

RESEARCH HIGHLIGHTS

Delayed Embryonic Mortality and Lower Hatchability in Naked Neck Embryos During Incubation

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Human food security is greatly influenced by animal production especially poultry production. Chicken from poultry provides many beneficial foods such as; eggs and meat that are rich in protein and have great nutritional value. However, for proper production and attainment of full energy products careful management for chicken production is required¹.

One of the mutant chicken breed that is naked neck is known for its adaptive nature under elevated ecological circumstances. It has a high carcass yield and high post-embryonic vitality². But there has been a problem with this mutant species due to embryonic related high mortality rate. It was reported to be a genetic problem³.

Researchers hypothesized that as the naked neck breed had less egg production so the breeders wait for the incubator to get fill with eggs. In this way, some eggs are placed there for longer periods. Moreover, in many countries, not much attention is paid to storage durations and temperature conditions associated with chicken production.

In the eye of the above context, researchers carried out a new experiment to store naked neck eggs under different temperature conditions over a variable number of days and review egg quality, fertility, blastoderm quality, chick quality and hatchability. Apart from this, it was also the aim to provide reasons regarding possible causes of a high rate of late embryonic mortality and lower hatchability in naked neck embryos during incubation⁴.

For the study purpose, the researchers collected the eggs, measured egg quality characteristics, determined blastoderm diameter followed by incubation, candling and hatching of the eggs. After that chick's quality was assessed.

It was found from the study results that the egg weight before storage and after storage was not considerably different during storage amidst warmth behavior that was cold room against ambient.

However, the moisture of eggs was higher in ambient versus cold storage temperature and increased with increasing days of storage. There were direct effects of ambient temperature storage and longer storage duration on albumen and yolk quality, fertility, blastoderm development and hatchability due to increased number of eggs often classified as clear but may not necessarily be infertile. So the hypothesized clause of the researchers implied that eggs that were collected in small quantities may go directly to unnecessary temperature and other environmental conditions, which in return causes the lower hatchability in naked neck chicken appears to be true.

It was concluded from the study that the conditions of protracted storage of naked neck chicken eggs outside an optimum temperature and storage within optimum

temperature-duration were harmful to eggs, blastoderm and chick quality as well as hatchability. Further research using a large number of eggs is needed. The practice of egg storage in ambient temperature needs to be well-managed in tropical hatcheries to maximize hatchability.

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