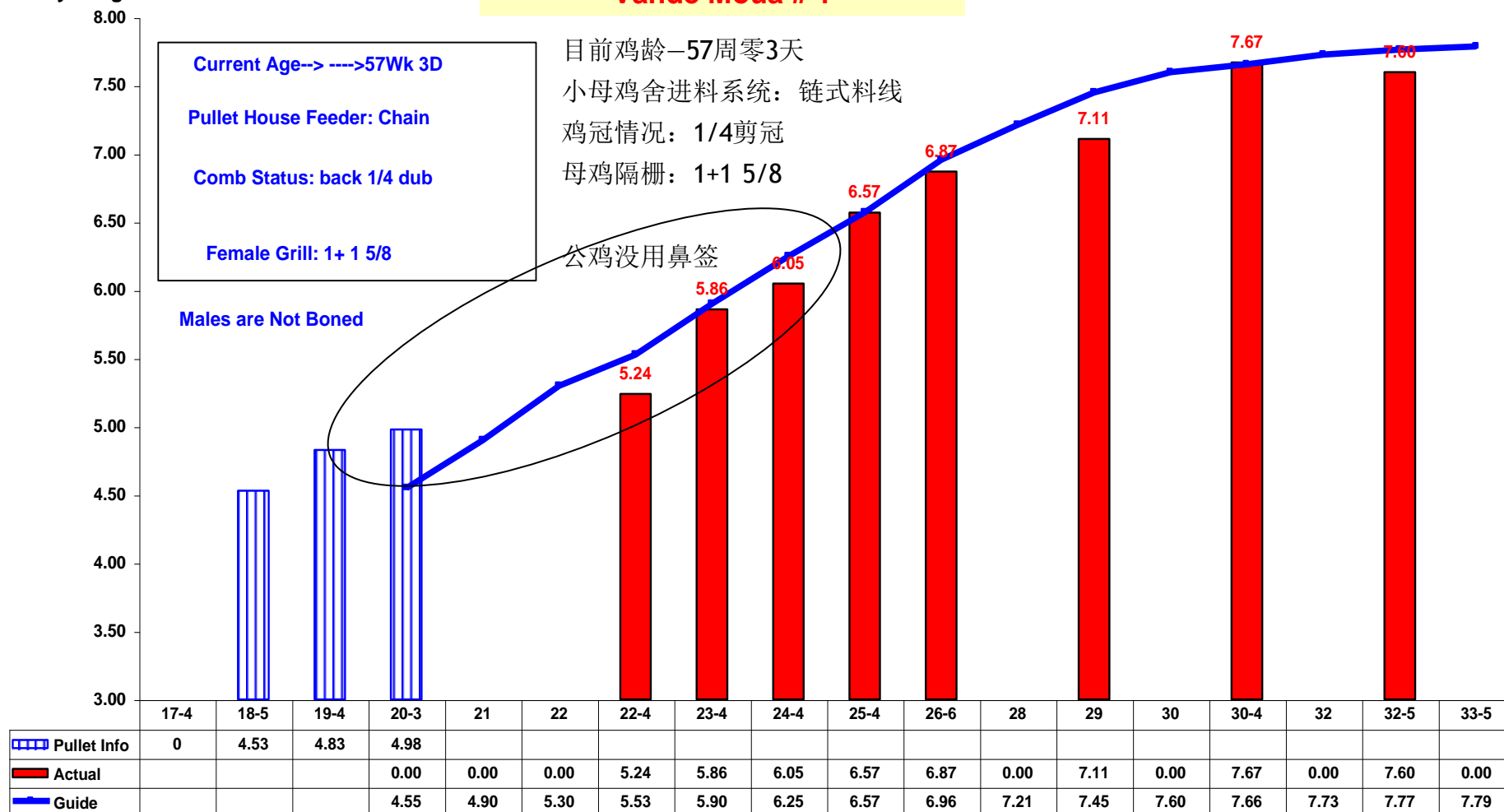
# Transition Error- insufficient gains 20-23 weeks

