



## HOW TO MANAGE EGG WEIGHT?

Each laying hen line has a genetically determined range of egg size, but you can also adjust it in this range. Egg weight (EW) is correlated to many factors. Main influences are genetic and pullet weight at beginning of laying period. The first step is selecting the appropriate Novogen genetic line based on your market's egg weight requirements. There is more variation of egg weight profile within one breed than between breeds. The second criteria determining future egg weight profile is the bodyweight at the first egg. Keep in mind that modifying egg weight becomes increasingly difficult as birds get older. For example, by 75 weeks, it is nearly impossible to change egg weight without negatively affecting production. Therefore, it's crucial to manage this early, before the birds reach maturity. Other factors such as nutrition and management come next.

### GENETIC POINT OF VIEW

The heritability of the egg weight trait is relatively high compared to other traits meaning it can be effectively influenced from one generation to next. Novogen's R&D program addresses egg weight strategy through two main approaches:

- Product differentiation: By offering two types of products, with the Classic and the Light version, Novo Brown Classic and Novo Brown Light on one side and Novo White Classic, Novo White Light and Novo White Ultra Light on the other (table below).
- Optimizing egg weight dynamics: By increasing egg size early in the laying cycle and stabilizing it toward the end of production, the goal is to maximize the proportion of Premium Quality Eggs, thereby increasing income at the start of production.

### ORIGIN

Excessive egg weight is often associated with high body weight at the onset of lay, as well as with management and nutritional factors. A thorough evaluation of these aspects is recommended, followed by the implementation of corrective measures to enhance performance in future flocks. It should be noted that increasing egg weight during the production period is generally easier than reducing it. Therefore, anticipating market requirements through careful management and nutritional strategies is essential.

### MEASURES TO BE DONE

- Check sexual maturity through:
  - Monitoring body weight (BW) during rearing and at the onset of production.
  - Recording body weight at first egg and at 50% production.

Novogen White Strains

NOVOgen strains	25 weeks		45 weeks		65 weeks		85 weeks	
	BW (g)	EW (g)						
<b>White</b>	1545	56,8	1688	63,1	177	64,5	1725	65,4
<b>White Light</b>	1510	55,4	1638	61,1	1662	62,3	1685	63,5
<b>White Ultra Light</b>	1480	54,7	1608	59,7	1620	60,7	1635	61,5



# NOVOFOCUS

- Daily feed intake (F.I.) per bird.
- Monitoring the daily intake of Methionine+Cystine, Lysine and Isoleucine levels. Oil that is especially rich for linoleic acid, higher fat, and energy levels of feeds.
- Check the lighting program is appropriate.

## NUTRITIONAL IMPACTS

**Methionine** is the main amino acid influencing egg weight and is usually considered together with cystine, as both contribute to this parameter (commonly expressed as Total Sulfur Amino Acids, or TSAA). The dietary Methionine+Cystine / Lysine ratio can be adjusted to achieve the desired egg weight profile without compromising persistency and laying rate. To increase egg weight, it is recommended to target a ratio of 90–95%. Conversely, to decrease or control egg size, the ratio should be maintained at 83–85%, ensuring that the reduction does not negatively impact the overall production performance.

Higher intake of **Lysine and Isoleucine** increase egg weight and laying rate. Although their effects are less pronounced than those of Methionine but they should not be neglected.

- Regarding the effect of dietary linoleic acid intake on egg weight: 1.1–1.3% targets lower egg size, while 2.4–2.8% targets higher egg size.
- Added fats, unlike those naturally present in raw materials, have a clear impact on egg weight. Increasing these levels is recommended for higher egg weight the reverse applies for lower egg weight

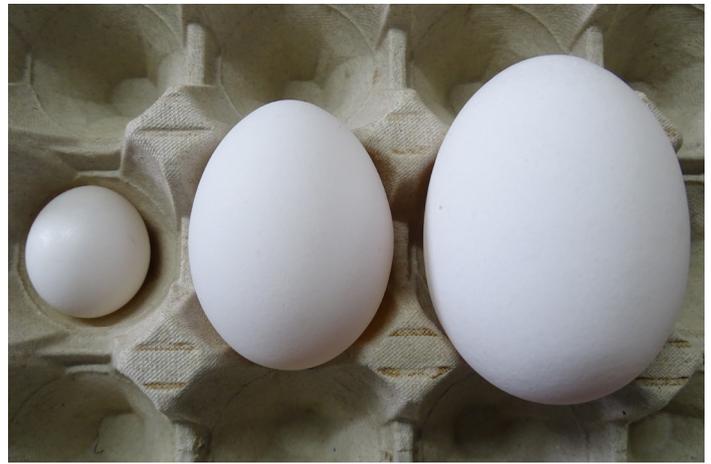
**Energy** level influences egg weight. From our internal meta-analysis: An increase of 100 kcal derived from added oil could increase the average egg weight by 0.85%, even with lower feed intake. Conversely, reducing energy levels tends to decrease egg weight.

- Lowering the density of energy and amino acids in the diet can help reduce average egg weight and limit excessive fat deposition in the flock.
- Implementing our phase feeding program based on feed intake during the laying period is the most effective method to control egg weight.

All nutritional recommendations should be evaluated regularly with your local nutritionist and/or feed supplier to adjust egg weight according to market demand.

## MANAGEMENT IMPACTS

**Body weight** at sexual maturity determines the average egg weight. Heavier pullets will produce heavier eggs throughout the production cycle. If birds grow uniformly following standards, reaching first lay one week earlier



tends to reduce the average egg weight. If birds grow uniformly, reaching first lay one week earlier tends to reduce the average egg weight. As a general guideline, a difference of around 100 g in body weight from the standard corresponds to approximately a 1g change in egg weight, in either direction. Therefore, adjustments should be anticipated.

- A first egg one week earlier indicates that light stimulation was applied about two weeks earlier than usual.

**Sexual maturity.** The lighting program is designed to initiate lay in all birds at the same time. Adjusting the timing of light stimulation directly influences future egg weight. A difference of about one week generally corresponds to a variation of around 1g in egg weight.

- Too late to change after 20 weeks of age. Need to be anticipate.
- Producing eggs that are too big is a sign that the next flock requires earlier stimulation.

**Temperature** influences egg weight, because above 22/23°C (72/74 °F) the average egg weight decreases.

**Feed presentation** and / or management could reduce feed intake. If birds eat too much, you could reduce the feed intake by:

- Having a more fine presentation of the feed.

## CONCLUSION

By having a clear understanding of the market demand, the management of the pullet could be adjusted to respond and define the average egg weight profile you want. Knowing that it is always easier to increase egg weight through nutrition or management than the reverse. Because when the birds are adults or too old, want to reduce the egg weight could mean a reduction in the production.

For more details, you can consult our website with the **nutrition guide** & all the **management guides**, and our **NovoCenter**.

