

TROUBLE – SHOOTING

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Multifactorial system

Housing
system

Parasites

Pullet

Stocking
density

Feed/Water

Disease
pressure

Lighting program
Lamps

Vaccination

Nests

Management

In house
climate

Genetics

Performance and Efficiency

Litter



Topics

What does „Trouble-Shooting“ mean ?

Trouble-Shooting & Technical Service

Field cases: issues & solutions

Problem related to equipment and House design.

Problem related to Flock Management in Rearing Period

Problem related to Flock Management in Production Period.

Problem related to stocking density-Feed structure in layers.

What does „Trouble-Shooting“ mean ?



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Provide Solutions for Failing Processes

1 - Diagnostic

2 - Identification of malfunctions

ONE OF OUR TECHNICAL SERVICE CHALLENGES

3 Generate possible causes

4 Eliminate the Potential problem sources

***Correct Mistakes &
Management issues***





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Problem of floor Eggs.

Layer PS Flock – Automatic Nest with floor eggs issue

- ❖ Location : Middle East
- ❖ Investment to save labour : 2 Autonest houses
- ❖ Age : 24 weeks, 50 % production
- ❖ **FLOOR EGGS = 30 %.**
= 42 % within 95% of lay???

HOUSE DESIGN IS THE SOURCE OF THE PROBLEM

- ❖ Slats Area 2.8 m – Floor area 3.2 m
- ❖ Feeding chain & drinker in the litter area

NOT FOR LAYER PS





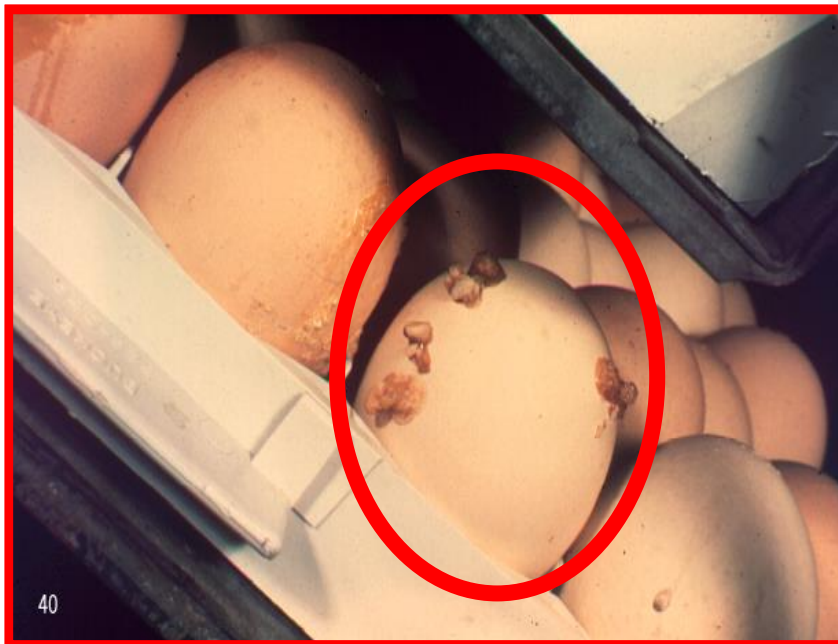
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DO NOT EXPECT CHICKS

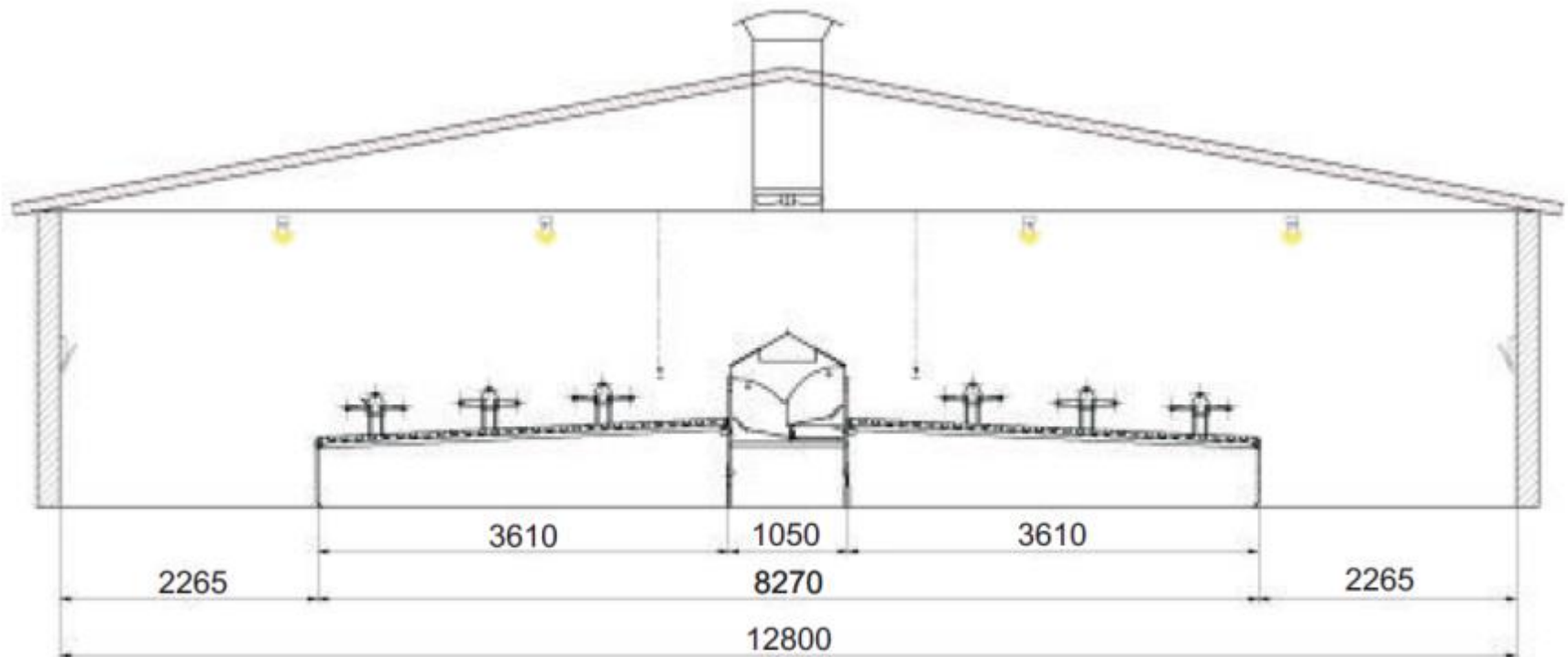


**→ CONTAMINATION OF
YOUR SETTERS**



RIGHT LOCATION OF EQUIPMENT FOR LAYER PARENT STOCK

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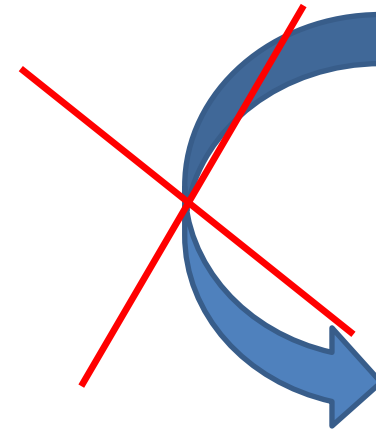
Location of technological equipment in hall

Full-slat area would be even better

Most-visited autonest houses (open houses)



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Problem has been solved by the following recommendations:

- Extend the slats Area to a min. of: 3.6 m.
 - Remove the feed chain from the scratching area to slats.
 - **No feeders or drinkers on the floor area for the LAYER PS**
 - Make sure all birds sleep on the slats from the first day on, after the transfer to production houses.
 - Start moving the birds after transfer daily, on the slats before lights are turned off (The birds need a couple of days to learn it)
 - Supply sufficient nesting space 1 m² nest space per 120 females
 - Open the nests about 1½ hours before lights goes on
- Lighting program, feeding time, and all other management issues are clearly described in the PS MG.***



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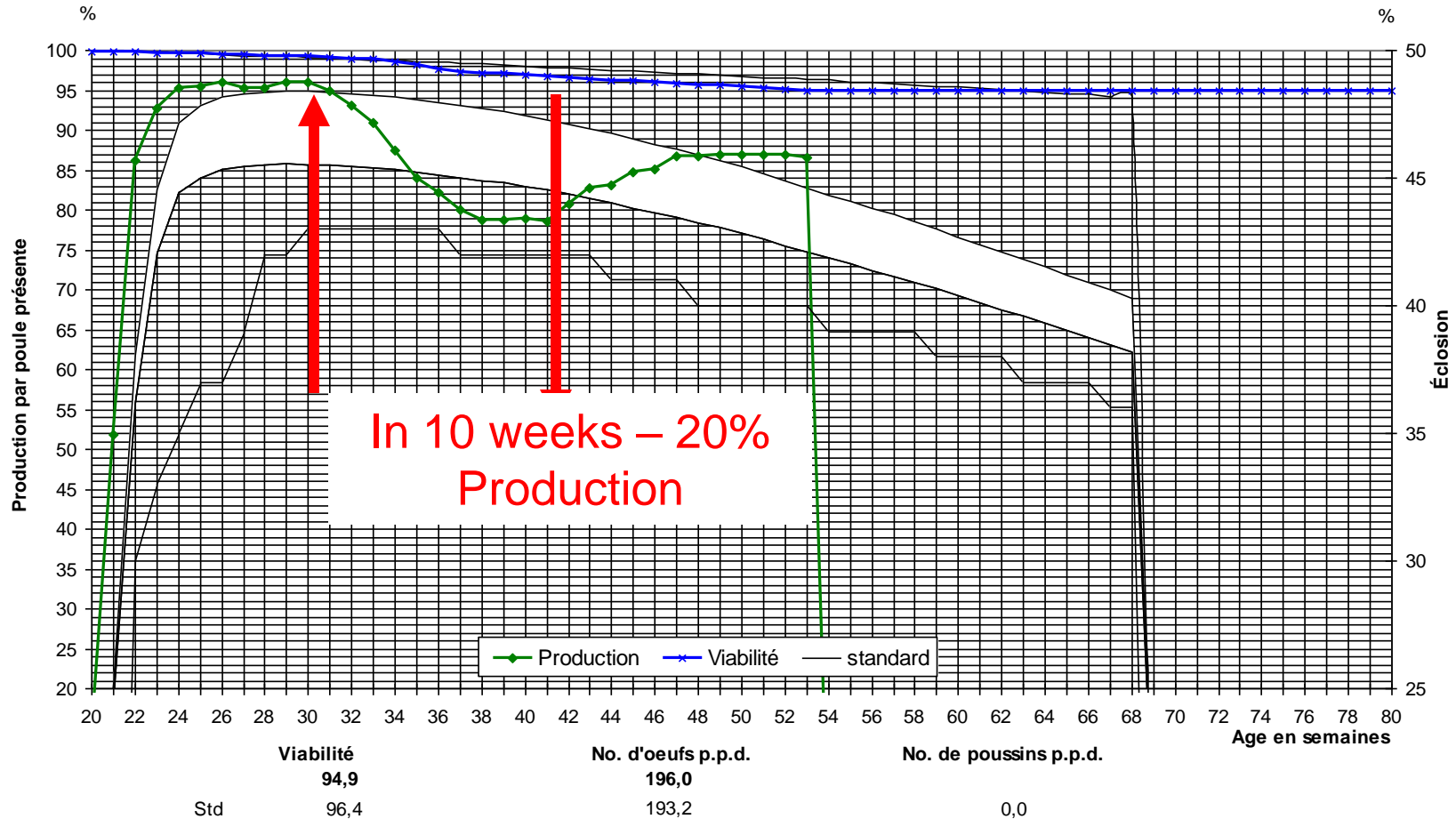
Problem related to Flock Management.

