



Egg Weight Control Rearing

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Egg Weight

What can we do before & during rearing?

- Use the right genetic
- Make a plan before housing the DOC
- Follow up the rearing to stay on track



Egg Weight

What can we do before & during rearing?



Bird management



Lighting program



Nutrition



A

Use the right genetic:

White layers:

Super-Nick/Nick-Chick/Crystal-Nick

Brown layers:

Brown-Nick

B

Make a plan upfront!

Needs of the market

Age of production cycle

Housing systems

C

Follow up the rearing weekly

Body Weight (uniformity)

Feed intake

Lighting program

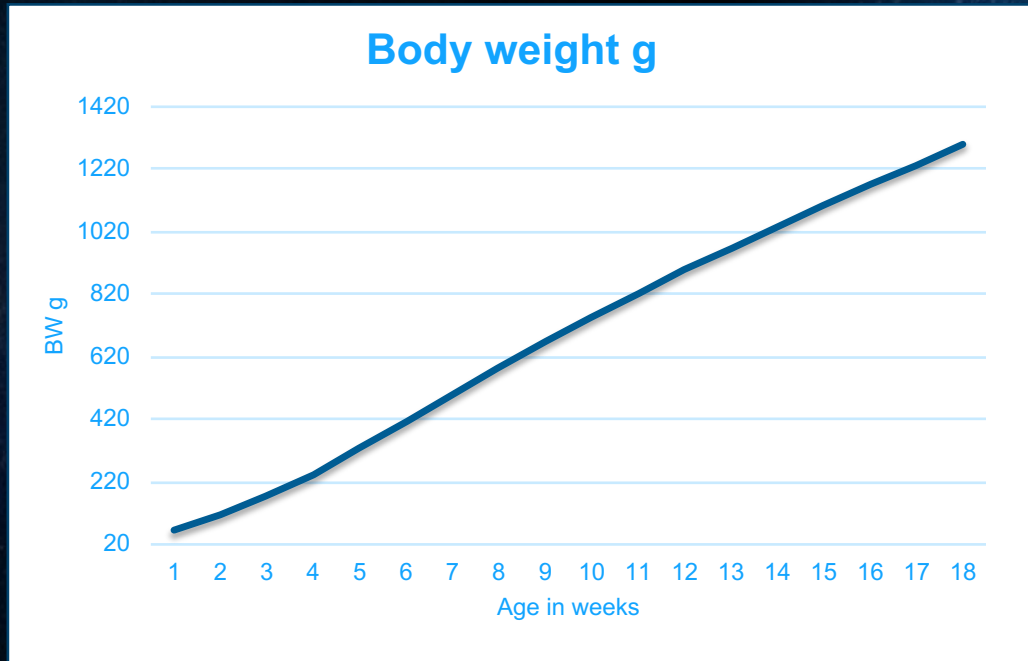
Egg Weight

Outline

1. Little bit of history of the research done
2. Body development during rearing
3. Impact of BW on performance parameters
4. Lighting programs
5. Tools that help to get the egg size we want

History

In the past there was linear body development in rearing



- Linear growth and development of the different tissues
- This drove different feeding regimes in the past
- It was thought that late rearing was the most important period
- Close to production onset
- **Diets change by age**

History

A big step forward!

- In 1986 Lessons and Summers suggested that feed regimes should be based on **diet/body weight** instead of diet/age changes.
- Dietary changes should take place only if a certain physiological age defined as body weight has been achieved.
- Nutritional programs for pullets should be adjusted to consider the stages of development of important body structures.