## 转群出错—20-23周体重增加不足

34周前的母鸡体重

Hen Body Weights to 34 Weeks

Vande Moua # 1



小母鸡情况

实际情况

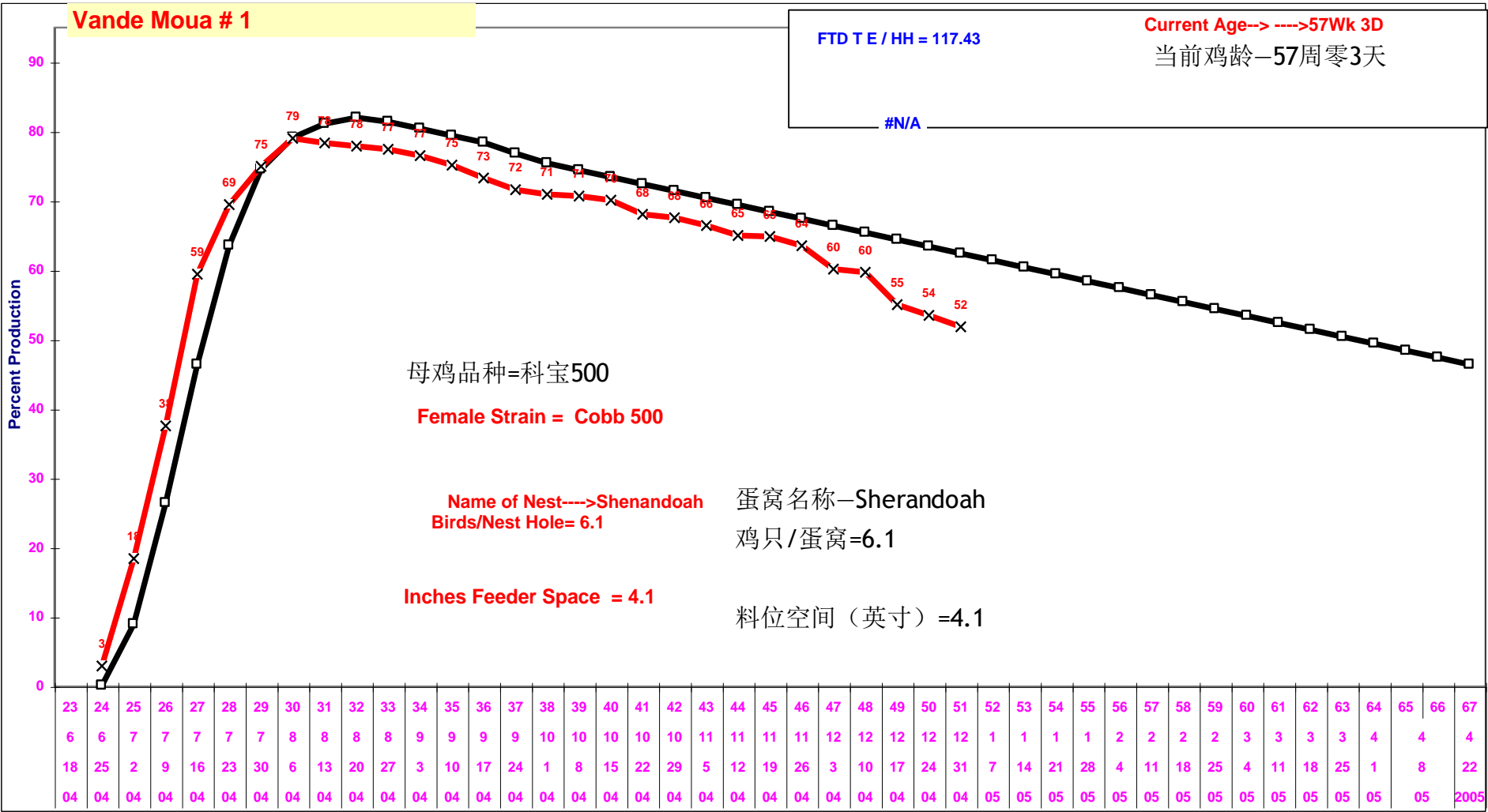
指引



# Overweight pullets- came in Strong but stalled because of poor weight gains for several weeks post move



育成母鸡超重—虽然开产时状况不错，由于转群后数周体重增加不多，造成产蛋率停滞增加





# SUMMARY

## 总结



- Control the body weight early to prevent an overweight flock in production
- Provide excellent management conditions to obtain good flock uniformity (>80%)
- Pullets must gain 34-36% weight from 16-20 weeks to develop enough fat pads and fleshing condition before first light stimulation for proper development of reproductive organ
- Do not over feed the flock after light stimulation, limit the weekly feed increases to 2-3 grams till 5% production.
- Stay close to standard body weight in production.
- Know your flock very well!
- 提前控制体重，预防产蛋时鸡群超重。
- 通过提供完美的管理，取得好的鸡群均匀度（大于80%）。
- 小母鸡必须在16-20周龄期间实现34-36%的体重增加，从而在第一次加光前有足够的脂肪储存和好的胸型来实现好的生殖器官发育。
- 光照刺激后切勿过度喂料，在产蛋率达到5%前限制每周增饲量在2-3克。
- 产蛋期保持鸡只重量与标准体重一致。
- 一定要非常了解你的鸡群状况！



Thank You!!

谢谢！！

