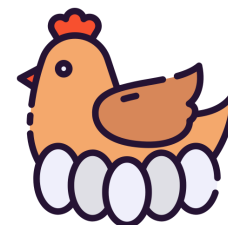# WELFARE ASSESSMENT OF LAYING HENS

› **For whom?**

Farmer, technician, vet.

› **Which species?**

Laying hens.

› **Which type of breeding?**

Barn or aviary systems, with or without free-range access.
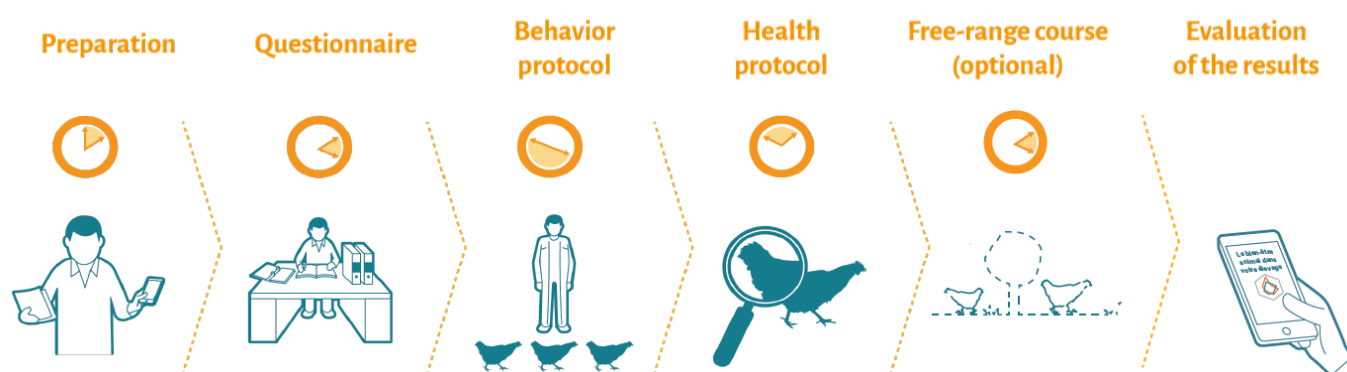
› **When?**

Ideally between 25 and 30 weeks; after 55 weeks.

Three-in-one protocol

The indicators (survey performed at farm) are collected in 3 stages: the questionnaire, the health protocol and the behavioural protocol. A preparation time is required to gather the different documents and follow the observation protocols.

When a range is available, one more step can be done following the range guidelines

| Preparation | Questionnaire | Behavior protocol | Health protocol | Free-range course (optional) | Evaluation of the results |

Implementation of the protocol for laying hens.

Icons made by ="https://www.flaticon.com/authors/good-ware"

Sampling

The sampling must be representative of the whole flock, without observing each animal. Therefore, the time required to do the evaluation becomes reasonable. Numerous scientific studies have verified the methods as well as the sampling sizes in order to obtain the optimal result, while reducing the required time of the evaluation. It represents a crucial step which must be done with rigor.

Unintentional orientation of the results

Sampling bias is present when the results are modified in a non-random way. The human psychology is often responsible because consciously or unconsciously, we wish to orientate results. For example, it is important not to "search" for wounded animals or to the contrary those who come close to humans. Be vigilant! Weather conditions, light or time of the day can also impact the animal's behaviour: note all those elements as comments.

1. Measures from a questionnaire

The questionnaire gathers indicators of means, related to the environment of the animal.

› **Availability of the feeders**

› **Availability of the drinkers**

› **Availability of the perches**

› **Available space around the animals**

› **Mortality percentage (accumulated)**

› **Slaughter method at farm**

› **Other interventions (beak trimming, pinioning of the wings, shortening of the claws, other)**

› **Enrichment (presence or absence)**

› **Farmer practices (to warn on his arrival: turn on the radio, knock on the door)**

Resource-based indicators, animal-based indicators

In the welfare assessment protocol, animal-based indicators are chosen over resource-based indicators since they measure the welfare status in a more direct way. They can be observed on the animal directly (preening behaviour for example) or indirectly (by the mortality follow-up for example).

2. Animal behaviour assessment

In order to evaluate the welfare of the birds, direct observation of the animals is key; this is the reason why the behavioural measures are that important. By being trained to behavioural observation and following a specific scientist protocol, the validity of the results is ensured.

How to sample?

The assessor chooses 6 stops in the barn, sufficiently distant from each other to prevent the risk to observe twice the same bird and to obtain a representative sample of the flock.

Observation zones must be around 2m^2 each. The observer is free to define fixed visual cues in order to demarcate the zone.

