

## REVIEWER'S REPORT

Manuscript No.: JNHM- 169

**Title:** Biological, nutritional, and environmental factors affecting of growth and physiological productivity in poultry: a review

### Recommendation:

Accept after minor revision

| Rating         | Excel. | Good | Fair | Poor |
|----------------|--------|------|------|------|
| Originality    |        |      | ✓    |      |
| Techn. Quality |        |      | ✓    |      |
| Clarity        |        | ✓    |      |      |
| Significance   | ✓      |      |      |      |

Reviewer's Name :-Bilqees Hamza

### Detailed Reviewer's Report

Below is a detailed peer-review report for the manuscript titled "**Biological, nutritional, and environmental factors affecting of growth and physiological productivity in poultry: a review**".

#### Formal Peer-Review Evaluation Report

**Manuscript Title:** Biological, nutritional, and environmental factors affecting of growth and physiological productivity in poultry: a review

**Journal:** Journal of Natural Health and Medicine (JNHM)

**Recommendation:** Accept with Minor Revision

#### 1. Executive Summary & General Overview

The manuscript provides a timely and comprehensive synthesis of recent literature (focusing on post-2015 developments) regarding the key biological, nutritional, and environmental drivers influencing poultry growth rates, physiological performance, and feed efficiency. The review effectively highlights how modern intensive genetic selection has increased poultry growth potential while simultaneously increasing metabolic sensitivity, rendering birds more vulnerable to nutritional imbalances and environmental stressors.

The overall structure of the review is well conceived and logically categorized into three primary themes:

- 1. Biological Determinants:** Genetic selection, the growth hormone-insulin-like growth factor (GH-IGF) axis, muscle fiber hypertrophy vs. myopathies (e.g., wooden breast, white striping),

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metabolic trade-offs associated with immune system activation, and early-life gut microbial development.

2. **Nutritional Drivers:** Energy density, essential amino acid profiling (Lys, Met, Thr, Trp), lipid oxidation risks, organic trace mineral bioavailability, functional feed additives (phytase, xylanase, probiotics, prebiotics), and the timing of early post-hatch feeding.
3. **Environmental Effectors:** Ambient thermal stress (heat and cold), relative humidity, airborne contaminants (specifically ammonia levels  $\geq 30 \text{ ppm}$ ), stocking density, lighting programs, litter quality, and stress from human/noise disturbance.

The paper successfully establishes that achieving maximum productivity relies on an integrated management approach that pairs precision nutrition with controlled housing environments to unlock genetic potential. However, several minor textual, typographical, and bibliographical issues must be addressed before publication.

### 2. Strengths of the Manuscript

- **Comprehensive Conceptual Integration:** The manuscript effectively connects physiological mechanisms (e.g., endocrine responses, myofiber hypertrophy, oxidative stress) with practical management practices (e.g., phase feeding, ventilation, stocking density).
- **Relevance to Contemporary Industry Challenges:** The paper directly addresses pressing issues facing modern poultry production, including heat stress management under climate shifts, muscle myopathies resulting from rapid selection, gut health post-antibiotic growth promoter (AGP) bans, and environmental sustainability.
- **Thorough Scientific Basis:** Key biochemical pathways, such as corticosterone-induced protein catabolism and muscle satellite cell proliferation, are properly contextualized alongside literature on feed additive strategies.

### 3. Major Revisions Needed

#### A. Title Grammar Correction

The current title contains a grammatical redundancy: *"Biological, nutritional, and environmental factors affecting of growth and physiological productivity in poultry: a review"*.

- **Required Fix:** Change the title to *"Biological, nutritional, and environmental factors **affecting growth** and physiological productivity in poultry: a review"*.

#### B. Species-Specific Terminology Errors (Crucial Correction)

The manuscript contains several inadvertent references to other species or groups that appear to be drafting oversights or copy-paste artifacts:

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1. **Line 63:** States that feed additives have been "...widely used in **pig production** to improve nutrient availability...".
2. **Line 317:** States that "...it is necessary to keep **pigs** in their thermoneutral zone".
3. **Line 350:** References "...circadian rhythm, **human** hormone secretion...".
4. **Line 371:** Reads "Poor sanitation exposes **women** to more pathogens...".
  - **Required Fix:** Replace "pig production" (Line 63) with "poultry production"; replace "pigs" (Line 317) with "broilers" or "poultry"; replace "human" (Line 350) with "avian"; replace "women" (Line 371) with "birds" or "flocks".

### C. First-Person Phrasing & Tone

On **Line 285**, the text uses an informal first-person phrasing: *"One point that I use to highlight during my lectures is the importance of early nutrition..."*.

- **Required Fix:** Rephrase to maintain a strictly third-person academic narrative (e.g., *"A critical point to emphasize is the importance of early post-hatch nutrition in optimizing gut functionality..."*).

### D. Formatting, Layout Artifacts, and Spacing

- The manuscript contains spacing errors and run-together words (e.g., a ny time on Lines 186–187; missing spaces around citations on Lines 54, 65, and 90).
- Random layout header text and watermarks appear in the body text (e.g., predomin EWd supp on Line 147; TIN IN on Line 357; Biosecurity on Line 367; and repeated UND tags on Lines 421, 467, 502, and 532).
- **Required Fix:** Thoroughly copy-edit the manuscript to clean up all typography, remove stray watermarks, and restore proper line spacing.

### E. Citation and Reference Consistency

1. **Year Discrepancy:** On Line 356, the text cites (Olanrewaju et al., 2016), but Reference #23 lists the year as 2019.
2. **Endocrinology Phrasing:** On Line 137, GnRH1 is described as activating hepatic IGF-1. Gonadotropin-releasing hormone (GnRH) controls gonadal activity, whereas Growth Hormone (GH) or GHRH drives hepatic IGF-1 production. This phrasing should be clarified.
3. **Citation Formatting:** Ensure all in-text parenthetical citations match the APA formatting used in the reference section.

## Final Recommendation

**Decision: Accept with Minor Revision**

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## **REVIEWER'S REPORT**

The review is scientifically sound, comprehensive, and well-structured. The manuscript provides clear value to poultry scientists, nutritionists, and flock managers. The necessary changes are purely minor editorial and technical corrections (fixing word choice, correcting non-poultry terms, removing first-person narrative, and resolving layout glitches). Once these minor adjustments are made, the paper will be fully ready for publication.