



## Frequently asked questions about the SELEGGT process

### 1. Why does chick culling exist in the first place?

Nowadays, breeding focusses almost exclusively on very specialised and high-performing poultry breeds. On the one hand, there are specialised broiler breeds, characterised by fast growth and a high proportion of breast meat. When using these broiler breeds, both male and female chicks are reared until reaching slaughter age. On the other hand, there are laying hen breeds, that lay about 300 eggs per year, but grow only very modestly. For these reasons, the male offspring (brothers) of the laying hen breeds are neither suitable for egg production nor economically viable for meat production and are mostly killed immediately after hatching.

### 2. How many chicks are killed each year in Germany and what happens to them?

Statistics show that around 45 million male day-old chicks of the egg-laying breeds are killed each year in Germany alone. These are, amongst other things, used in zoos, for example as reptile food.

### 3. With REWE Group's layer brother initiative („SPITZ & BUBE“ at REWE and „HERZBUBE“ at PENNY), the REWE Group has already taken an alternative approach and is currently rearing male chicks. Would it not make sense to extend the commenced path to the whole sector?

This method is considerably more expensive than rearing broilers since layer brothers take much longer due to their very slow growth, the feed conversion of these animals is much poorer, and the consumer does not prefer their type of breast meat. Consequently, layer brother fattening will also remain a niche solution in the future.

### 4. Is it possible to breed a so-called cost-effective dual-use breed?

Poultry breeders worldwide are currently working hard on this. However, corresponding progress in breeding can only be expected – if at all – in the long term. Especially since the laying performance and the muscle growth in the genetic material of poultry correlate negatively with each other – i.e. they practically exclude each other.

### 5. How does gender identification in the hatching egg work using the SELEGGT process?

In the SELEGGT process, the hatching egg that has been in the incubator for 8 to 10 days, is firstly taken out of the incubator and placed in a specific position. Here, a sensor first checks if the hatching egg contains an embryo. In all fertilised hatching eggs, lasers create a 0.3 millimetre hole in the eggshell. Then just a minimal amount of allantois fluid is extracted from the fertilised eggs. By utilising a non-invasive procedure to extract the liquid the fertilised eggs are left unharmed. Hence the interior of the hatching egg is untouched and remains safe and sound. If the embryo is female, the drops will contain estrone sulphate, a female hormone.



The drops are then placed into a patented marker outside of the hatching egg. The marker reacts to the estrone sulphate and changes in colour. The hatching eggs can now be sorted according to the colour change. The male hatching eggs and unfertilised hatching eggs are turned into highquality feed, and the female hatching eggs are returned to the incubator. The minuscule hole in the eggshell does not need to be sealed as the inner membrane mends itself. Consequently, only female chicks hatch on the 21st day of the incubation.

## 6. Is it necessary to kill off the male hatching eggs after sorting them out?

In principle, a chick is only capable of surviving from day 21, i.e. on the day of hatching. Nevertheless, it should be noted that ongoing embryonic development processes take place during the incubation phase. These can be stopped by a brief shock freezing after sorting, which definitely terminates the development of the male hatching eggs.

## 7. What additional costs arise from the introduction of the SELEGGT process?

Customers are expected to pay 1 to 2 cents more per table egg.

## 8. Will the SELEGGT process be feasible to use in every hatchery in the future?

Basically yes, because the two system components "extraction of the liquid" and "analysis of the liquid" can be adapted to the requirements of any hatchery with the aid of scalable components.

## 9. Is the procedure safe? Will lasering allow for germs to invade the hatching egg?

Firstly, it must be stated that hatcheries must comply with extremely high standards of hygiene as a matter of principle. Accordingly, it is customary for every person that enters a hatchery to first take a shower and put on clean, dedicated indoor clothing. In addition, strict hygiene plans are implemented in hatcheries. The laboratory tests, which we conducted in relation to lasering the hatching egg did not reveal any negative effects on the hatching egg or on the later chick. Thanks to the laser, the fluid can be extracted in a non-invasive manner. This improves the hygienic conditions considerably and speeds up the process. Needles are no longer used any more so the interior of the hatching egg is neither touched nor damaged during the process. Performance tests, which were carried out by the University of Osnabrück on sexed laying hens also showed an unobtrusive process.

## 10. Where will the future machines and technologies be produced?

One of the partners of SELEGGT GmbH is the incubation technology company HatchTech B.V. from the Netherlands. Future machines will be constructed in the Netherlands under its leadership.

## 11. How are the hatching eggs sealed again?

Since we only create a minuscule hole in the egg shell of the hatching egg using a laser, it is unnecessary to seal it again. The inner egg membrane mends itself after a few hours.