Among the 6 observation zones, 2 must be on the slatted floors.
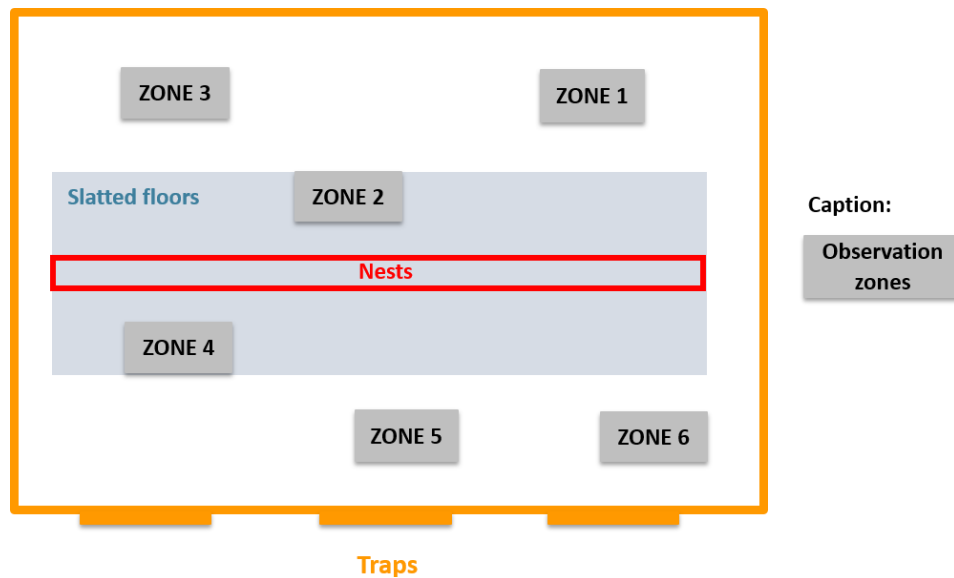
A few precautions

Wear similar colors to the ones used by the farmer and walk into the building the same way he usually does (for vet users only). Do not hesitate to adjust the size of the observation zone as well as its location, in order to comfortably observe the birds without disturbing them. Ensure that there is enough light to do the evaluation. In case of any sudden event impacting the behaviour or the birds (thunder, plane…), stop the assessment and start again a few minutes after in order to let them come back to a normal activity.

To start the assessment place yourself at the entrance of the building or in the entrance airlock if a window allows you to observe animals in the barn, and observe:

› **Bird distribution** (this can be 1. homogeneous, i.e. a maximum of 3 small zones without birds, 2.almost homogeneous, i.e. presence of some empty spaces but of small sizes, or 3. heterogeneous, i.e. one or several large zones without birds)

For each zone, count the number of birds present.

Then, note each occurrence of the following behaviours for 2 min:

› **Dust bathing** (lying on the ground, the animal shakes the litter with its wings and claws to coat its feathers with dust)

› **Foraging** (pecks the litter or another element – except the feed – and/or scrapes the litter with its claws)

› **Preening** (cleans its own feathers with its beak)

› **Stretching of wings/ legs or wing flapping** (the bird deploys one or both wings calmly and on the spot- without locomotor activity- or extends one of its legs, flaps its wings)

› **Positive interaction toward other birds** (mutual grooming, non-aggressive pecking, duelling)

› **Aggressive behaviour toward other birds** (aggressive peaking directed to one or several birds, the head or the neck are often targeted).

⚠️ Be vigilant in distinguishing an aggressive pecking from an interaction. Indeed, duels between animals are not synonymous with aggressiveness.

When the 2min have elapsed, count again the number of birds present in the zone.

For each zone, note the percentage of birds' which are:

› **Moving** (the bird is moving at least two steps without any aggressive or panic movement)
› **Panting** (breath quickly, the beak is open)

Then, for each zone, indicate if enrichments/perches are present and in that case if they are used by the birds during the observation time. Also, note if aggressive behaviours have been observed particularly around feeders and drinkers.

At the end of the assessment of each zone, qualify:

› **Birds' reaction to human presence** (present around at more or less 1 meter from the assessor; with or without contact with the assessor)

Handling birds (optional)

› **Handle two birds** and note the number of birds with keel bone damage. Palp the bird keel bone et note any deformation or deviation from its normal shape.

3. Assessment of health information

Health information, associated with behavioural measures, are necessary to ensure as complete an assessment as possible.

How to sample?

Do 2 passages as recommended below:

1. Keep a calm pace;

2. Plan to do 8 stops during the first passage and 7 stops during the second passage, equally distributed along the barn length;

3. Each stop, randomly identify 3 hens and observe the indicators described below. If one hen is concerned by several indicators, all of them must be considered by the assessor.