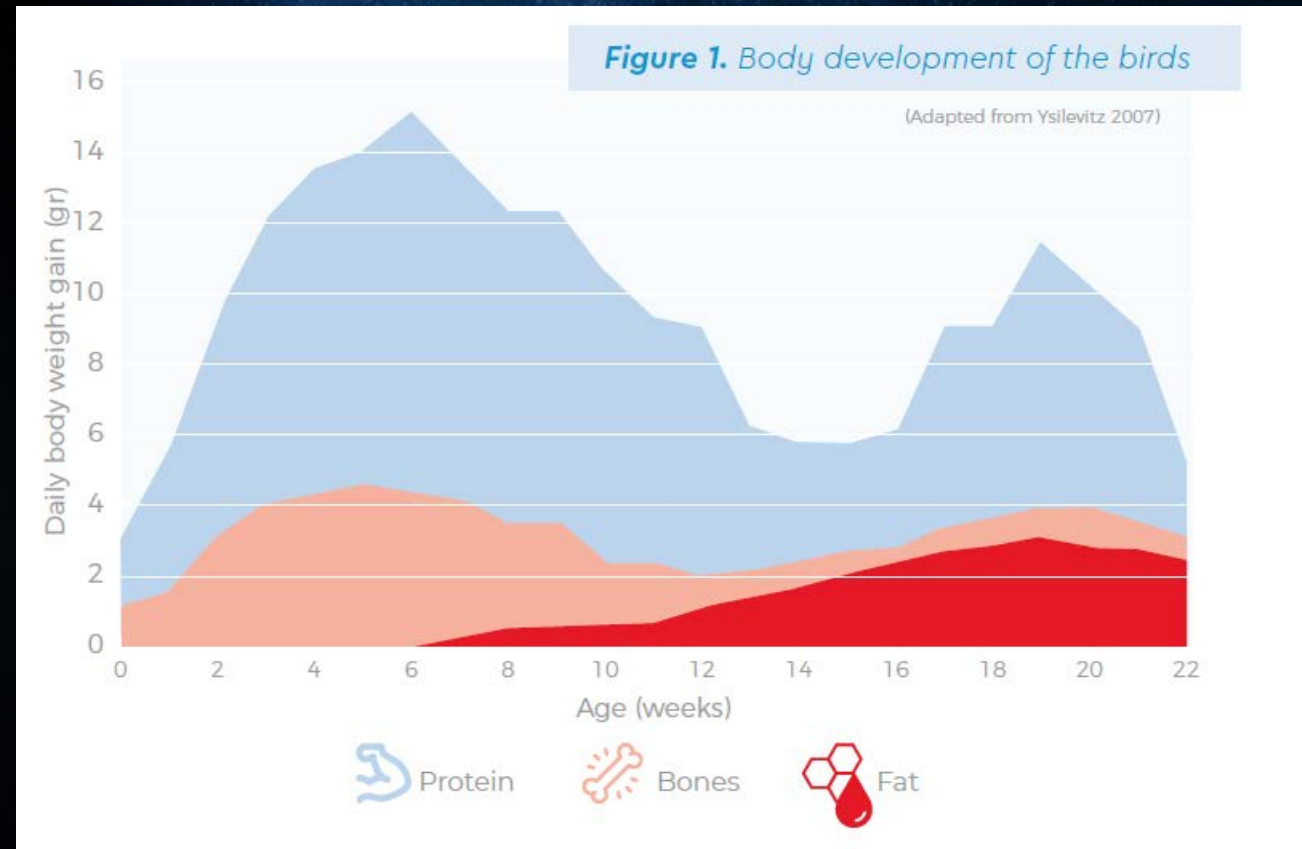
Body Development During Rearing

A big step forward!

Rapid growth period very critical (first 8 weeks).

Important body weight/age:

1. 5 weeks
2. 8 weeks
3. 12 weeks
4. Body weight at light stimulation



Minimize The Management Impacting BW In The First Weeks Of Life

7 important aspects

1. Administer optimal nutrition
2. Follow feeder space, drinker space and stocking density recommendations
3. Consider infrared beak treatment
4. Apply as many vaccines as possible already in the hatchery
5. Use less reactive vaccines
6. Reduce the handling of birds as much as possible
7. Apply a lighting program in rearing

Body Weight

Rearing till 30 weeks of age!



The **flock weighing** should be started at the end of the first week of life, repeating it weekly.

In the **case of caged hens**, the same cages from different areas of the barn should always be weighed for better follow-up.



In **alternative systems**, birds must be selected from different parts of the barn and weighed as regularly as in cage hens.

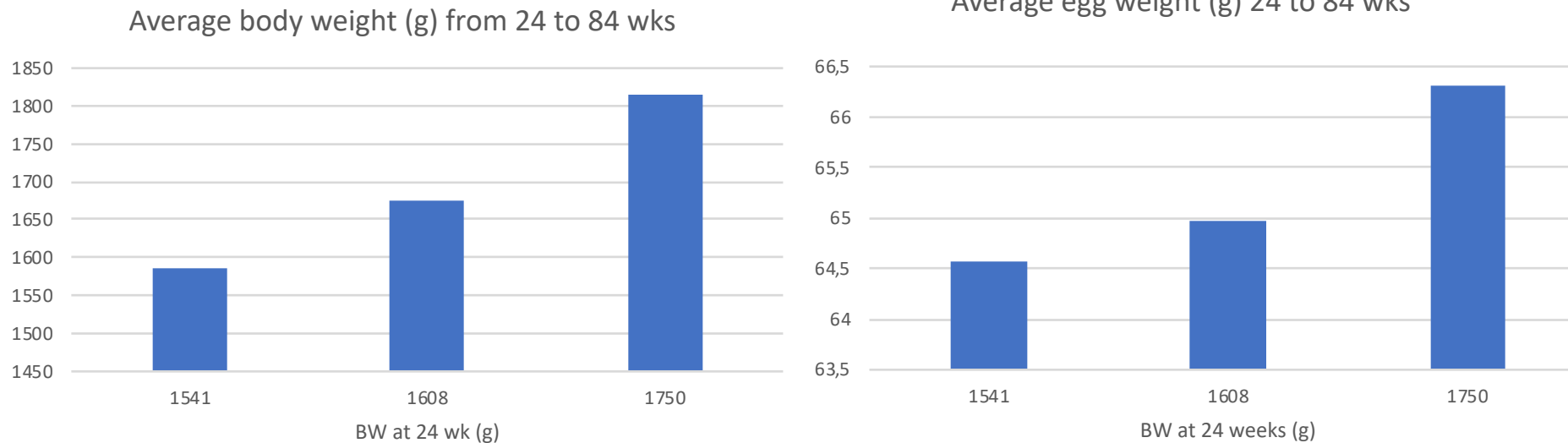


In addition to body weight, **flock uniformity** should also be calculated. This is equally important in the assessment of flock development and future productive performance.

