

The calculation of the daily Requirement of protein for laying hens

- **protein Requirements are divided to four parts as follows:**

1- Protein required to save a life (sustainability): It is calculated on the basis of nitrogen internal representation (the bird loses as a result of damage to cells), which is estimated at about 201 milligrams of nitrogen per kilogram of live body weight) (0.0012 g protein). And the efficiency of the chicken in the conversion of food protein to protein in the body, estimated at around 55%.

Protein required to save a life (g / day) = (Body weight kg)^{0.75} x (0.0012) / Protein efficiency(0.55).

2- Protein required for the growth and tissue building: It is calculated on the basis of the proportion of protein in the body of chicks, estimated at about 18%.

Protein required for tissue growth (g / day) = daily weight gain (g) x percentage of protein in tissues (0.18) / protein efficiency (0.55)

Protein required for tissue growth (g/day) = daily weight gain * 0.18 / 0.55

3- Protein required for the growth of feathers: feather represents about 4% of the live weight of the first 4weeks from the age of bird and increase to 7% after four weeks old and remained almost constant. The proportion of protein in the feathers is 82%.

Protein required for the growth of feathers under the age of 4 weeks (g/day) = (daily weight gain (g) x 0.04 x 0.82) / protein efficiency (0.55)

Protein required for the growth of feathers aged more than 4 weeks (g/day) = (daily weight gain(g) x 0.07 x 0.82) / protein efficiency (0.55).

4- Protein required for egg production: the proportion of protein in the egg is about 12% and generally the Protein required for egg production calculated by using the following equation

Protein required for egg production (g / day) =
Egg weight (g) x percentage of protein in egg(0.12) / protein efficiency (0.55)

Protein required for egg production (g / day) = Egg weight (g) x 0.12 / 0.55

Examples

- If the weight of the bird 42 week old 2200 g with a weekly increase of 12 g and egg weight 45 grams, what is the daily requirement of protein for these birds?
- Estimated daily requirement of protein for laying hen 6 weeks old if you knew that the weight of the birds in 6 weeks old 520 gram and in 5 weeks old 430 gram.
- Calculate the amount of daily requirement of protein for the flock of production of table eggs consists of 5,000 birds and the weight of the bird 1.85 kg , the rate of egg weight 55 g and the rate of Body wt. gain 50 g
- If the weight of laying hen in the second week of age is 150 g and in the fourth week 330 g Calculate the daily needs of protein to birds.
- The weight of the bird 35 weeks old 2050 g and in 33 weeks old 1900 g . Egg weight 50 gram, what is the daily requirement of protein?