Traps
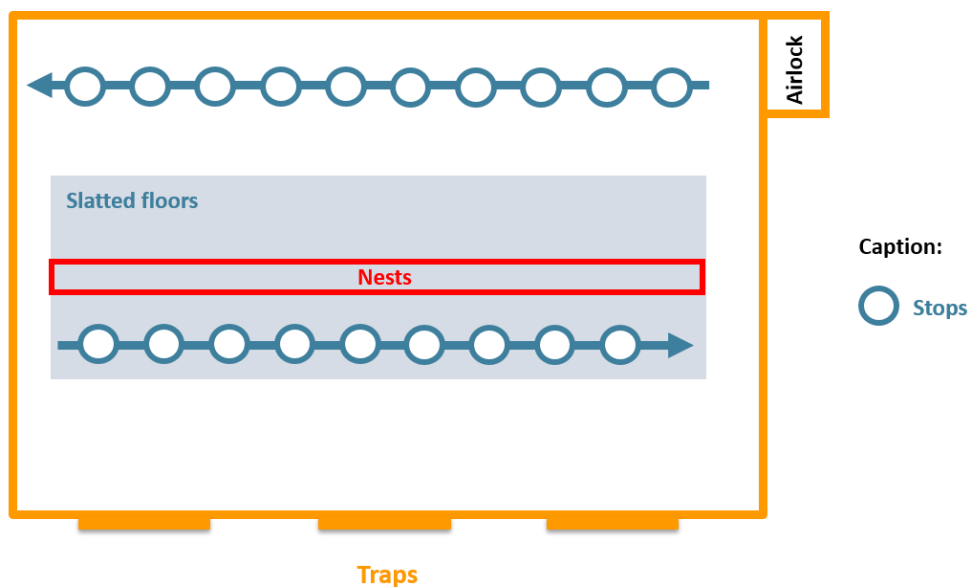
Note each

› **Wound:** lesion of at least 1cm, healed or still fresh, on the head, the back or the rear

› **Small:** around half less than the average bird size

› **Other abnormality:** bird with discoloured crest, …

› **Main featherless area** (back, tail, cloaca/ neck, head/ wings)

› **Beak trimming quality:** no beak trimming; Normal beak trimming; With minor abnormalities; With major abnormalities

› **Plumage condition:** very good; Some damaged or missing feathers; At least 5cm of naked skin

At the end of each sweep, estimate:

› **The litter quality** (either dry and crumbly, or crumbly but damp, or crumbly but crusted in areas, or totally crusted and wet).

At the end of the assessment, qualify:

› **The presence of crowd movement/panic** of the birds during the assessment.

› **The nervousness of the birds** during the assessment.

Few precautions:

To limit sampling bias, observe the 1st hen in front of you, then the 2 hens on the left. This avoids focusing on animals with any anomalies.

Overall assessment

Thanks to the application, the assessment results are immediately visible.

The marks of each criterion are put onto a spider map which allows comparison of the results with other farms of the same poultry production.
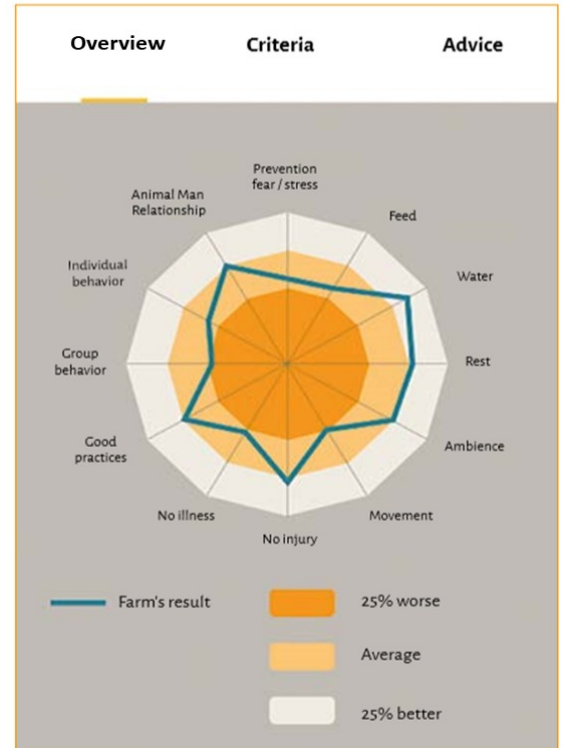
The farmer can also receive the details of each indicator.

Some advice is provided in order to improve next results.

What now ?

This tool has been built to improve animal welfare. The results representation allows you to visualize your strengths and weaknesses. To improve the criteria causing you problems, you can:

- exchange information with your technician or vet on the proposed action plan of the app. in order to improve the future results of your assessment

- to put in place actions or complementary measures You will then notice the effect of any changes by repeating the assessment.

The application is available for smartphones

The application is an easy user-friendly tool. It allows facilitation of the welfare assessment: **collection and analysis of the data** through formula and integrated calculation as well as results on a **spider graph**. Depending upon the assessment results, some guidance is provided. A short tutorial explaining the employment of the application is available to the users. Training is done by ITAVI to ensure a good understanding of the method and a good utilisation of the application.

Spider map of the assessment results through the EBENE method, on smartphone. Each color represents the result of the poultry production of the farmers (in brown shading, the weakest 25%, in light shading, the best). The best 25% of marks are represented in the edge of the spider, the center represents the lowest marks.

Do not throw on the public highway - Photos : ITAVI - Françoise Foucher et AVIPOLE FORMATION