Impact Of BW On Performance Parameters

Egg weight and body weight in production 24 to 84 weeks

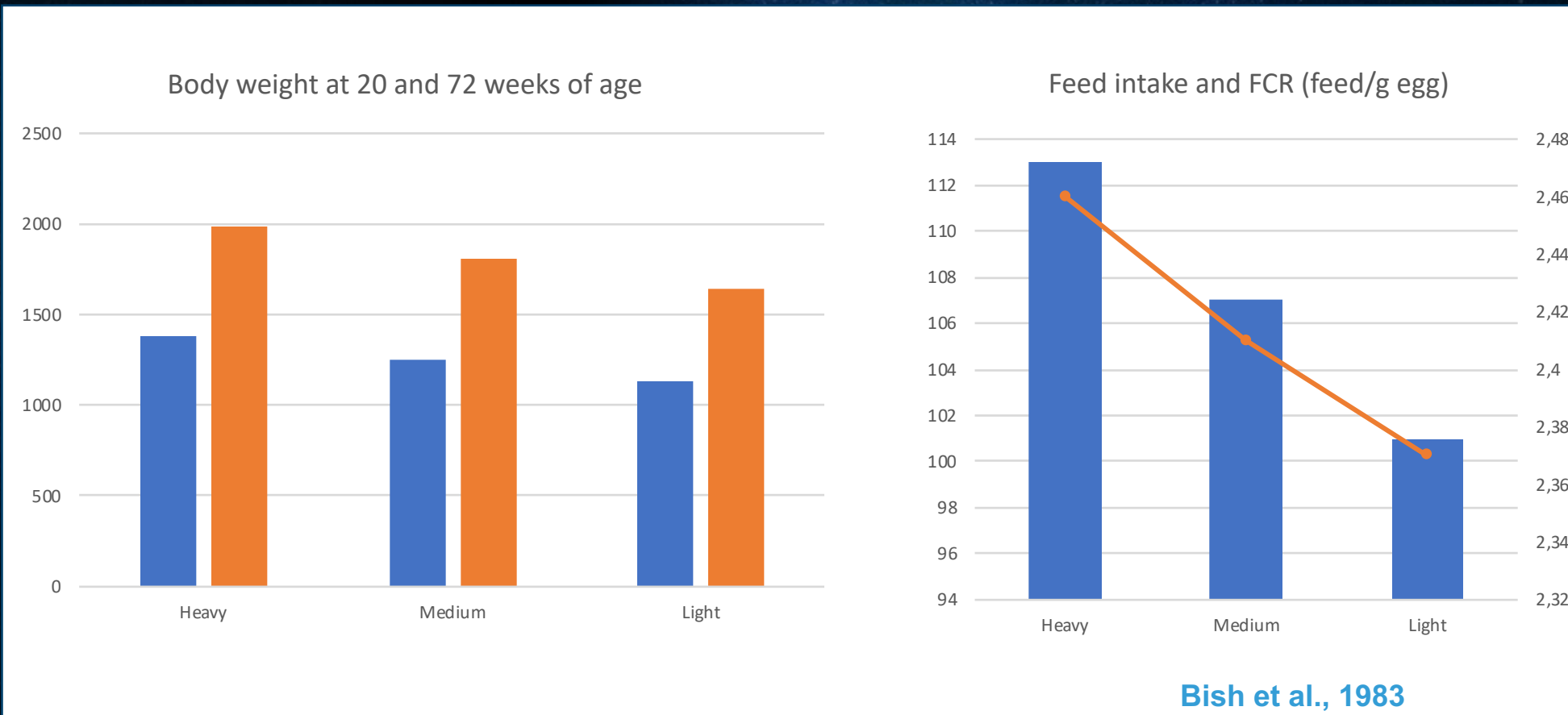
24 wk



Lacin et al., 2008. $p < 0,005$

Impact Of BW On Performance Parameters

Body weight at 20 weeks of age and performance



24 wk



20 wk

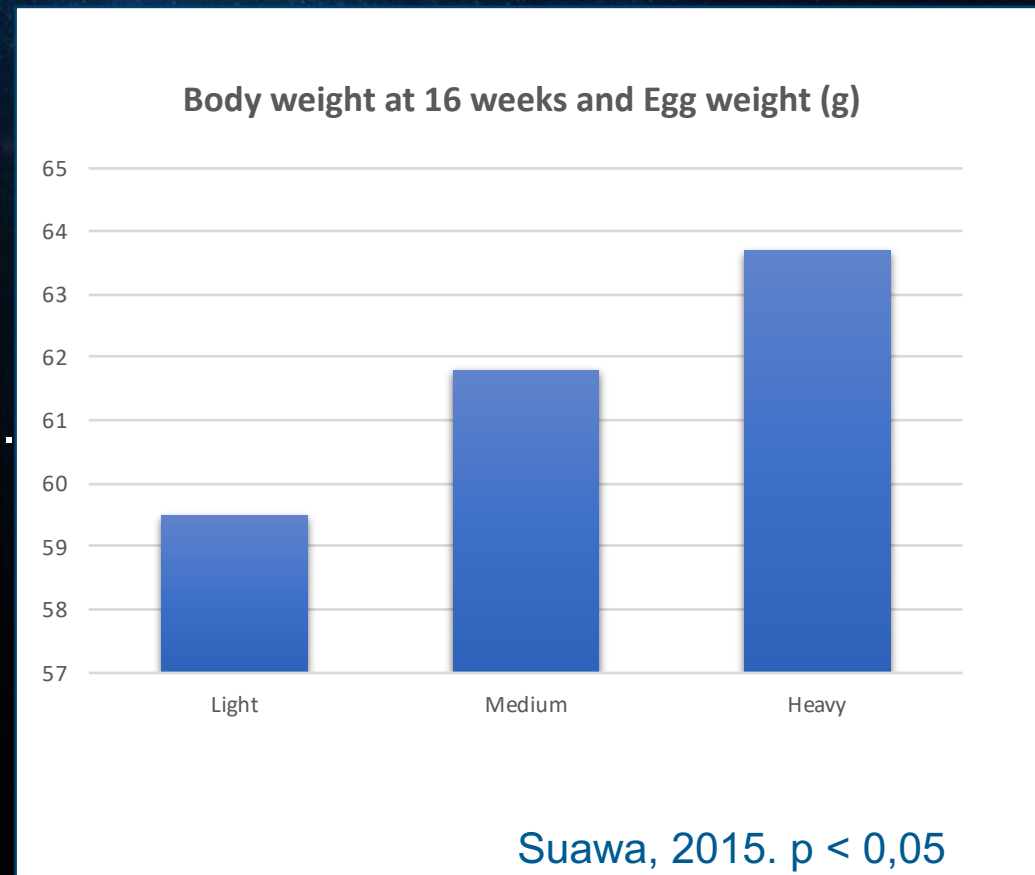
Impact Of BW On Performance Parameters

Effect of Body weight at 16 weeks and egg weight

At 16 weeks of age (Brown):

- Light: 1,170 kg
- Medium: 1,337 kg
- Heavy: 1,507 kg

- Average egg weight until 80 weeks.



24 wk



20 wk



16 wk

Light Stimulation On Body Weight

H&N Brown Nick Layers

Treatment	Age of stimulation	Weight at stimulation	Age at 50% of production
Number of eggs	16 weeks	1400 gr	140-145 days
Balanced	17 weeks	1500 gr	145-150 days
Egg size	19-20 weeks	1600 gr	150-155 days