White PS Flock in Europe

- 11200 PS Flock.



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Production house 2000 m²

(50% brown- 50% White birds).



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White 11200 fem.

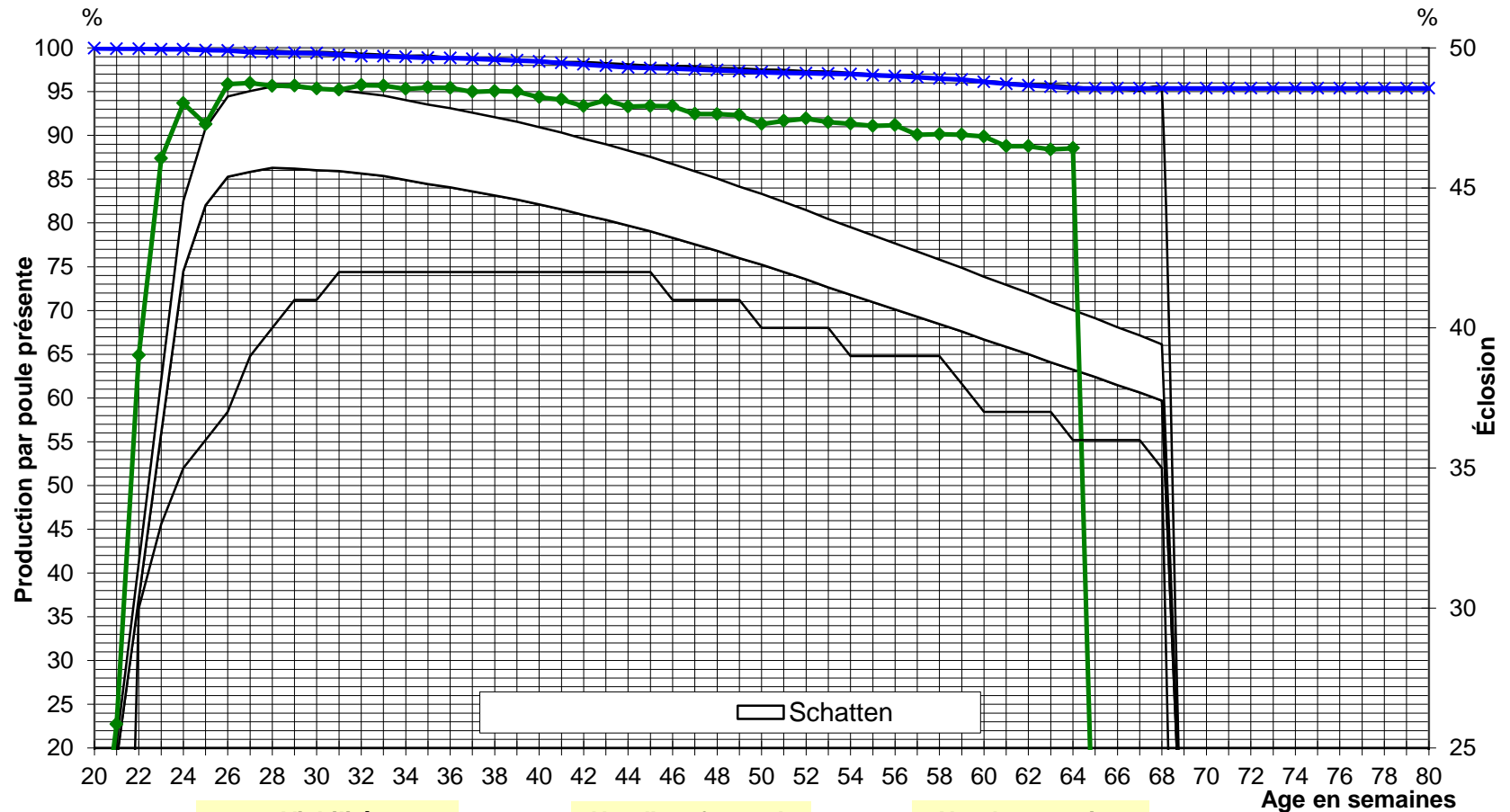
Brown 11200



Brown PS production chart in the same house



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Viabilité
95,9
Std 96,0

No. d'oeufs p.p.d.
255,6
229,3

No. de poussins p.p.d.
0,0

Recipe No.:	5	Name	LSL parent stock Layer Phase 1; 20 to approx. 50 weeks	
Version No.	1	Ref.: 2	VB 62 LOHMANN FRANCE	12.12.2006 21:57:52
Batch No.		Ordered terms	<div> <div>▼</div> <div>No.</div> <div>Name</div> </div>	
Constraints No.	2054	<input type="checkbox"/> blocked	<div>13</div> <div>Lohmann white parent stock</div>	
GMP				

From blood and organs samples => No diseases !!!!!!!!!

[illegible]

Amount:	100,00	Price	14,92
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Normal / Expanded / Soll 0,00% / Kosten /

No.	Nutrient	Unit	Minimum	Contents	Maximum
1	drymatter / Trockensubstanz	%		88,08	
40	ME - WPSA in MJ / ME WPSA	MJ	11,40	11,16	11,50
41	ME - WPSA kcal / ME WPSA	kcal	2.740	2.663	2.800
2	Crude Protein / Rohprotein	%	16,70	17,60	17,80
5	crude fat / Rohfett	%		4,23	
6	crude fiber / Rohfaser	%		3,57	
8	crude ash / Rohasche	%		11,54	
9	starch / Stärke	%		39,04	
10	sugar / Zucker	%		3,59	
11	starch+sugar / Stärke+Zucker	%		42,62	
12	calcium / Calcium	%	3,65	3,25	3,85
13	phosphorus / Phosphor	%	0,56	0,56	0,59
15	phosphorus av. / Verf.Phosph	%	0,38	0,26	
16	sodium / Natrium	%	0,15	0,16	0,16
19	chlorine / Chlor	%	0,15	0,21	0,16
46	lysine / Lysin	%	0,76	0,85	
48	dig.lys-poult./V.Lysin-Gefl.	%	0,62	0,51	
49	methionine / Methionin	%	0,37	0,42	
51	dig.meth-poult./V.Meth.-Gefl.	%		0,38	
52	methionine+cyst / Meth.+Cysti	%	0,70	0,74	
54	dig.m+cyst-poult / V.M+C-Gefl	%	0,57	0,63	
55	tryptophan / Tryptophan	%	0,18	0,20	

One Colum	Required values	Restrictions	Soll	Kosten
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FLIMIDATEN

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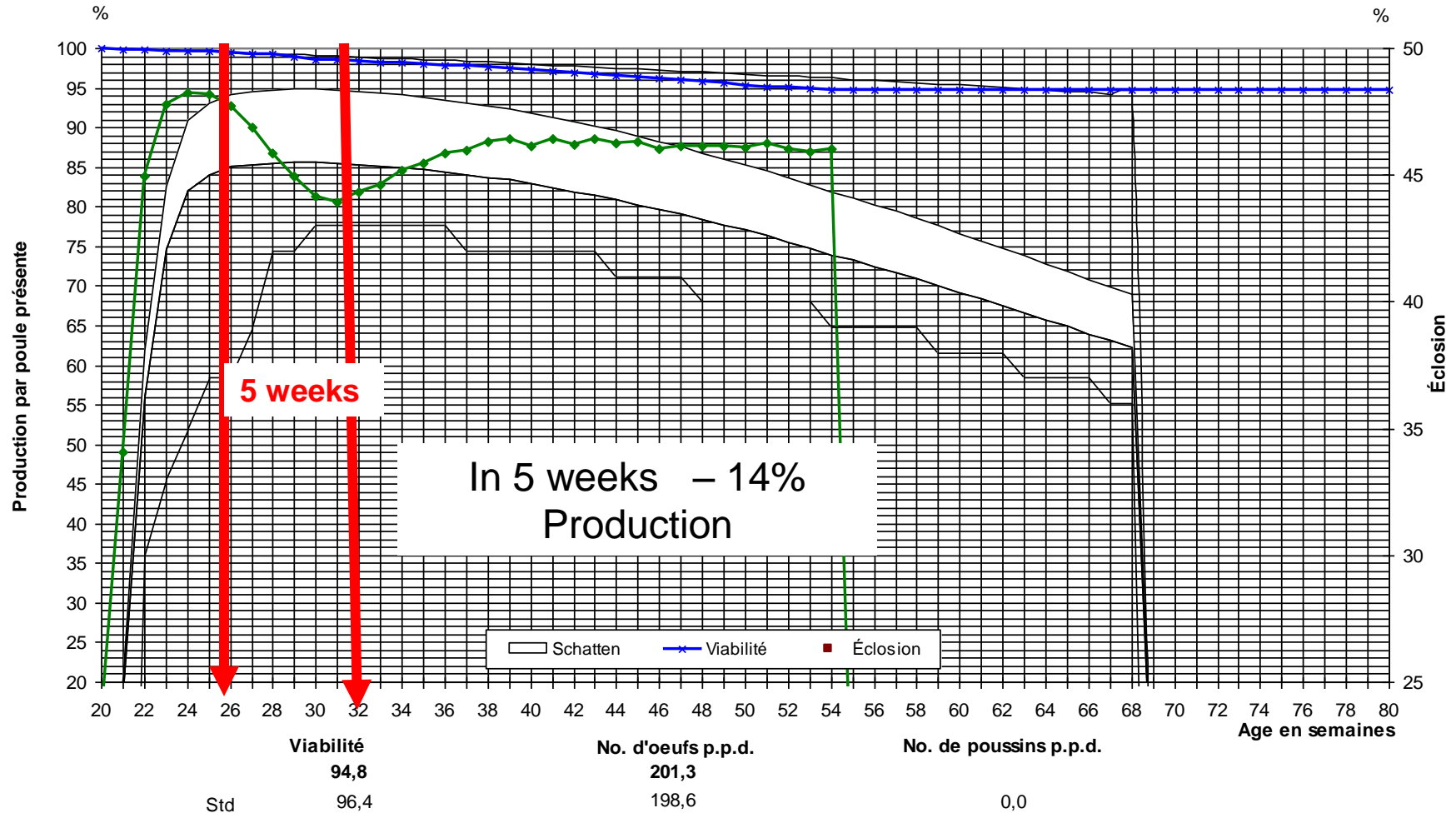
Production Drop - White PS Europe

11200 females + 1160 males.

