

Annotated Bibliography Final Draft

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My field is Biological Science and my chosen documentation type is Council of Science Editors (CSE) name-year style. My research question is: what are the universal outcomes of broody chicken hens on chicks?

References

Adam J, Andrew RJ, Workman L. 2000. Opportunities for visual experience which might allow imprinting in chicks raised by broody hens. *Behaviour* [Internet]. [cited 2023 June 29];137(2):221-231. Available from:
https://www.jstor.org/stable/4535700?sid=primo&saml_data=eyJzYW1sVG9rZW4iOiI2YTgwZTU1ZS1iMDNjLTRhOTktYjk4Ny02YTA0YjAwZDg4NGQiLCJlbWFpbCI6Im1nbDIyZ0Bmc3UuZWRR1IiwiaW5zdGl0dXRpb25JZHMlOlsiMzljYmQzMzQtOTdiNy00OThjLWJkNGMtM2FhMmRmODhiY2IwIl19&seq=6

This article covers the length of time chicks leave from underneath their mothers, on what day after hatching this first occurs, and how both of these factors depend upon the number of chicks the mother has. Not only are these actions recorded, but the movement of the mother hen is also noted. How her head moves in conjunction with the departing of chicks out from beneath her. The imprint relationship between the chicks and their mother, in addition to the imitation of chicks with other chicks, are revealed through this study. All three of the authors

have different perspectives to magnify the information expressed in the article. One author is from the humanities and social science department, another from the psychology, and the last from the biological sciences. The variation of backgrounds the authors originated from, and the peer-reviewed status of the article allow for the article's credibility to develop. In regard to my research topic, this work supplies indication of the mutually beneficial connection linking the mother hen to her chicks. This article records certain behaviors of the animals that are most relevant to support particular arguments in my research. Contrasting to my other sources, this source documents the data revolving around the "emergence" of chicks out from below their mother.

Edgar J, Held S, Jones C, Troisi C. 2016. Influences of maternal care on chicken welfare.

Animals [Internet]. [cited 2023 June 29];6(1):1-12. Available from:

<https://www.proquest.com/docview/1762028645?accountid=4840&pq-origsite=primo>

This article is an overview of the positive influence broody hens have on their young, the repercussions of chicks raised without that influence, and how that knowledge affects the poultry industry. Even with favorable influences of broody chickens, poultry farms are not likely to allow brooding by chicken hens. Therefore, this article additionally includes methods of advancing the poultry industry's well-being of their chickens through studies of broody hens. The authors of this work, at the University of Bristol and the University of St. Andrews, all have doctorate degrees and have studied extensively in areas of animal science and animal behavior. With the intended audience of this paper being analysts with science backgrounds in the poultry industry, this paper includes many in-depth scientific concepts and expressions. This circumstance, the authors' backgrounds, and that this work is a peer-reviewed scholarly article, all create the reliability of this information. In connection to my research question, this article

provides an acceptable foundation for my investigation into the relationship between broody hens and chicks. There is a large variety of behaviors displayed by broody hens that are discussed in depth in this work. These will be advantageous to reference in my essay when describing comprehensively the different behaviors of broody hens in association to chicks. Similarly, to this work, the articles titled “Mutual Influence of the Maternal Hen’s Food Calling and Feeding Behavior on the Behavior of Her Chicks” and “Influence of Chicks and Food Quality on Food Calling in Broody Domestic Hens” all discuss the vocalizations of a broody hen when food is present. Unlike the work “Persistent effect of broody hens on behaviour of chickens”, this work discusses various solutions to the ramifications of not having chicks be raised by a broody hen.

Fujino S, Kamimura E, Maruyama Y, Shimmura T, Tanaka T, Uetake K. 2015. Persistent effect of broody hens on behaviour of chickens. *Animal Science Journal* [Internet]. [cited 2023 June 29];86(2):214-220. Available from: https://onlinelibrary.wiley.com/doi/epdf/10.1111/asj.12253?saml_referrer

This article follows a study concluded by the same researchers. In this previous study, it was discovered that maternal care, through broody hens, on chicks had favorable outcomes. Higher levels of behavioral advancement and lower levels of agitation were among the outcomes of the chicks. However, “Persistent effect of broody hens on behaviour of chickens” is an article that considers the long-term results of broody hens on the growth and behaviour of young chicks. Moreover, the repercussions of broody hens as the chicks mature into adulthood. The experiment compared a cluster of 5-week-old chicks that were reared by broody hens and a cluster of 5-week-old chicks that were not reared by broody hens. The researchers recorded normal behaviors, aggressive behaviors, certain body measurements, egg production, and various

measurements regarding the eggs produced. The reliability of this study is shown through the evidence of previous experimentation completed and the detail that the study is peer-reviewed. In relation to my topic, this work provides confirmation that broody hens indeed have effects on their chicks, as well as these effects lasting well into adulthood. Dissimilar to my other sources, this article examines the effects of maternal care on chicks after maturation.