Light Stimulation On Body Weight

H&N White Layers – Super Nick and Nick Chick



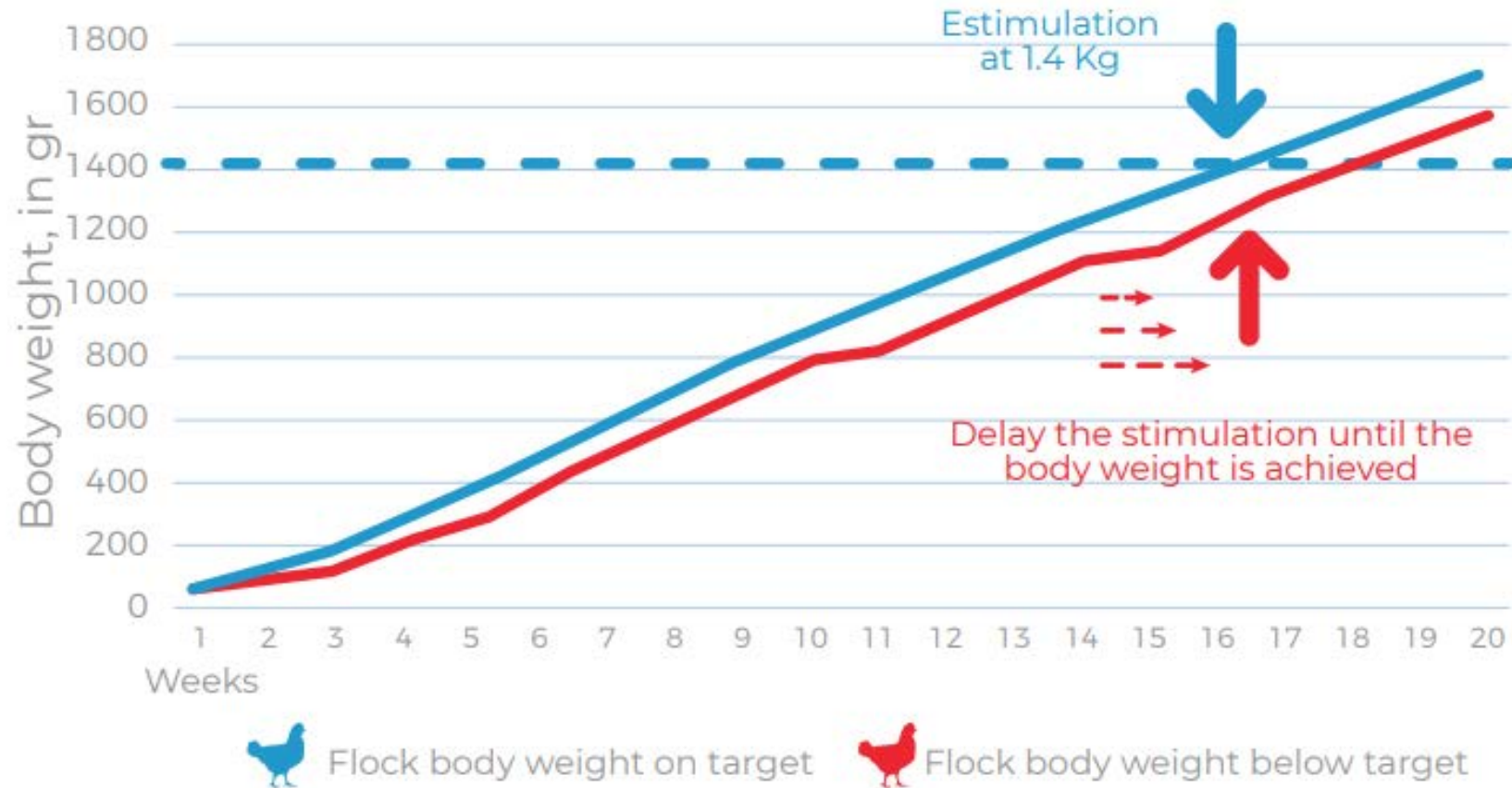
Super Nick



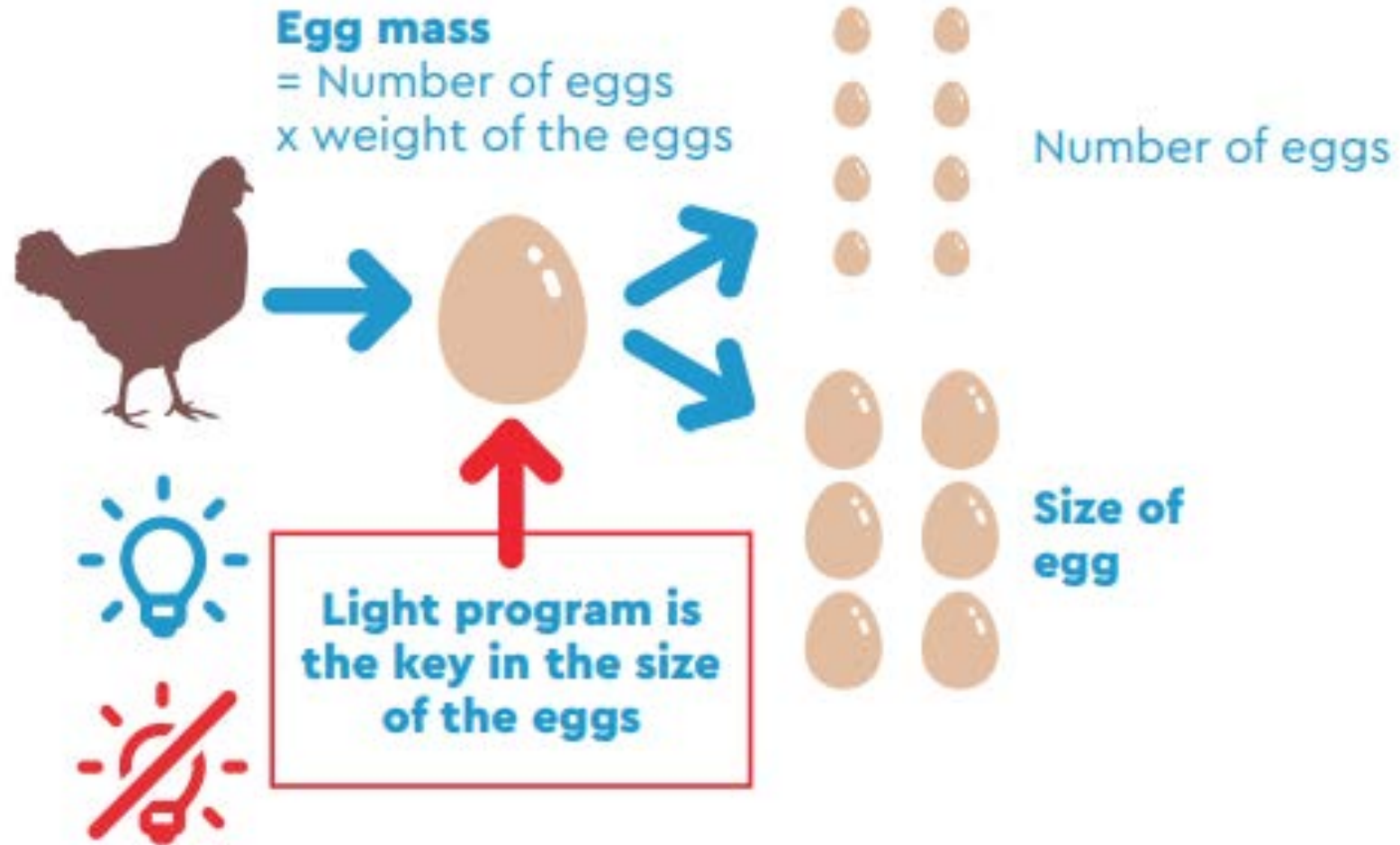
Nick Chick

Treatment	Super Nick			Nick Chick		
	Age of stimulation	Weight at stimulation	Age at 50% of production	Age of stimulation	Weight at stimulation	Age at 50% of production
Number of eggs	16 weeks	1190 gr	140–145 days	16 weeks	1170 gr	140–145 days
Balanced	17 weeks	1260 gr	145–150 days	17 weeks	1235 gr	145–150 days
Egg size	19 weeks	1395 gr	150–155 days	19 weeks	1360 gr	150–155 days