Following flock



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CHECK THE MALES BEHAVIOUR !!!!!



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That happens between 4 pm-7pm

NO solutions without daily observation



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Remove 200 males to reach (8.5%) only



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18 weeks : Start with a max. of 10% with
2.5% separated by a partition

25 weeks Release the 2.5% males
gradually within 4 weeks,
and check the flock behaviour!!!

40 weeks 8.5% (sort out the weak males)

70 weeks 7.5%





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Problems related to Rearing Management.

Current Issues on PS and Commercial layers in the rearing period

- 1. The body weight of pullets is below standard**
- 2. Bad Uniformity.**
- 3. Fatty birds before transfer.**
- 4. The egg weight at the start of production is below the standard**

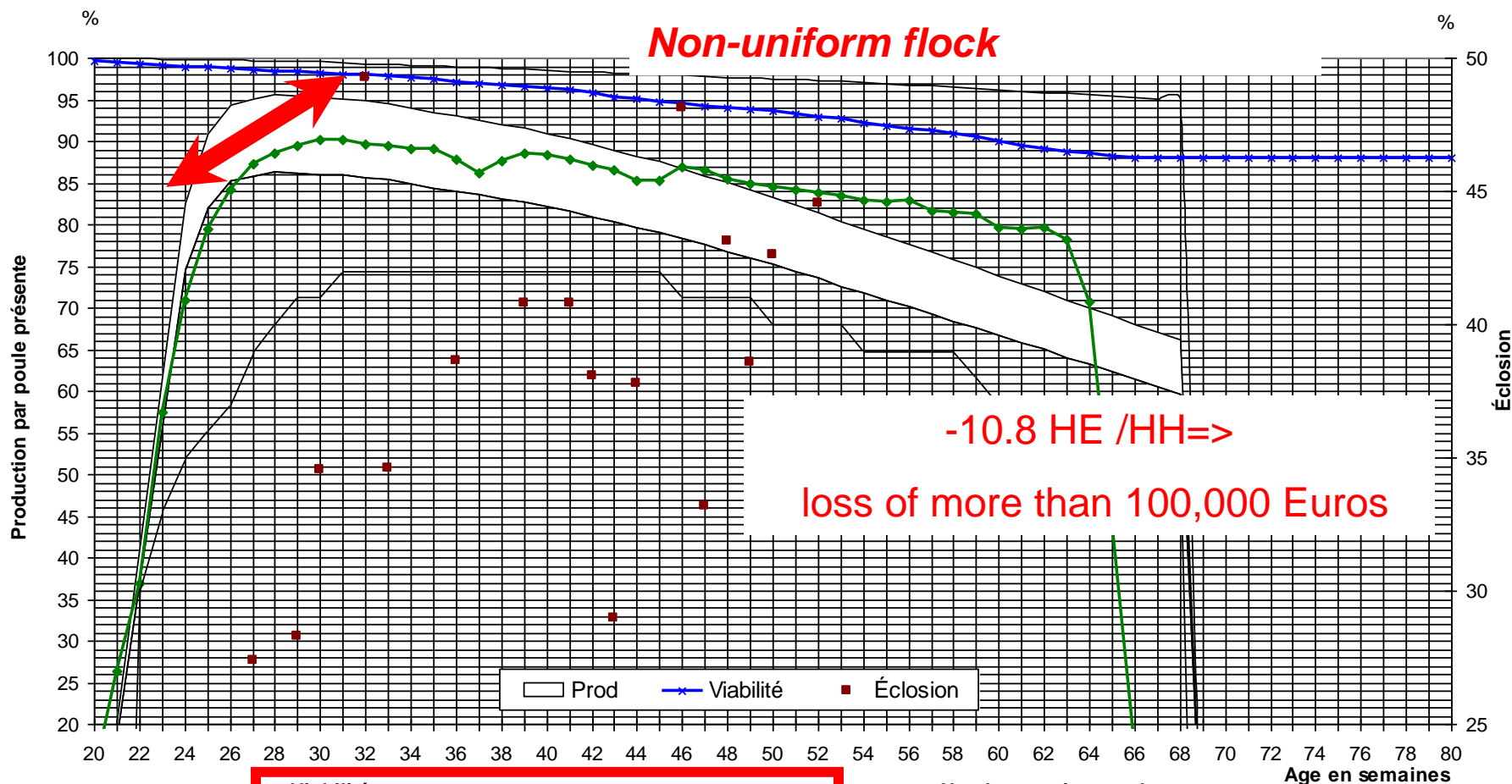


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34000 Brown PS Not reaching the peak of production (North Africa)

BW in the rearing < the standard

Non-uniform flock



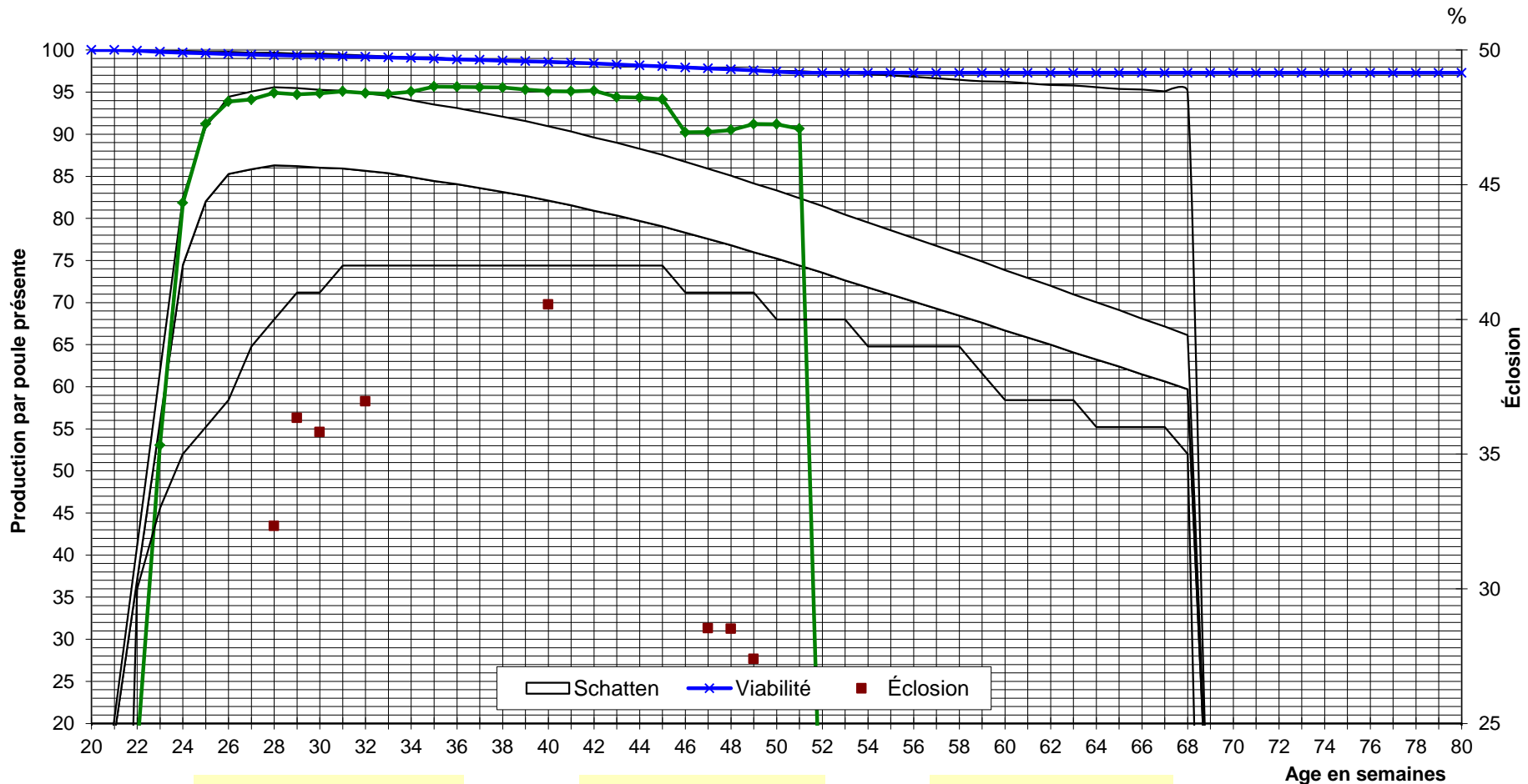
	Viabilité	No. d'oeufs p.p.d.	No. de poussins p.p.d.
	88,0	244,0	77,2
Std	95,1	256,4	69,4

The same farm - one year later

34000 Brown PS reaching the peak (North Africa)



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Viabilité
97,3
Std 97,5

No. d'oeufs p.p.d.
185,9
178,5

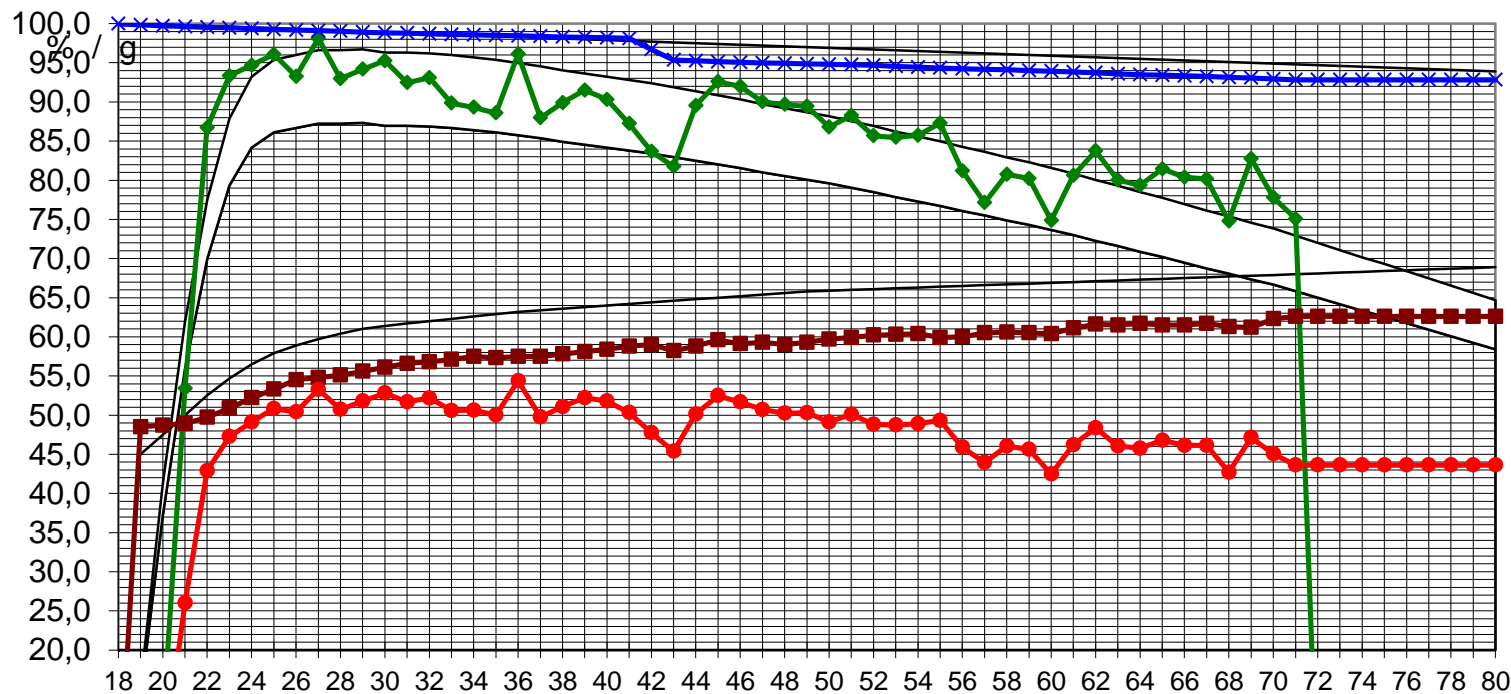
No. de poussins
p. 55,8
65,4

Commercial-case related to rearing



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- Unbalanced Performance
- Egg weight too low / feed intake and liveability are not fitting to customers expectations !!!