Leboucher G, Richard-Yris MA. 1987. Effects of exposure to chicks on maternal behaviour in domestic chickens. *Bird Behaviour* [Internet]. [cited 2023 July 1];(7):31-36. Available from: <https://univ-rennes.hal.science/hal-01327746/>

This work supplies a subject matter that is the reverse of my research topic. Instead of focusing on the effects of broody hens on chicks, this work explores how hens are affected by the behavior of chicks. The investigation into this issue was composed of two tests on chicken hens. One group of hens was introduced to young chicks during the day and the other group at night. More aggression was displayed between the mother hen and the chicks in the day group, but after some time both groups of hens showed behaviors that are usually displayed by broody hens. One of the authors of this work, Marie A. Richard-Yris, has also authored two other articles that I have chosen to use for my research. This portrays her considerable examination and study of chicken behaviors. In conjunction with that, the intended viewers of this work are researchers or scholars exploring chicken behaviors. Both of those notions articulate the authenticity of this article. The experimentation and discussion presented by the report will contribute to deepening my understanding of the connection between hens and chicks. The research findings provide me with a direction in which to inquire further about my topic. Similar to the “Influence of Chicks and Food Quality on Food Calling in Broody Domestic Hens” article, this work focuses on the

dynamic of how chicks affect hens. Unlike some of my other chosen sources, this article provides a record of the aggression levels over the course of days by hens on chicks.

Lunel C, Pierre JS, Richard JP, Richard-Yris MA, Wauters AM. 1999. Influence of chicks and food quality on food calling in broody domestic hens. *Behaviour* [Internet]. [cited 2023 July 1];136(7):919-933. Available from:
https://www.jstor.org/stable/4535649?sid=primo&saml_data=eyJzYW1sVG9rZW4iOiZzZjMzMdY2Yi1mNDJhLTQ1NTMtYTljMC0wYTcyODc1MWFjNjMiLCJlbWFpbCI6Im1nbDIyZ0Bmc3UuZWRR1IiwiaW5zdGl0dXRpb25JZHMlOlsiMzljYmQzMzQtOTdiNy00OThjLWJkNGMtM2FhMmRmODhiY2IwIl19

This article reviews how chicks affect their mothers rather than the reverse. More precisely, the researchers evaluated the extent to which adequate nutrition and the actions and responses of chicks, affects the food calling of maternal hens. The investigation comprised of nineteen broody hens with two chicks each. The hens were subject to four distinct food types and five individual situations regarding their chicks. Some of the food offered consisted of starter feed mixed with wheat or even no food at all. The chicks being completely removed, not being allowed to reach the food, or being able to have unbound entrance to the food are some of the circumstances imposed on the mother hen. Two of the authors of this study have undertaken supplementary work concerning the subject matter of the association joining broody hens and their chicks. This actuality and the notion that the researchers performed many different trials in order to receive impartial results both produce the trustworthiness of the article. This study relates to my research topic in a manner that supplies me with far extensive comprehensions of the distinctive bond between broody hens and their chicks. This study is similar to the study titled “Mutual influence of the maternal hen’s food calling and feeding behavior on the behavior

of her chicks” due to the pair of them analyzing the role of food calls in the mother-chick relationship.

Richard-Yris MA, Wauters AM. 2001. Mutual influence of the maternal hen’s food calling and feeding behavior on the behavior of her chicks. *Development Psychobiology* [Internet]. [cited 2023 July 1];41(1):25-36. Available from: <https://onlinelibrary.wiley.com/doi/epdf/10.1002/dev.10042>

“Mutual influence of the maternal hen’s food calling and feeding behavior on the behavior of her chicks” is an article that appraises the impact of food calls manufactured by a broody hen on the conduct of her chicks. Sixteen hens with two chicks apiece were granted four food possibilities with two bowls of each food for a total of eight feasible choices. The researchers noted the actions of both hen and chicks, the sounds being made, and the stretch of space equidistant between the mother and the chicks. The results revealed that the broody hens produce food calls even when food is not present and when their young have been apart from them. Chicks acknowledged their mothers eating more often when the mother initiated a food call. The previous research into maternal care in chicks implemented by the authors of this article advance the credibility of this study. This article produces examples of the maternal care broody hens impart on their young that would be accommodating to my research topic. This study is very similar to the “Influence of chicks and food quality on food calling in broody domestic hens” work. Both examine the position of food in the relationship between a broody hen and her chicks. However, unlike “Influence of chicks and food quality on food calling in broody domestic hens” this work records hens affecting their chicks while the other article documents the reverse.