Light Stimulation On Body Weight

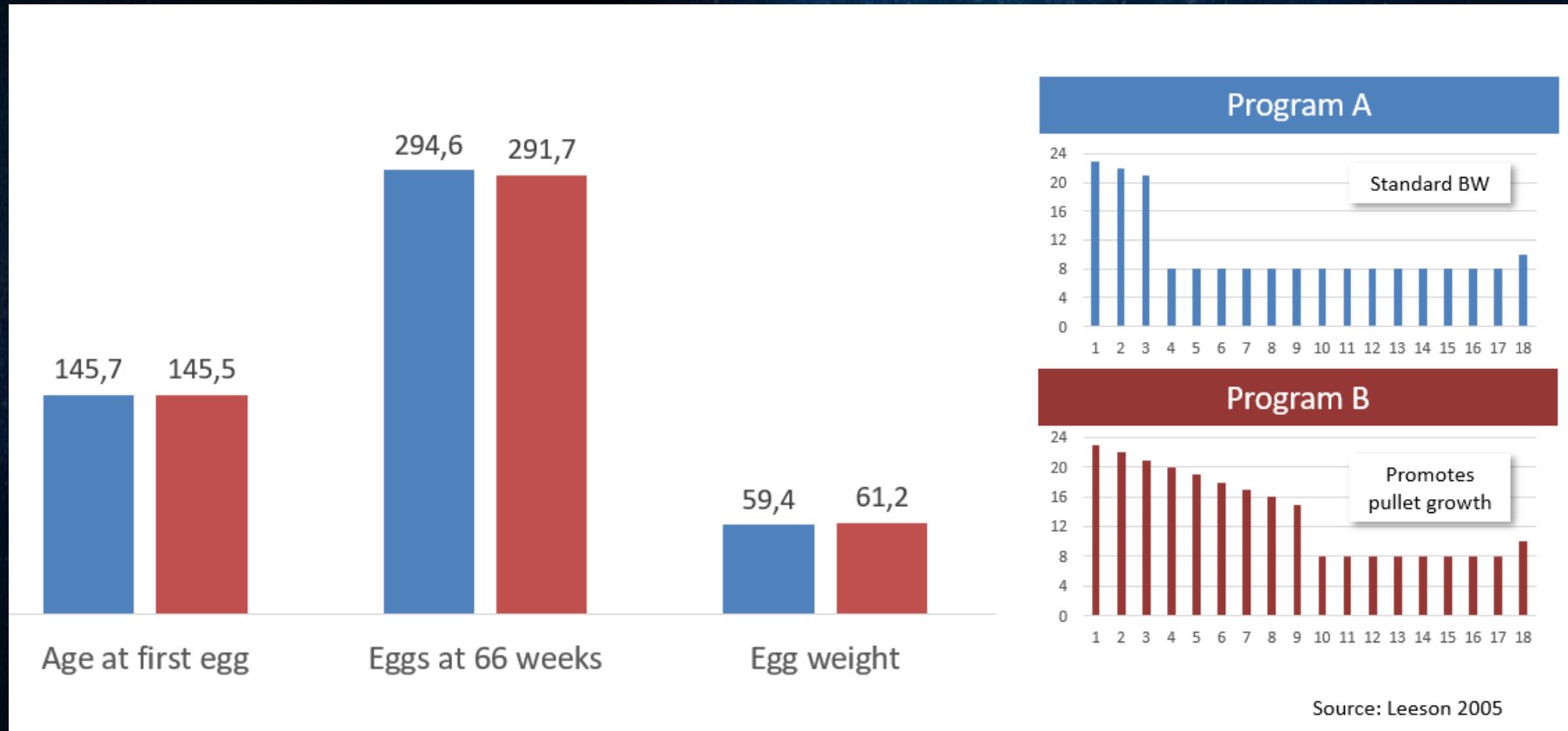


Lighting Programs



Lighting Programs