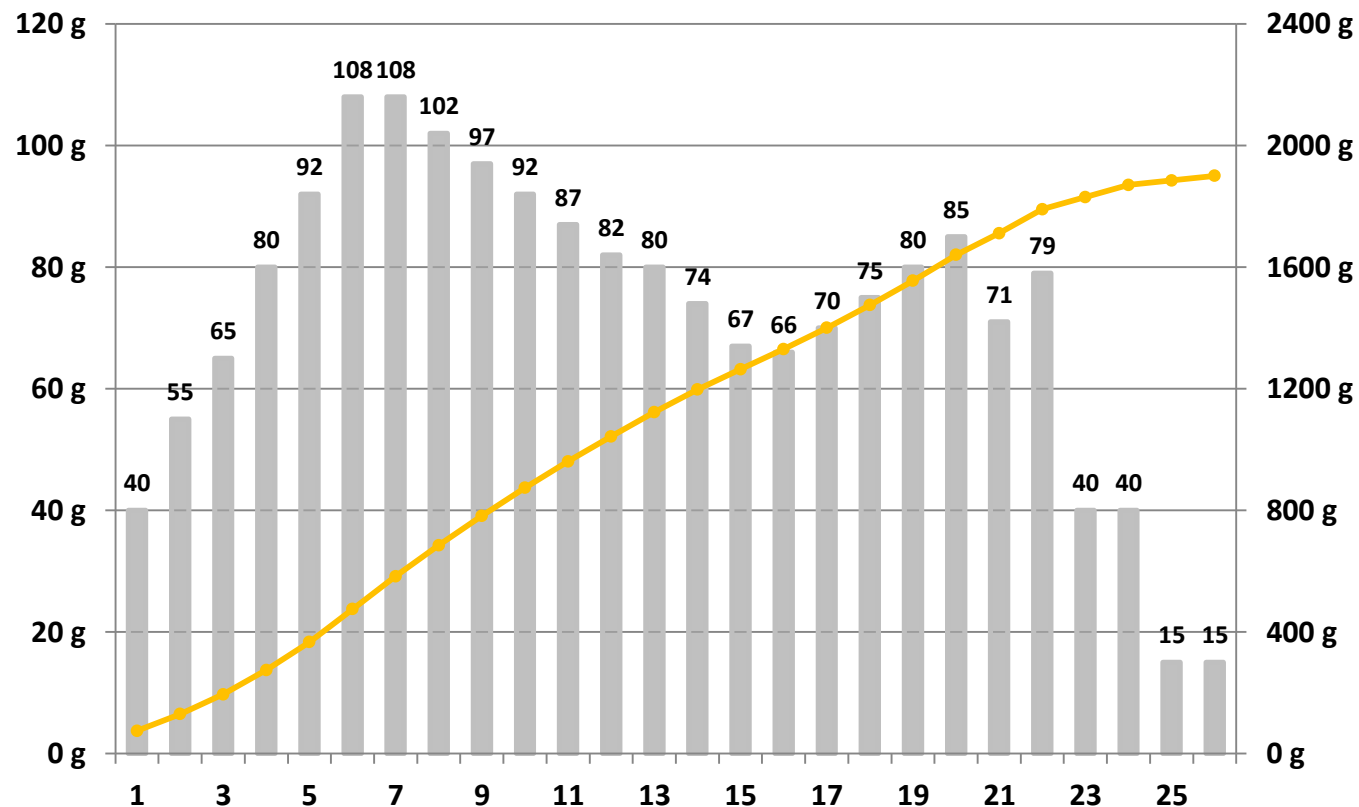
?



How can the rearing influence BW- EW- Feed intake !

HOW IS REARING RELATED TO PRODUCTION ISSUES ???

Body weight development of Lohmann Brown pullets

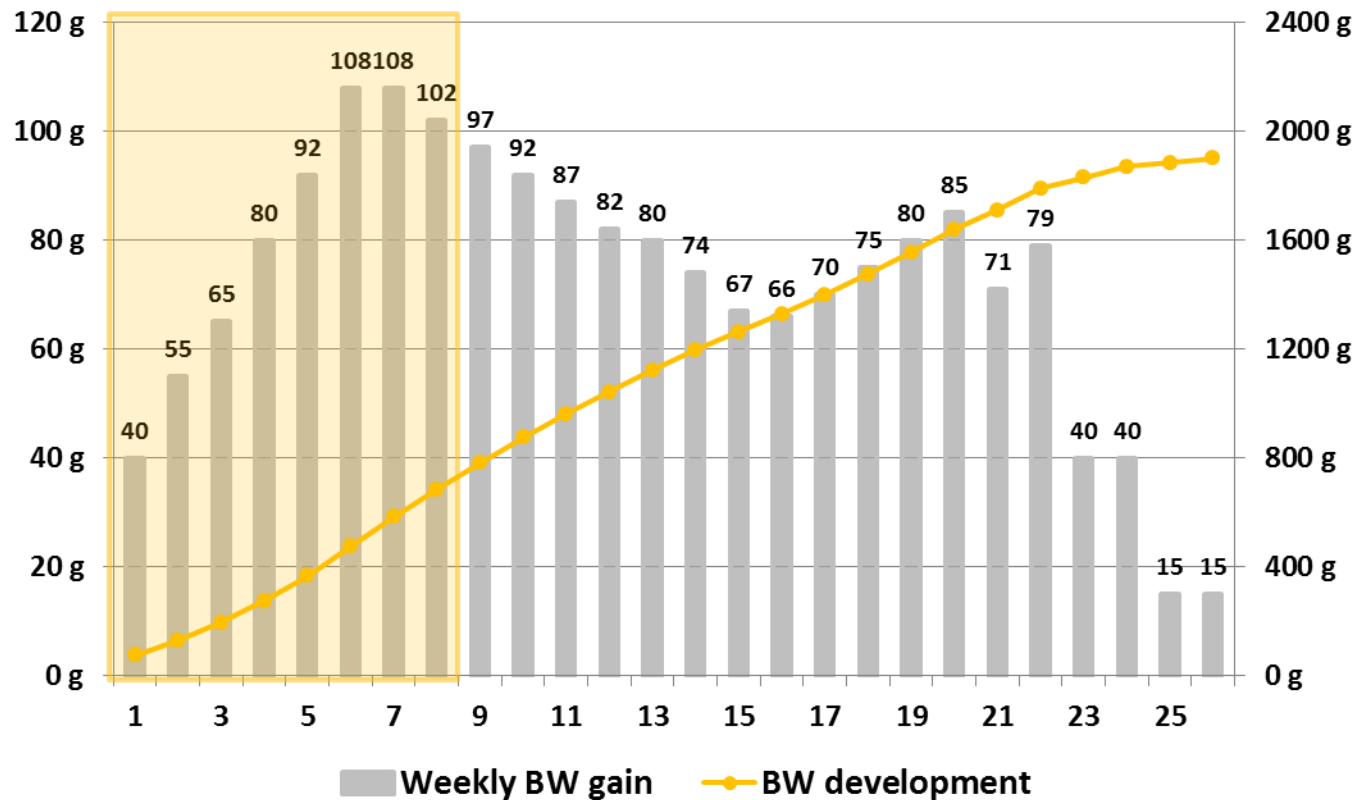


2 – Management of pullet in the rearing



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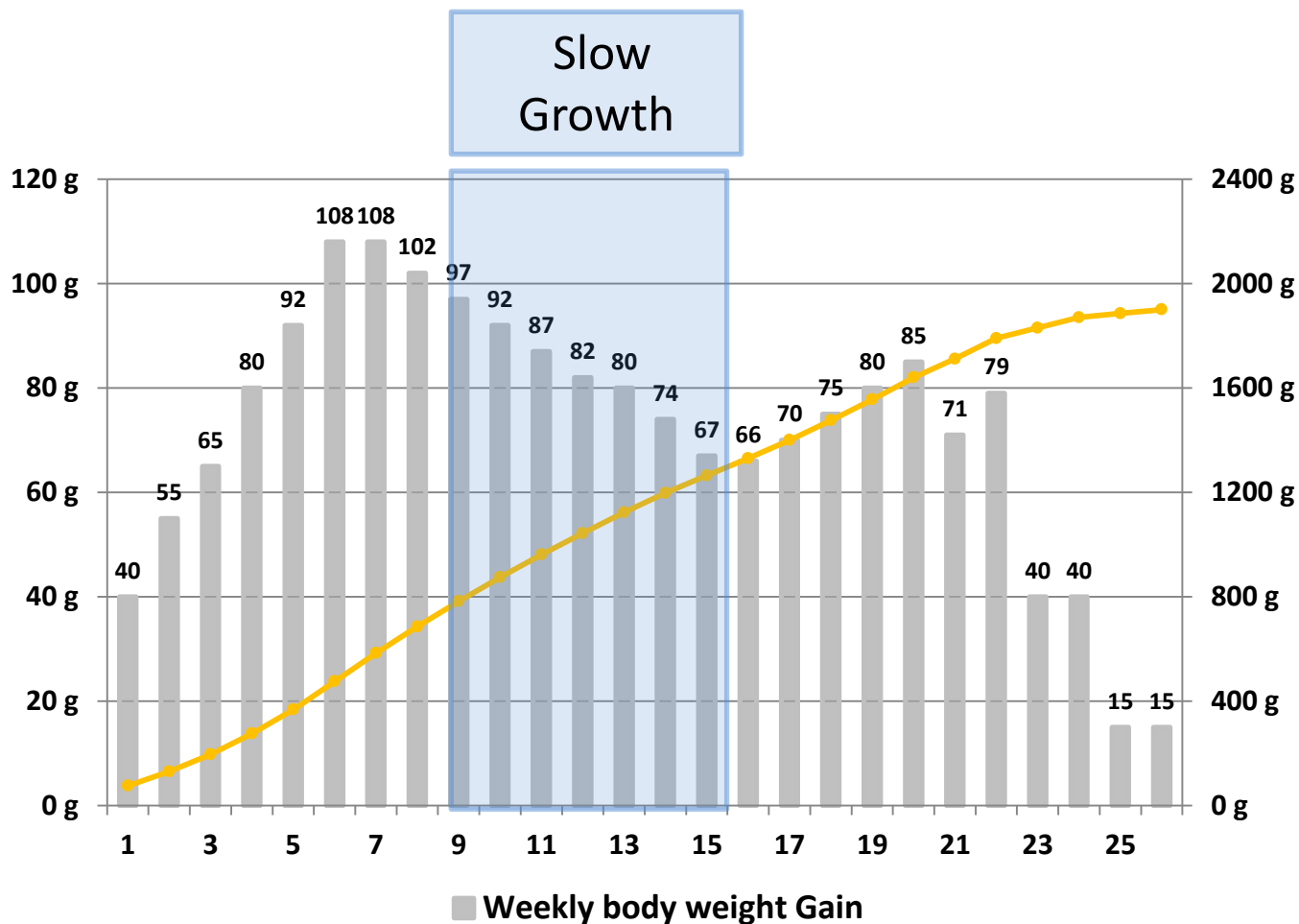
Rapid growth



