

TECH TUESDAY - WEBINAR SERIES

‘Chick Grading’



Are the percentages shown suggestions on what navel quality should be?

The presented percentages are a proposed method of scoring. The target/accepted percentage varies from one company to another. We are proposing this scoring, but it is also up to a company to set up its own target level. This depends mainly on the client demands and if the company is an integration or not.

How can we practically check yolk free body mass in the farm?

The YFBM should be measured in the hatchery as we can have chick weight loss during chick storage in the hatchery and during transportation. So, the measure of the YFBM in the farm will be misleading. The method will be to sacrifice the chick (to kill the chick) to weigh the body, then take out the yolk and weigh the carcass and yolk separately. You can calculate the percentage of the yolk weight to the whole chick to evaluate the efficiency of the yolk absorption.

Please note chick weight for Chick yield purposes should be checked at take-off and not in the chick room as mentioned.

Thank you for the note. We confirm this remark. The chick yield should be measured at the

take-off to have an idea about the incubation conditions. But, if the chick will spend a long period in the hatchery from the take-off to the delivery, a risk of a decrease of the chick yield is present. One of the methods to evaluate the chick storage conditions is to evaluate the chick yield at the chick room. If the chick yield had a notable decrease from the chick take-off to the chick delivery, we should verify if we are facing high temperature or low humidity in the chick room.

Is there a difference in hatchability % between single stage and multi stage hatchery and if so how much?

Yes. We can get a better hatchability (+1% to +2%) and chick quality on single stage. This is a great question which is not easy to answer. To compare between the two types of machines, hatcheries need to have the same egg flock with the same set up conditions in both type of machines. In theory, with all good practices put in place, the single stage machine improves the homogeneity of the incubation period resulting in better and greater control of the hatch-window, the egg weight loss and the adaptation of different flocks, so resulting in better chick quality and higher number of saleable chicks.

How can you reduce the length of the hatch window?

To reduce the hatch window length we need to: 1) Guarantee the homogeneity of incubated eggs (the same weight, breeder age, breeder strain), 2) Guarantee the same storage conditions (duration, temp. humidity), 3) Guarantee a uniform environment during the incubation.

If the chicks hatch but are dead with rotten condition and very smelly in the basket, what is the reason?

These are signs of high contamination that can occur during egg management on the farm, during transportation, during egg storage or during the process in the hatchery. First of all, we recommend you to localize the origin and the germ causing contamination to be able to treat it. You can start to review if this is occurring on a special flock or to all flocks so you can start doing some troubleshooting. For example, if this was noted with a special flock you can discuss with the breeder manager and ask if they are facing some breeder health issues. If it concerns all flocks in the hatchery, the problem can be related to the presence of some contamination in the hatchery. In this case, you should do microbiological investigation to localize the contamination and you should review your cleaning and disinfection procedures in the hatchery.

What's a suitable time interval between egg collection and storage in the breeder farm?

The egg collection should be done as soon as possible after the egg laying. But in the field,

this will vary according to the labor cost, the kind of technology used (manual or automatic nest) and between countries. The best method is to collect the eggs as soon as possible to avoid nest contamination, the increase of floor eggs and early embryo development.

How do you solve the issue if there is low oxygen level in the machines?

On the machine itself, this can be related to either the damper calibration/regulation which restricts the air volume, or the single stage profile of the damper opening level. As the air for the machine comes from the room, another point to check is the refresh air volume in the room for all machines. If you have machines with CO₂ sensor, this can help control the oxygen level visually. The oxygen level depends also on the hatchery location in terms of altitude. Hatcheries that are built 1200 meters above sea level show less oxygen availability.

Waterless incubation, damper closed in first week?

This is happening on the single stage setters for the first 5-7 days of incubation. Dampers will be closed and as a result of the warm-up that occurs during the first days, humidity will rise. The humidity will increase due to the increase of temperature and the eggs coming from the egg storage room.

What is the best way to calibrate dampers , other than visual observation?

Damper calibration can be done only visually. So we should verify if the full opening position of the damper corresponds to the full open position of the sensor feedback value. This should be verified for the different zones on the multizone machines as sometime the link between zones can be disconnected.

You mentioned high incubation temperature as the cause of chick quality, what is the allowable incubation temperature?

The machine temperature will depend on some parameters related to the breeder age and strain, the type of machines and the incubation stage. When we are discussing the incubation temperature, it will be better to think about the eggshell temperature, that should be between 100-101.5°F (that will depend also to the breeder age and strain), the incubation length (504H +/-5H) and the length of the hatch-window. In case of a special need, you can send us the different information related to the breeder age and strain, the type of machines, the room conditions (temp.) and the plenum pressure to be able to help you.

Does the setter impact chick quality?

Setter conditions can impact the chick quality. In the setter we have the start of the embryo development. This development will depend on the setter conditions. For example, high temperature on the setter can result in malformed chicks.

How to know which setter is good?

Many parameters can give an idea about the setter: The percentage of early and middle mortalities, the egg weight loss, the eggshell temperature at transfer, and the chick quality.

How can we reduce Navel problems?

Factors that impact the navel quality are: Temperature, humidity, ventilation, hatch-window and the contamination. Mastering these factors can improve the chick navel. But, we should know that old breeders and long storage can lead to some problems with the navel quality.

What is the allowable storage period of eggs to achieve good quality chicks?

We can cite an average of 7 days. But, please keep in mind that this is a large subject as the storage impact on hatchability and chick quality will depend on other factors such as the breeder age and the presence of corrective treatments like SPIDES.

Chick holding room conditions, how temperature and air quality should be baselined?


We recommend a temperature between 24°C and 27°C and a humidity between 50% and 55%. But, for the temperature, we recommend it is evaluated regarding the chick rectal temperature and the chick behaviour.

What is a good percentage of yolk weight to the whole chick weight?

The percentage of the yolk weight is about 10%. You can have higher percentage with long storage, old breeders or inappropriate incubation conditions.

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