White hens receiving different step-downs

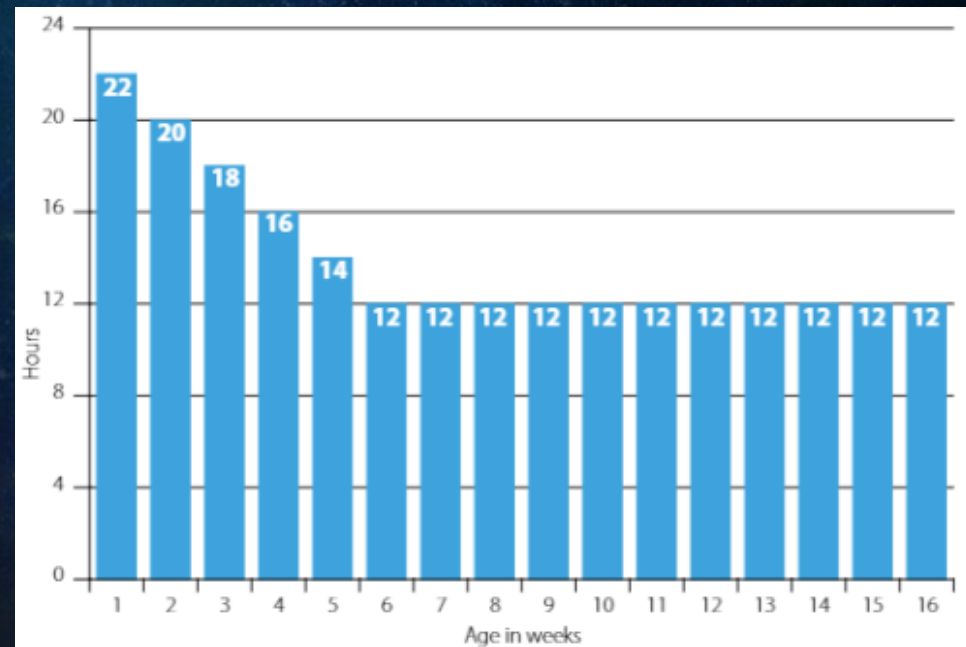
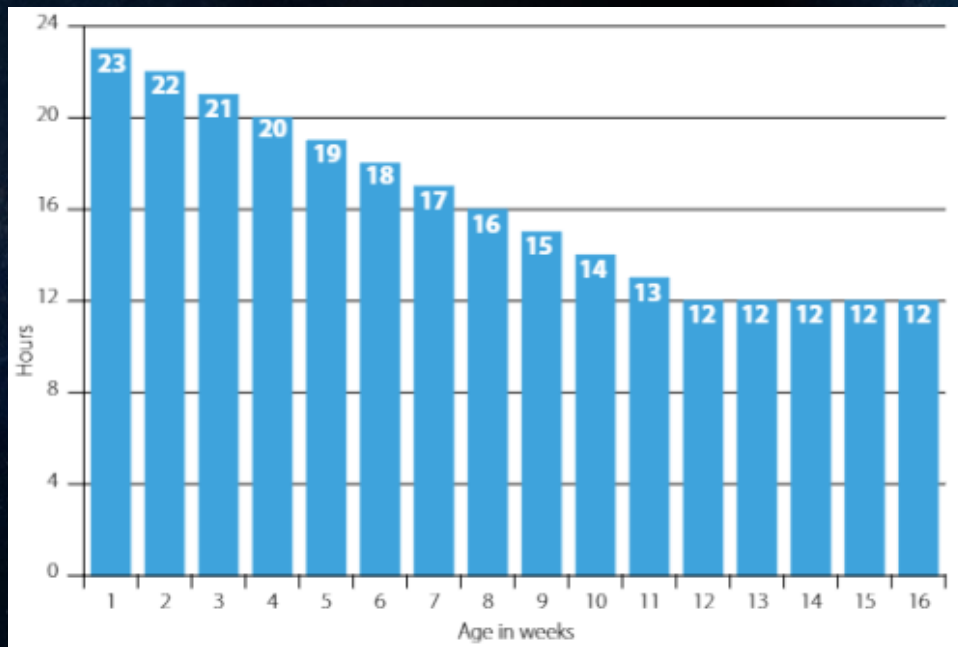