2 – Management of pullet in the rearing



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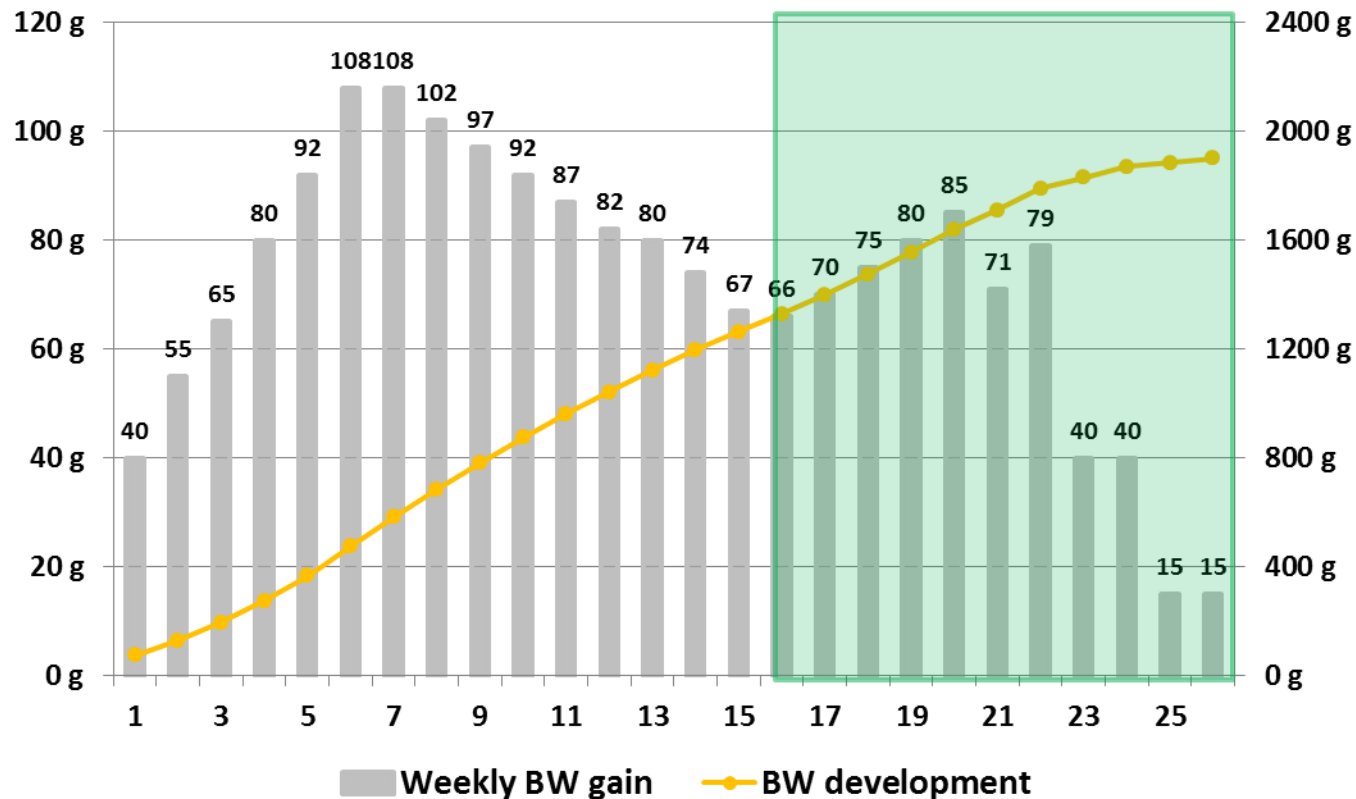


2 – Management of pullet in the rearing



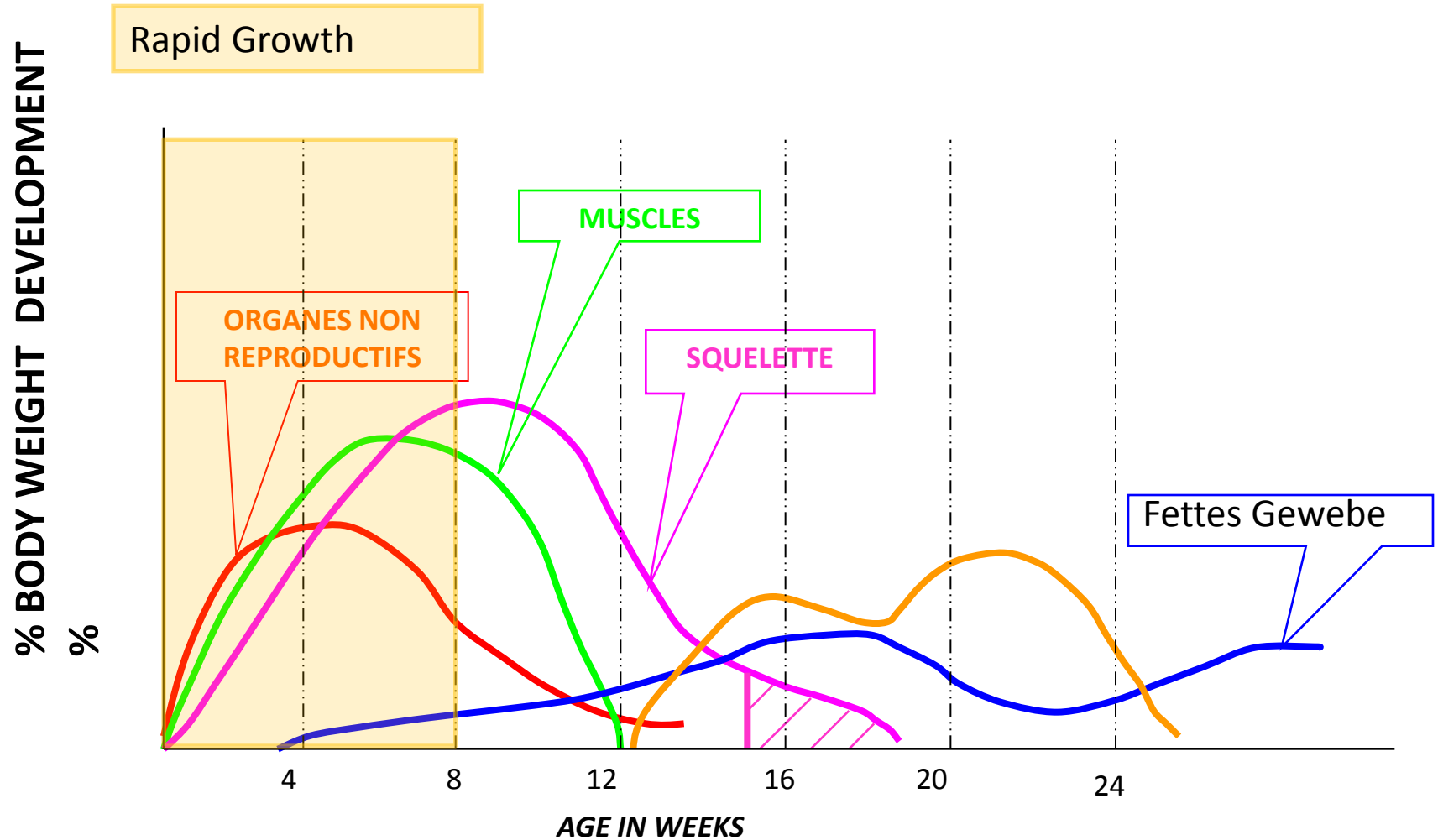
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Sexual maturity



*That's why a min. of 3 phases in feeding is necessary:
Starter > Grower > Developer*

2 – Management of pullet in the rearing



How important are the first 8 weeks of age ?



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Positiv correlation

	Body weight in 5 weeks	Uniformity in 16 weeks
Early sexual maturity	0.63	0
Persistency of lay	0.82	0.46
No. of eggs per hen	0.93	0.72
Viability	0.65	0.61

**Monitoring of body weight should start
from the first week of age**

Birds start laying in the rearing phase !!!!!!!!!!!

FCR IN THE REARING



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FEEDING 0 - 8 WEEKS

	LOHMANN BROWN	LSL
Body weight gain	685 g	624 g
Feed	1.764 Kg	1.652 Kg
Feed/Kg BW	2.57	2.65

FEEDING 9 - 16 WEEKS

	LOHMANN BROWN	LSL
Body weight gain	715 g	590 g
Feed	4.081 Kg	3.976 Kg
Feed/Kg BW	5.71	6.74