12. Is it ethically sound that millions of male hatching eggs may be used in the future as a component of animal feed?

Hatching egg powder as a feed component can be considered very positive as it contains important nutrients and a very favourable amino acid pattern. The SELEGGT process, therefore, offers a major advantage by allowing us to obtain this feedstock.

13. Does the procedure have consequences for the later chicks?

As described above, performance comparisons at the University of Osnabrück have shown no differences between hens bred via the SELEGGT process and hens from a conventional hatchery. Likewise, there are no significant differences in hatching rates between hatching eggs from the SELEGGT process and those sexed manually.

14. Is it anticipated that the industry will strictly comply with the ban on chick culling when the SELEGGT process is market ready?

The market readiness of the SELEGGT process provides an alternative to chick culling. We assume that all parties involved, NGOs and governments will take a sensible approach and hatcheries will be granted adequate leeway to introduce the technology according to individual requirements. However, we are not the primary point of contact here.

15. To what extent (how many hatching eggs) have previous tests on the endocrinological SELEGGT process taken place? How accurate were the analyses?

To this day, far more than 100.000 hatching eggs have been analysed using the SELEGGT process. The accuracy of the analyses were very satisfactory, usually around 98 %.

16. Why was the "SELEGGT Arcus" model superseded by a new process?

The SELEGGT technology is based on technical innovation cycles. The non-invasive laser technology offers definite advantages in terms of hygiene and operating speed.

Find more information about respeggt  
on the following pages!



## Questions about respeggt

### 1. What's behind the respeggt promise?

The respeggt promise means: "Every food product with the respeggt label is guaranteed to come from a supply chain complying with the "Free of Chick Culling" specification." This is achieved by the so-called SELEGGT process.

The process is based on endocrinological gender identification in the hatching egg. On the 8th–9th day of the incubation, a small drop of liquid is extracted from the hatching eggs for the gender identification. By utilising a non-invasive procedure to extract the liquid the fertilised eggs are left unharmed. Hence the interior of the hatching egg is untouched and remains safe and sound. The extracted drops of liquid are put into a patented marker outside of the hatching egg. Then a reaction takes place where the colour of the sample changes, making it easy to identify whether the hatching egg is male or female. The eggs are then sorted into male and female hatching eggs. The male hatching eggs are turned into highquality feed, and the female hatching eggs are returned to the incubator. These male hatching eggs gain economic added value when powdered and integrated into the feed recipes for farm animals.

The respeggt promise is guaranteed through seamless monitoring of the supply chain.

### 2. Who is allowed to print the respeggt label on their product?

#### What are the requirements for the certification?

The respeggt label "Free of Chick Culling" is a trademarked word/image owned by SELEGGT GmbH. In principle, any company that meets the requirements can label its products with respeggt.

The requirements are as follows:

- Only table eggs or foodstuffs containing an egg product as part of its ingredients can be labelled with respeggt.
- It must be guaranteed that foodstuffs containing table eggs or egg products labelled with respeggt originate from a laying hen farm in which the culling of the male day-old chicks has been refrained from.
- Seamless monitoring of the supply chain must be guaranteed.

Currently, the respeggt label is found on fresh table eggs that keep the respeggt promise by implementing endocrinological gender identification in hatching eggs in the supply chain. In the future, it will also be possible to label foodstuffs that contain significant amounts of processed fresh eggs.

### 3. How can it be guaranteed that there was no chick culling in the supply chain of respeggt-eggs?

In order to guarantee that a laying hen could hatch and grow up without her brother being killed, seamless monitoring of the supply chain is mandatory.



Blockchain technology lays the ground work for tracing the respeggt-eggs. Each member of the supply chain is obliged to record specific information about the eggs via an app at fixed times. The data is will be stored decentrally and automatically encrypted in independent databases. No third party is required to authorize transactions, but there are rules to which all participants – including the operator of the blockchain system – must abide. If anything in the verification process appears to be incorrect, the preceding and following participants in the supply chain are automatically informed, depending on the sanctioning mechanism. Allowing them to investigate the issue and resolve it if necessary. The process provides a tamperproof promise with regard to the labelled products and thus lays the foundation for the respeggt promise.

#### **4. Where can you buy respeggt-eggs?**

The respeggt-eggs will be available from mid-November in a large number of REWE stores in the Berlin region and in all PENNY stores in the Berlin city area. The products will be available in all PENNY and REWE stores in Germany by the end of 2019.

#### **5. Will table eggs of sexed laying hens be specifically labelled?**

From autumn 2018, "Free of Chick Culling" freerange respeggt-eggs will be available for the first time in all 223 REWE and PENNY stores in Berlin. In addition to the label on the packaging, these eggs are also marked with a "respeggt" stamp on the egg. This enables the customer to identify immediately whether a "respeggt" carton also contains respeggt-eggs.