Source: Leeson 2005

Lighting Programs

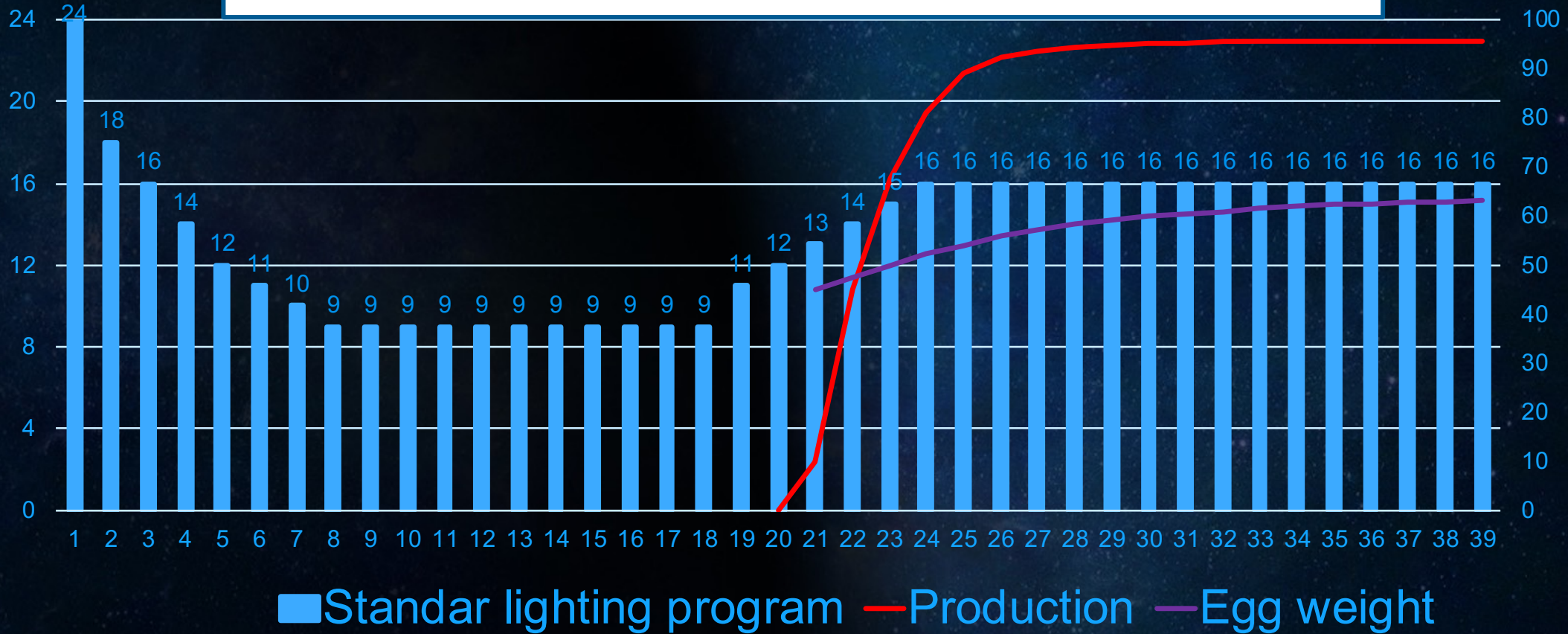
Comparing a Slow Down versus a Fast Down Program

If it doesn't appear that body weight targets will be met at week 5, it is highly recommended to change to a slower reduction to allow body weight to improve!



Lighting Programs

Should this program be implemented for ALL the flock worldwide?





**The same lighting program
cannot be used worldwide**

1. Effects of the natural light
2. Possibility to adapt egg weight to different market demands by using a targeted lighting program

Rules HOW To Stimulate A Flock Of Layers

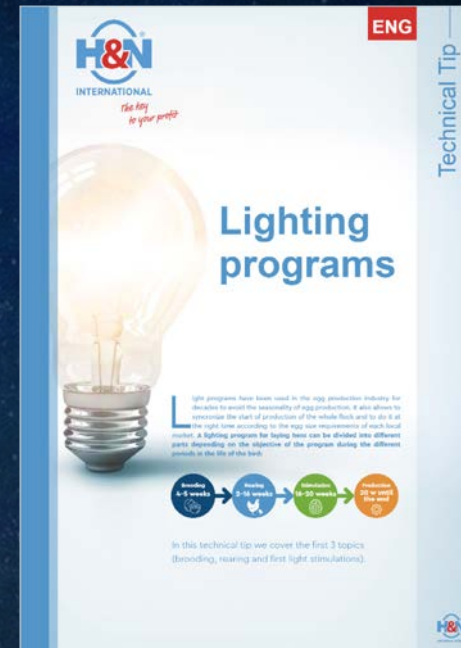
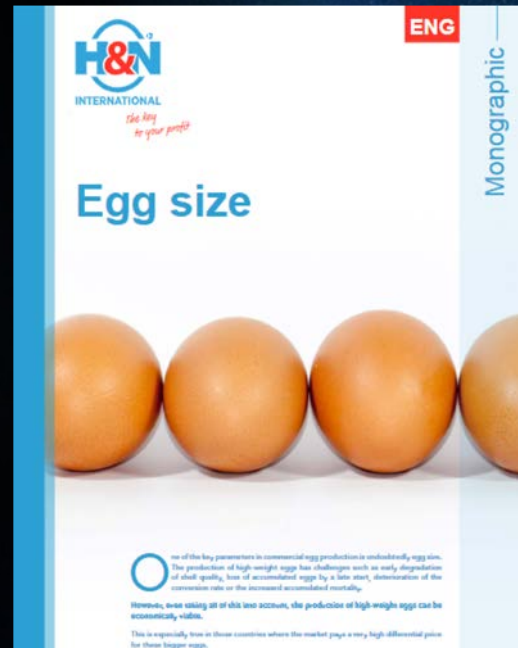
5 steps

1. Make the first light increase in production towards dawn and later ones towards dusk.
2. Depending on breeds:
 - White Layers : 1 hour for the first light stimulation and then 1 hour/week
 - Brown Layers: 2 hours for the light stimulation and then 1 hour/week
3. Light stimulations of more than 2 hours at once might produce stress for the birds and has no beneficial effect.
4. Apply a minimum stimulation of 30 minutes.
5. Maximum light hours in production should be longer than 14 hours to allow enough time for feed consumption during the production period. It is of no advantage to exceed to 16 hours of light because after this day length the birds do not increase their daily feed intake.

What Material Can You Benefit From?

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