MANAGEMENT OF PULLETS

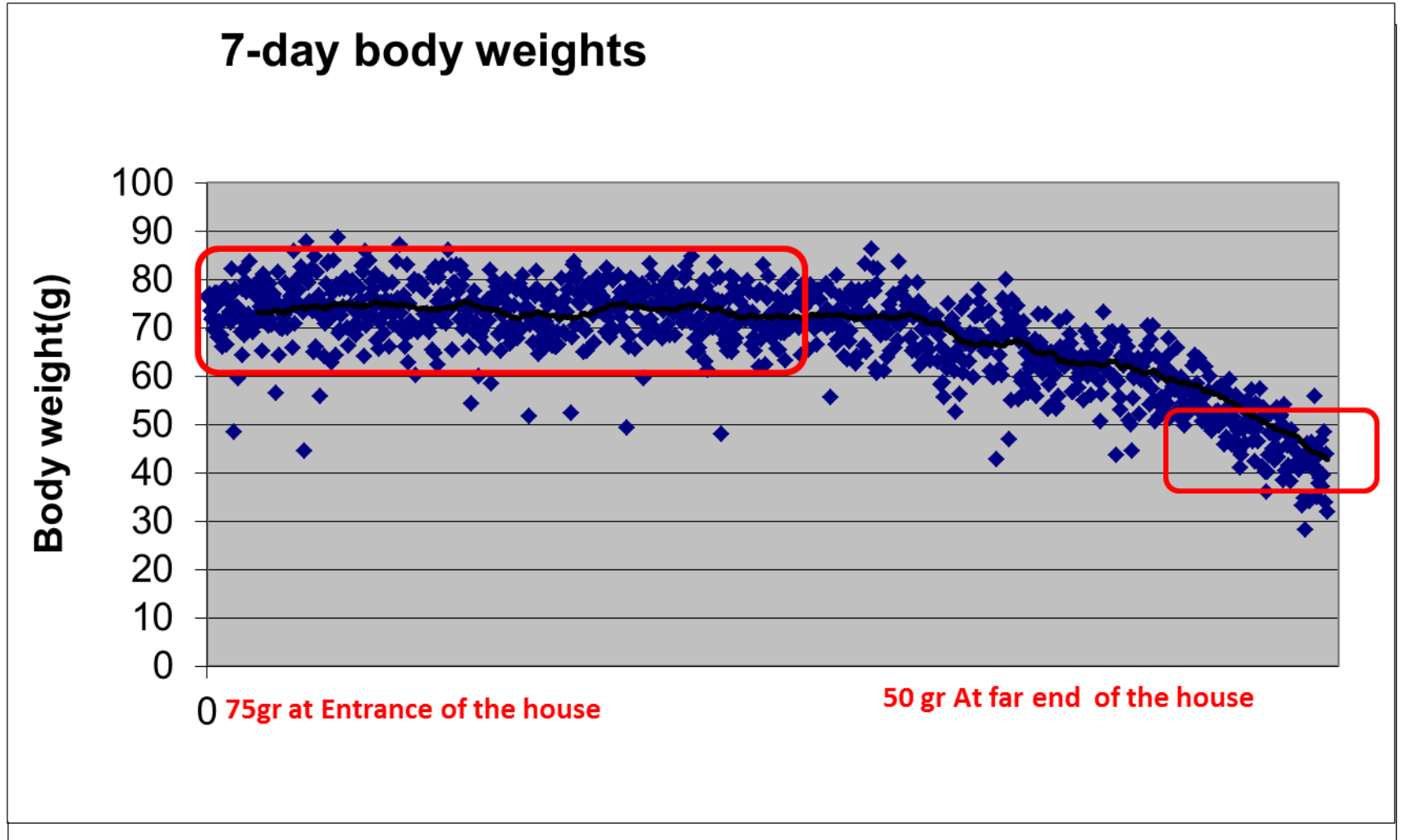


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- ✓ One of the most important investments for the rearing farm
- ✓ Without a scale, you are practically driving '*blind*'.
- ✓ How many birds are you weighing??



Large variation 7-day body weight



Quality of drinking water

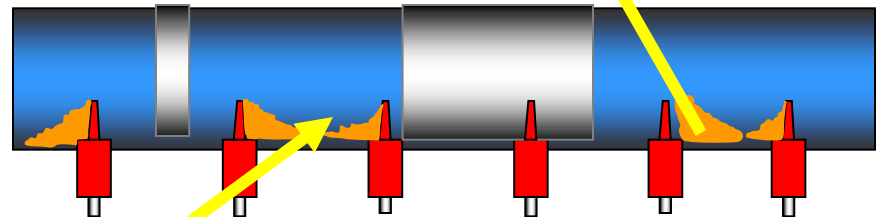
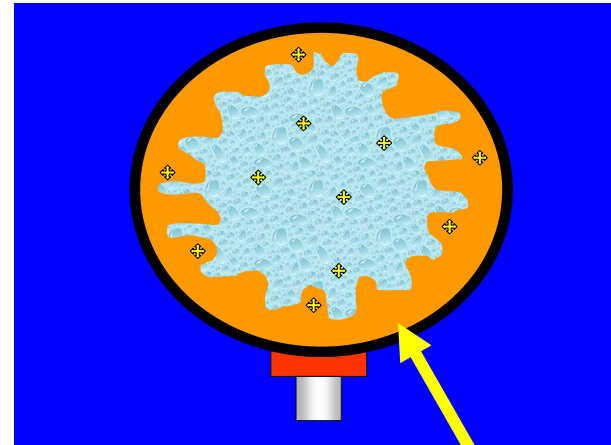
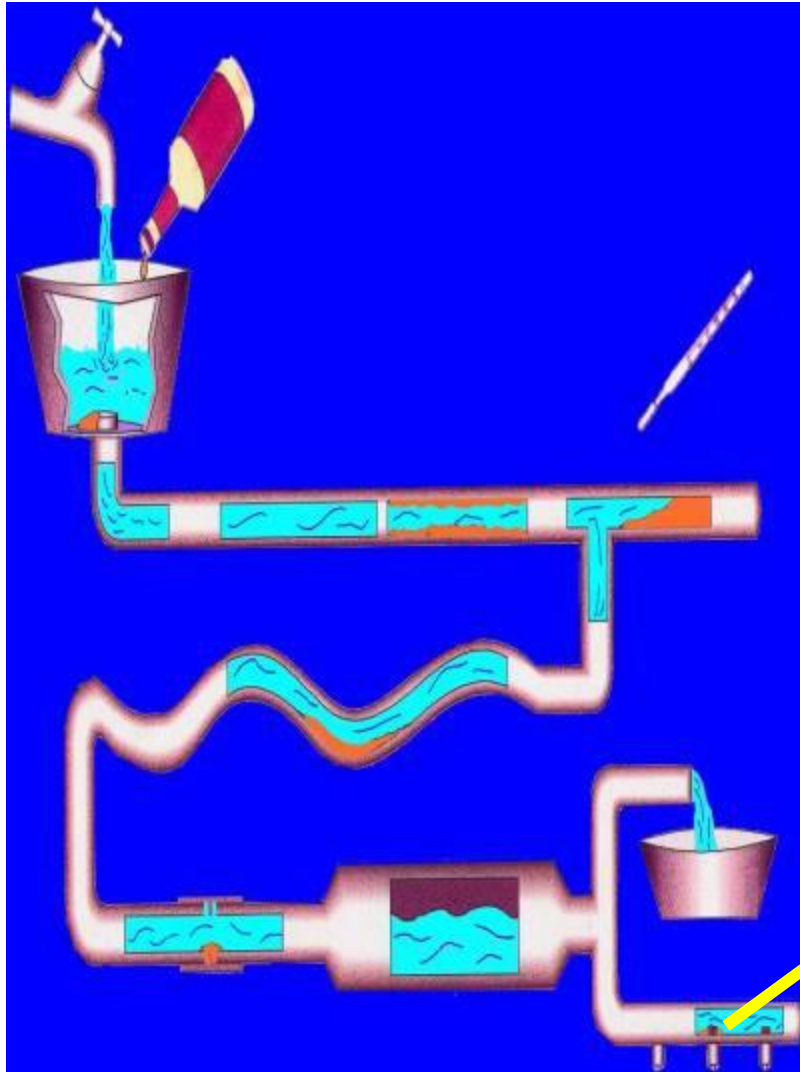


Organic deposit

Bacteria



ORGANIC DEPOSIT BLOKS WATER PIPES



COMBINATION OF BAD FEED STRUCTURE AND HIGHT STOCKING DENSITY IN A LARGE LAYER PROJECT (Real field case) Cage system

Cannibalism

Fragile bones + poor eggshell quality

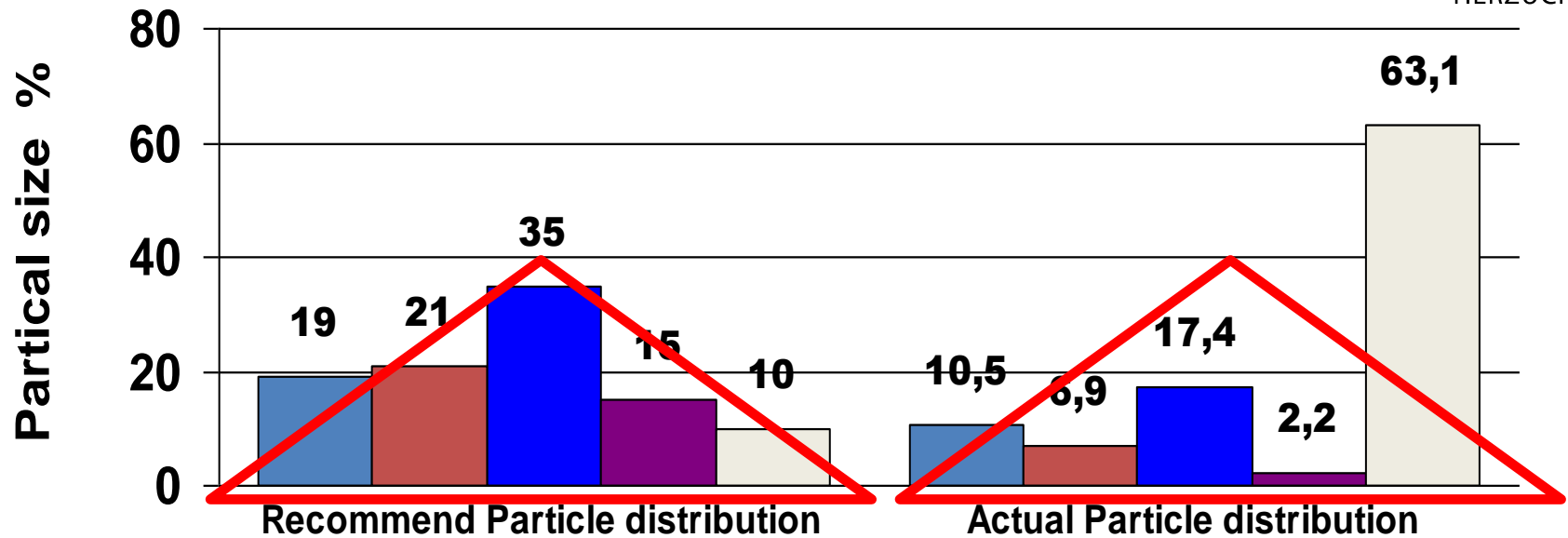
Wet-watery droppings

Problem of laying persistency.

