



Light stimulation of Hubbard Efficiency Plus female

Optimising Onset of Lay Through Biological Readiness

Objective: Achieve 5% of lay at 25 Weeks

Proper light stimulation management is one of the most critical decisions in breeder flock management. For Hubbard Efficiency Plus females, the objective is clear: achieve 5% egg production at 25 weeks while maintaining long-term persistency and reproductive performance. Light stimulation should never be based on age alone. Instead, it must be aligned with the biological readiness of the flock.

Understanding the Purpose of Light Stimulation

In *Gallus gallus*, light stimulation mimics the increasing day length of spring. This environmental signal activates the reproductive axis, triggering ovarian development in females and stimulating mating behaviour in males. However, premature stimulation can negatively impact peak production, egg quality, persistency of lay and feathering. Therefore, correct timing is essential.

The Golden Rules Before Stimulation

Light stimulation should only be implemented when the following four conditions are met:

- No stimulation before 22 weeks (154 days)
- Minimum 80% of females with a pelvic opening of 2 fingers (≈3 cm)
- Target average body weight of 2,700 g achieved
- Adequate fat reserves confirmed (abdominal fat and fat line development)

These parameters ensure that the flock is physiologically prepared for the onset of lay.

1. The Right Body Weight at the Right Age

Body weight is the first measurable indicator of readiness. Hubbard provides a growth profile that, when correctly followed during rearing, prepares females for stimulation at 22 weeks (154 days). If target body weights at 4, 10, 16, and 22 weeks are achieved with a flock uniformity above 80%, Efficiency Plus females are generally ready at an average body

weight of 2,700 g. However, body weight alone is not sufficient to trigger stimulation. Sexual maturity indicators must also be evaluated.

2. Assessing Sexual Maturity Development

Sexual maturity starts to develop around 17–18 weeks of age and can be monitored through:

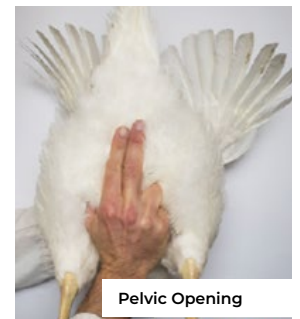
- Increasing weekly weight gain
- Comb and wattle enlargement and reddening
- Progressive widening of the pelvic bones

Pelvic Opening Assessment

The pelvic opening is measured by gently placing fingers between the pelvic bones to estimate the distance between the bone tips. From 20 weeks of age, the pelvic opening should be recorded weekly during body weight measurements.

Classification categories:

- <1 finger
- 1 finger
- 1.5 fingers
- 2 fingers
- 2.5 fingers
- 3 fingers
- > 3 fingers



To ensure consistency and reliability, evaluations should always be conducted by the same person.

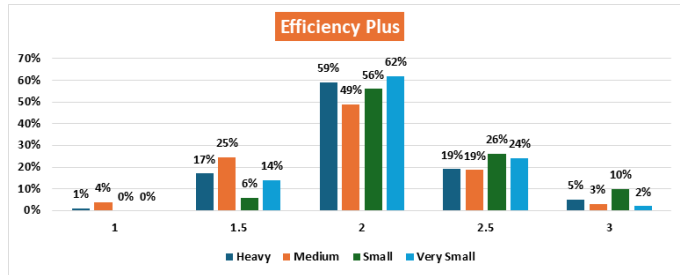
Efficiency Plus females are considered ready for stimulation when at least 80% of the flock reaches a pelvic opening of 2 fingers (approximately 3 cm) or more. If this threshold is not achieved, stimulation should be postponed and reassessed after a few days.

Below is an example of pelvic opening measurements in an Efficiency Plus flock recorded at 22 weeks during bodyweight assessment. In this case, the Heavy, Small, and Very Small pens have more than 80% of their birds with a pelvic opening greater than or equal to 2 fingers. The Medium pen only has 71% >2 fingers. It





is therefore recommended to wait a few days before reassessing the pelvic opening in order to decide whether to proceed with light stimulation or not.



3. Ensuring Adequate Fat Reserves

Proper fat deposition is essential for sustaining egg production. It contributes to the energy required for egg formation and supports egg quality. Weight gain must not be limited to breast muscle development; adequate fat accumulation is critical.

Methods to Evaluate Fat Condition

If possible, the 3 following methods should be combined to have the most precise estimation of fat condition:

3a. Abdominal Fat by Palpation

During the pelvic opening assessment, abdominal fat can be evaluated by feeling the prominence of the pelvic bones. As fat deposition increases, bones become less sharp and less prominent.

3b. Fat Line Under the Wing

Before 20 weeks, the fat line appears bluish. As fat reserves increase, it becomes whitish and more visible. At 22–23 weeks, approximately 90% of the birds should show a clearly visible fat line.

3c. Abdominal Fat Percentage (Invasive Method)

This entails that an autopsy is performed on a small number of birds to measure the weight of the abdominal fat relative to the live weight. The target at 22 weeks of age is an abdominal fat percentage between 1.5% and 2%.

Final Decision: Stimulate or Postpone?

Light stimulation should only be implemented at 154 days if all three biological criteria are met:

- Target live weight achieved
- ≥80% of females with ≥2-fingers pelvic opening
- Adequate fat reserves confirmed

In case one of these parameters is below target, stimulation should be delayed until the limiting factor reaches the required threshold.

Conclusion

Successful light stimulation management of Hubbard Efficiency Plus females requires a multi-parameter evaluation approach. Age alone is not a reliable indicator. By integrating body weight, sexual maturity assessment and fat reserve evaluation producers can ensure optimal reproductive performance through:

- Timely onset of lay
- Good peak production
- Strong persistency

Precise timing of stimulation translates directly into improved biological efficiency and higher economic returns.

If you need more management guidelines or recommendations, please contact our Customer Support Teams at: www.hubbardbreeders.com communication@hubbardbreeders.com

