

RESEARCH ARTICLE

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OPTIMIZING DUCK PRODUCTIVITY: UNVEILING THE IMPACT OF TORCH GINGER (ETLINGERA ELATIOR) FLOWER EXTRACT SUPPLEMENTATION ON NON-CARCASS COMPONENTS IN LOCALLY RAISED MALE DUCKS WITH COMMERCIAL FEED

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Abstract

This study investigates the potential of optimizing duck productivity by exploring the impact of supplementing the diets of locally raised male ducks with Torch Ginger (*Etlingera elatior*) flower extract in conjunction with commercial feed. Beyond the traditional focus on carcass parameters, the research delves into the influence of this supplementation on non-carcass components. Through systematic analysis, we assess the effects on vital non-carcass aspects, providing insights into the holistic enhancement of duck production. The findings contribute to the evolving field of poultry nutrition and management, offering practical knowledge for sustainable and efficient duck farming practices.

Keywords Duck productivity, Torch Ginger (*Etlingera elatior*) flower extract, non-carcass components, commercial feed supplementation, locally raised ducks, poultry nutrition, sustainable farming, holistic enhancement, duck farming practices.

INTRODUCTION

Duck farming plays a pivotal role in the global poultry industry and contributes significantly to sustainable protein production. In the pursuit of enhancing duck productivity, traditional approaches have primarily focused on carcass parameters. However, to achieve holistic optimization, it is imperative to explore the impact of dietary supplements on non-carcass

components that are equally crucial indicators of overall productivity. This study delves into the innovative realm of supplementing locally raised male ducks' diets with Torch Ginger (*Etlingera elatior*) flower extract in conjunction with commercial feed, aiming to unveil the potential influence on non-carcass components and thereby optimize duck productivity.

Local duck farming, often characterized by its

adaptability to diverse environmental conditions and traditional farming practices, presents an opportunity for targeted interventions to improve overall productivity. Torch Ginger, known for its medicinal and nutritional properties, holds promise as a dietary supplement. Beyond the conventional focus on meat yield and carcass quality, this research explores the potential benefits of Torch Ginger flower extract on non-carcass components such as organs, feathers, and other vital parameters.

The integration of commercial feed, widely used in poultry production, with Torch Ginger flower extract supplementation introduces an innovative approach to enhance duck diets. The study seeks to contribute valuable insights into how this combination influences the physiological and morphological aspects of locally raised male ducks. By examining non-carcass components, such as organ development, feather quality, and other key indicators, the aim is to provide a comprehensive understanding of the holistic impact on duck productivity.

As the demand for sustainable and efficient poultry farming practices continues to grow, optimizing duck production becomes paramount. This investigation bridges the gap between traditional carcass-centric approaches and a more holistic understanding of duck productivity, offering practical knowledge that can inform nutritional strategies for locally raised male ducks. The findings have the potential to contribute to the advancement of sustainable and economically viable duck farming practices, aligning with global efforts to meet the rising demand for poultry products.

METHOD

To investigate the impact of Torch Ginger (*Etlingera elatior*) flower extract supplementation on non-carcass components in locally raised male ducks fed with commercial feed, a comprehensive and systematic methodology was employed.

Duck Management and Diet:

Locally raised male ducks were selected for the study to ensure relevance to traditional farming

practices. A controlled feeding trial was implemented, dividing ducks into experimental and control groups. Both groups were provided with a standard commercial feed, and the experimental group received additional supplementation with Torch Ginger flower extract. The supplementation dosage was carefully determined based on established guidelines, considering the nutritional requirements of ducks.

Torch Ginger Flower Extract Preparation:

Torch Ginger flower extract was prepared following standardized methods. Fresh Torch Ginger flowers were harvested, cleaned, and processed to extract the bioactive compounds. The extract was then carefully incorporated into the experimental group's feed to ensure uniform distribution and accurate dosage.

Data Collection on Non-Carcass Components:

Throughout the trial period, non-carcass components were systematically assessed. Ducks from both groups were regularly examined for organ development, feather quality, and other relevant parameters. Organ weights, feather characteristics, and any observable changes in morphology were recorded. In addition, blood samples were collected for hematological and biochemical analyses to gauge physiological responses.

Statistical Analysis:

Collected data underwent rigorous statistical analysis to discern significant differences between the experimental and control groups. Descriptive statistics, such as means and standard deviations, were calculated for each parameter. Comparative analyses, including t-tests or ANOVA, were conducted to evaluate the impact of Torch Ginger flower extract supplementation on non-carcass components.

Ethical Considerations:

The study adhered to ethical guidelines for animal research, ensuring the humane treatment of ducks throughout the trial. The research protocol was reviewed and approved by the relevant ethical committee, and care was taken to minimize any potential stress or discomfort to the animals.

By employing this comprehensive methodology, the study aims to provide a detailed understanding of how Torch Ginger flower extract supplementation influences non-carcass components in locally raised male ducks fed with commercial feed. The integration of traditional farming practices with innovative dietary interventions contributes to the potential optimization of duck productivity, aligning with sustainable and holistic approaches in poultry management.

RESULTS

The investigation into the impact of Torch Ginger (*Etlingera elatior*) flower extract supplementation on non-carcass components in locally raised male ducks fed with commercial feed revealed several noteworthy findings. Analysis of organ development, feather quality, and other vital parameters indicated measurable differences between the experimental group receiving the supplementation and the control group. Organ weights, feather characteristics, and physiological responses demonstrated potential impacts of Torch Ginger flower extract on non-carcass components.

DISCUSSION

The observed improvements in non-carcass components in the group supplemented with Torch Ginger flower extract suggest the potential benefits of this dietary intervention. Ducks in the experimental group exhibited enhanced organ development, characterized by increased weights and improved overall health indicators. Feather quality, a crucial aspect of duck productivity, showed positive changes, with feathers appearing healthier and more robust in the supplemented group. Hematological and biochemical analyses also hinted at potential physiological benefits associated with the supplementation.

The bioactive compounds present in Torch Ginger flower extract, such as antioxidants and phytochemicals, may contribute to these observed

effects. These compounds have been previously associated with positive impacts on animal health, including potential anti-inflammatory and immune-boosting properties. The results align with the notion that dietary supplements derived from natural sources could play a role in optimizing duck productivity beyond traditional carcass-centric approaches.

CONCLUSION

In conclusion, the findings of this study provide valuable insights into the potential of Torch Ginger flower extract supplementation to positively influence non-carcass components in locally raised male ducks fed with commercial feed. The observed improvements in organ development and feather quality suggest that the inclusion of Torch Ginger flower extract in duck diets has the potential to enhance overall productivity.

While these results are promising, further research is warranted to validate and refine these findings. Future studies could delve into the specific mechanisms underlying the observed effects and optimize supplementation protocols for practical implementation in duck farming practices. Additionally, considerations such as cost-effectiveness, scalability, and potential impacts on meat quality should be thoroughly assessed.

This research contributes to the evolving field of poultry nutrition and management, offering a holistic perspective on optimizing duck productivity. The integration of Torch Ginger flower extract supplementation into duck diets represents a promising avenue for sustainable and efficient duck farming practices. As the demand for poultry products continues to rise, approaches that enhance productivity while aligning with sustainable and holistic principles become increasingly relevant in the global poultry industry.

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