Particle Size of Feed



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■ 0 - 0,50 MM

19

10,5

■ 0,51 - 1,00 MM

21

6,9

■ 1,01 - 1,50 MM

35

17,4

■ 1,51 - 2,00 MM

15

2,2

■ above 2 mm

10

63,1

Feed analysis results



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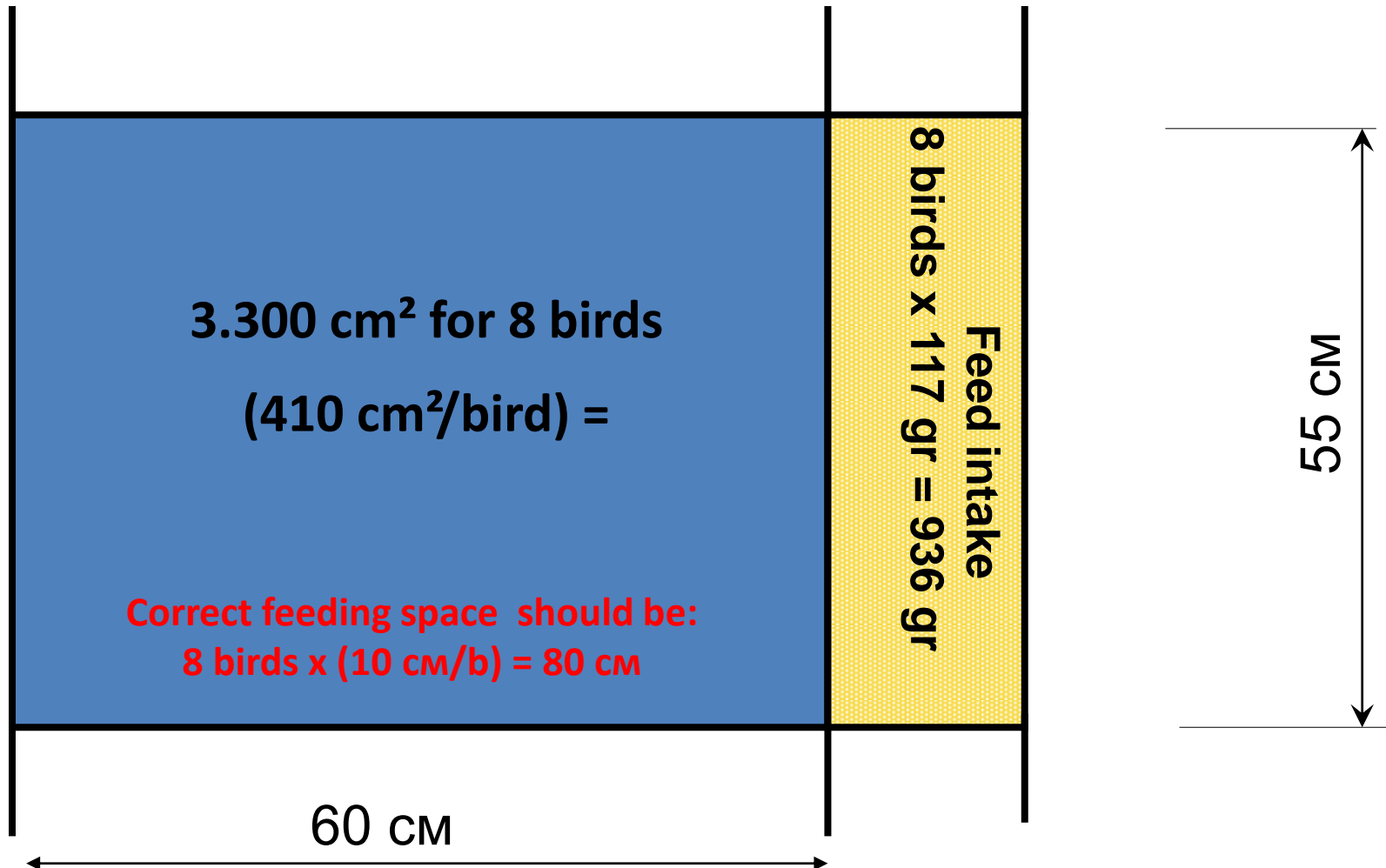
	0-0,5 mm	0,51 - 2 mm	>2 mm	FEED	recommended
Protein	27,70%	18,90%	12,50%	15,90%	16,00%
Fibres	8,10%	5,50%	3,10%	5%	5%
Calcium	0,90%	0,81%	4,29%	2,63%	3,60%
Phosphorus total	0,74%	0,43%	0,26%	0,45%	0,47%
Sodium Na				0,12%	0,15%
Chloride				0,16%	0,15%
Metab. Energy	12.4 MJ (2960 Kcal)	12,5 MJ (2980 Kcal)	11,3 MJ (2700 Kcal)	11,6 MJ (2800 Kcal)	11,4 MJ (2730 Kcal)
% particle size distribution	10,50%	26,50%	63,00%		
% recommended	19%	71%	10%		

Consumption 117 gram / bird / day

DIMENSION OF THE CAGE



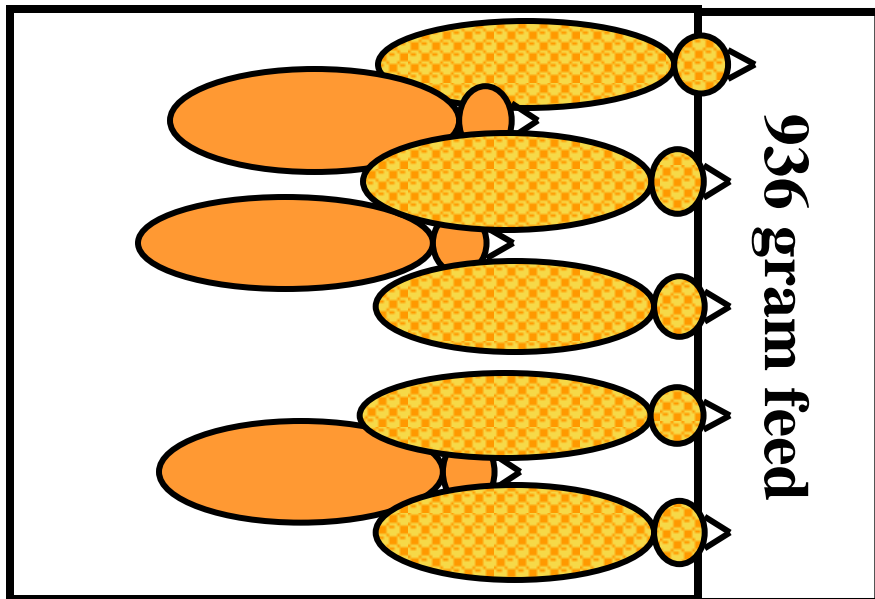
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What happened in reality?



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- Dominant birds start first
 - Coarse particles (cereals)
- SELECTIV FEEDING**

The coarse part of the feed:

- (11.3 MJ ME/kg) → **Correct**
- (12.5% Protein) → **Too low**
- (4.29 % Calcium) → **Recom. 3,6%**
- (0.26% Total P → **Recom. 0.47%**

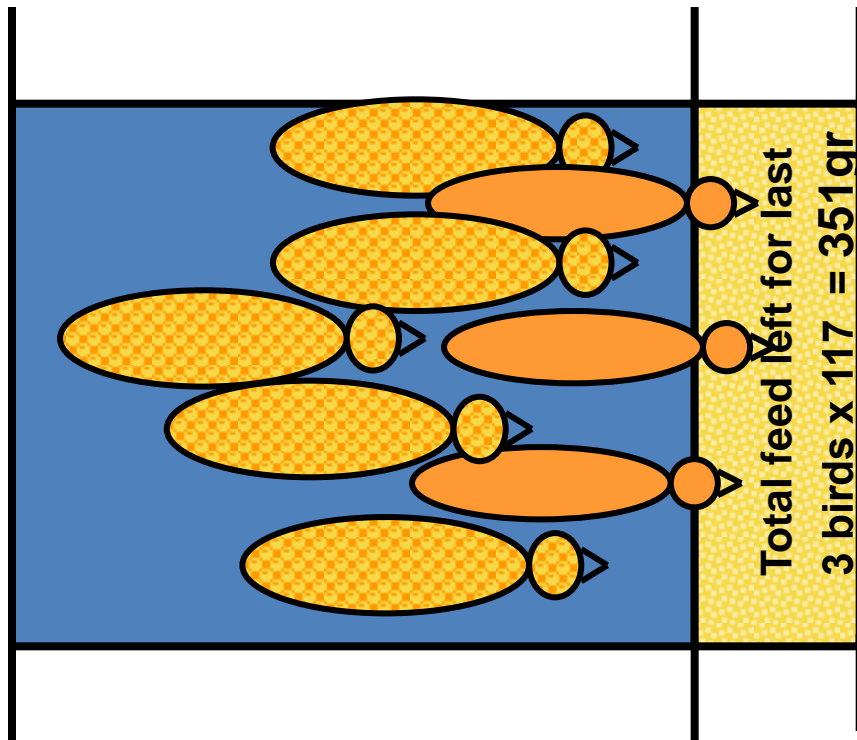
What about the ratio Ca/P ?????

Unbalanced nutrition



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what about NON-DOMINANT birds



- (12.4 MJ ME/kg) → too high for layers
- (18.9 – 27.7% Protein) → far too high
- (0.9% fine Ca) → far too low / fine
- (0.74% total P) → too high (0.47%)

Ca/P ratio = 1,22 in stead of 7,66

Note: 3 of 8 birds represent 38% of the total flock!

CONCLUSION

**Cannibalism: salt (NaCl) deficiency +
Imbalanced nutrient intake.**

Fragile bones + poor eggshell quality:

- **Imbalance in Ca/P ratio in both groups.**
- **Deficiency in minerals and micro-
ingredients (due to selective feed intake):**

Wet-watery droppings:

- **Excessive protein intake for the birds eating the last fine parts**
- **All salt is mixed in the fine feed ration**



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Correlation between stocking density and production parameters **126 - 462 days of age**

TRAIT	White entries		Brown entries	
	310 cm ²	413 cm ²	310 cm ²	413 cm ²
Mortality %	11.2	- 3.6	13.3	- 8.4
No. Eggs / HH	254	+ 19	255	+ 36
HD Production %	79.5	+ 4.7	82.2	+ 6.1
Egg Weight gr	56.3	+ 0 .6	58.8	+ 0.9
Feed intake gr/day	96	+ 9	100	+ 10
FCR kg/ kg	2.13	+ 0.04	2.04	+ 0.04
IOFC (\$ / hen)	9.34	+ .68	9.99	+ 1.53
Mortality at molting %	2.80	- 1.5	2.4	- 0 .4

