

# Relation between Incubation, Chick Quality and Later Performance

Presented on the WPSA in Egypt 2009, by Conny Maatjens

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**The goal of a hatchery is a high hatchability and a good chick quality, resulting in a good performance. Incubation conditions need to be controlled and adapted to the requirements of the embryo to optimize embryo development during incubation. Machine temperature should be adjusted to eggshell temperature, as this reflects the temperature the embryo is experiencing. In the field, this is not always the situation.**

Incubation temperature and availability of oxygen are two important factors during incubation (Lourens *et al.*, 2007). High temperatures and low oxygen availability due to high carbon dioxide levels are quite common at the end of incubation and decreases organ and body development at hatch (Leksrisompong *et al.*, 2007; Lourens *et al.*, 2007), but also performance at slaughter age (Hulet *et al.*, 2007; Joseph *et al.*, 2006).

An optimal incubation process is reflected in a maximal embryo development and expressed in a higher yolk free body mass and hatchling length (Lourens *et al.*, 2005), as those two are related (Wolanski *et*

*al.*, 2004). Hatchling length can be used as a tool to measure hatchling quality. Relationships between this parameter and later performance are not consistent between studies (Baarendse *et al.*, 2006; Willemsen *et al.*, 2008; Wolanski *et al.*, 2006). However in our study, we found that hatchling length seems to be a better parameter to predict subsequent performance than hatchling weight, when gender is taken into account. Chick length was not related with feed efficiency of broilers (Molenaar *et al.*, 2008).

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