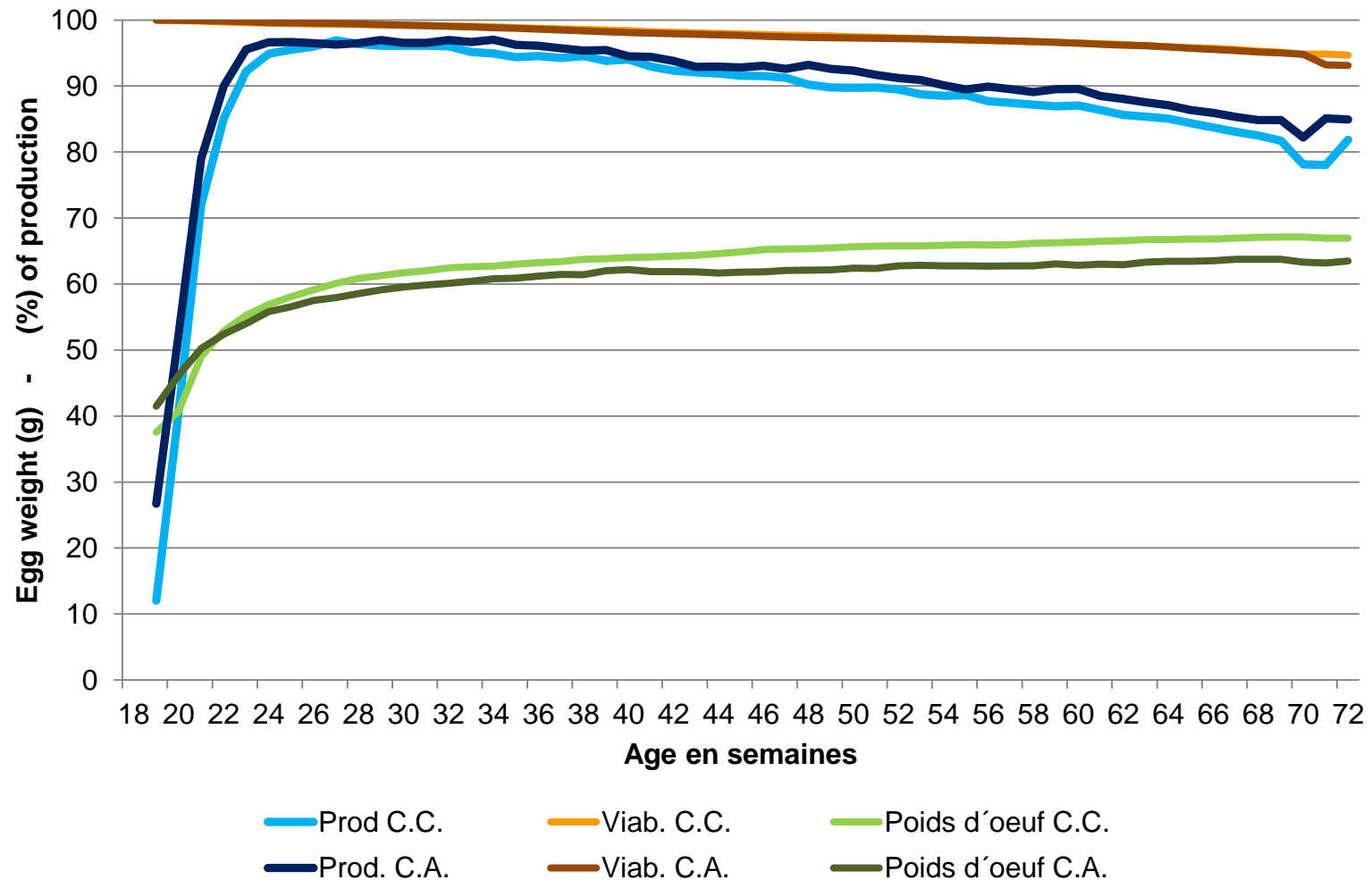
ANDERSON (2000), North Carolina

MORE SPACE FOR THE LAYERS = HIGHER PRODUCTION POSSIBILITY ????

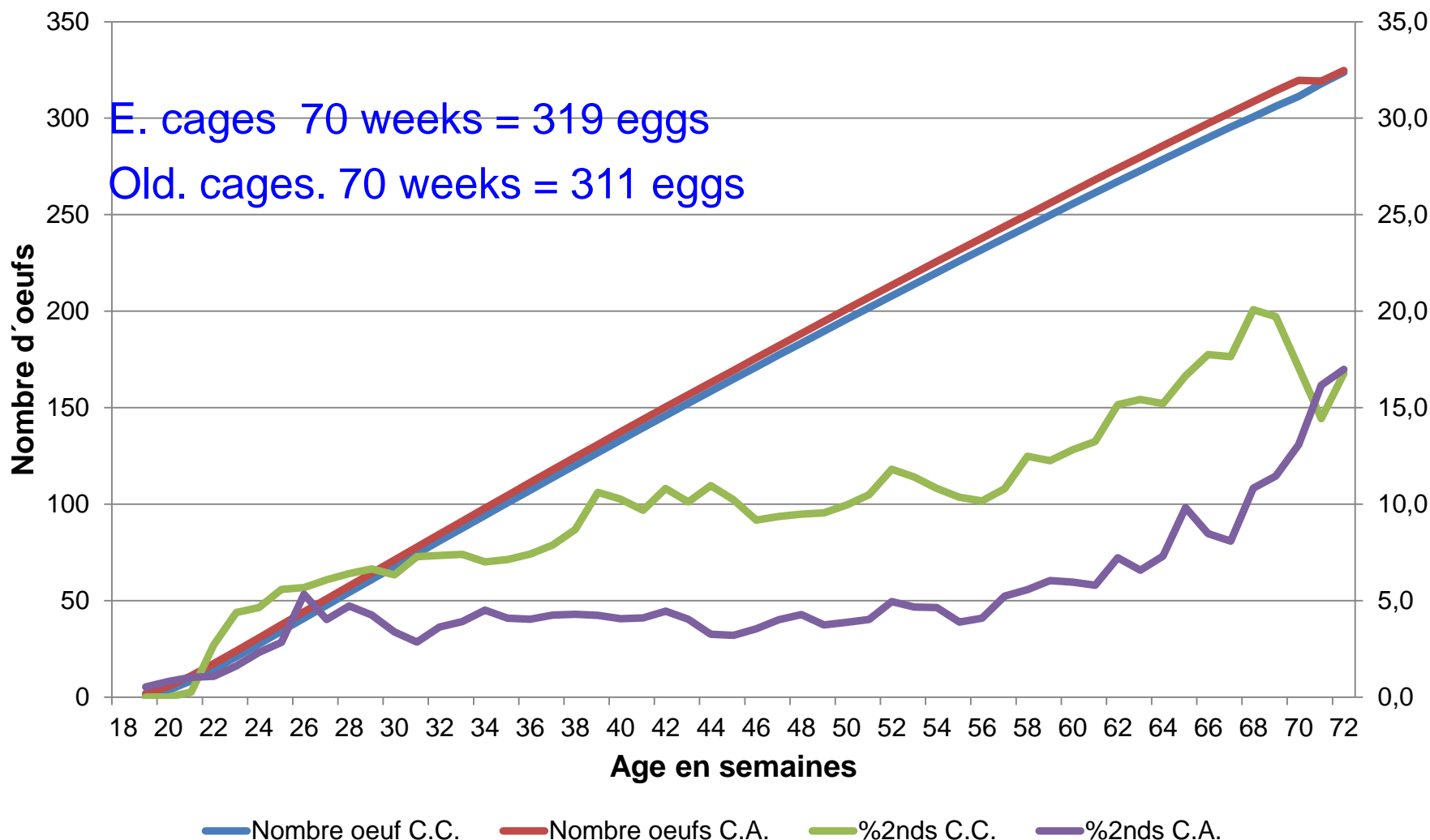


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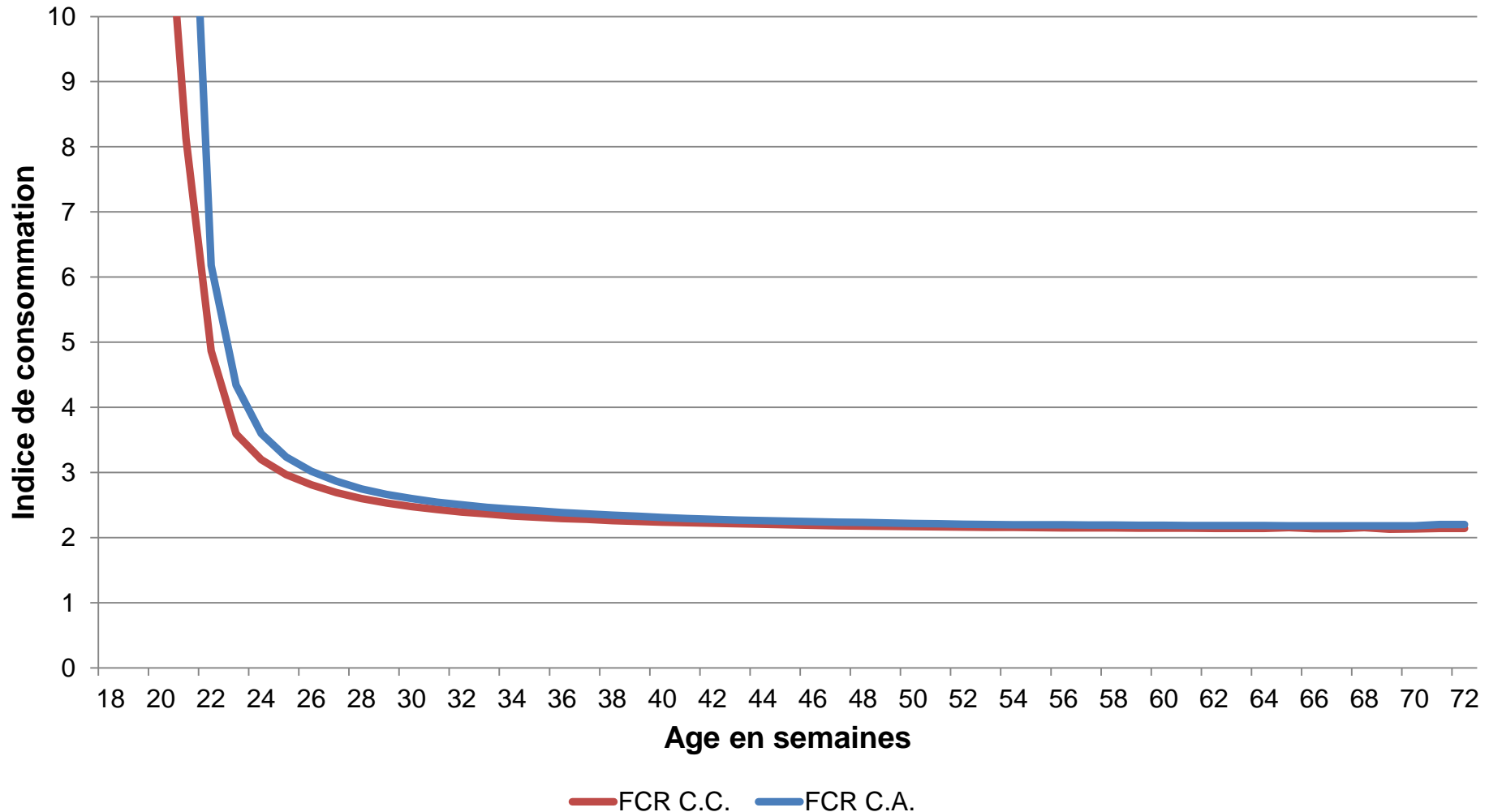
**Comparison Enriched cages / Conv.
Brown strain in Europe 1.000.000 birds**



Comparison Enriched cages / Conv. Brown strain in Europe 1.000.000 birds



Comparison Enriched cages / Conv. Brown strain in Europe 1.000.000 birds



Recommendations

Reduce the high-stocking density.

- **Non-homogenous structure require more frequent distribution of feed to supply all birds with sufficient nutrients**

Improved feed milling technology (roller-mills) or crumbling of feed may solve problems with non-homogenous feed rations



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Thank you for your attention!