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The Outcomes of Broody Hens on Chicks and the Benefits of the Those Outcomes

Chickens supply human beings with protein-rich meat, nutrient-filled eggs, and emotional comfort and amusement if they exist as pets. Therefore, the health of chickens is a principal issue in both commercial industry farms and personal backyard flocks. With the aim of protecting the general condition of chickens, information must be understood regarding the well-being and ministration of these animals. That knowledge of chickens begins when an embryo starts to mature in an egg. Furthermore, the maturation of said embryo is either accomplished artificially in an incubator or naturally beneath a broody hen. These two methods of rearing are exceedingly unalike and yet attain the equivalent conclusion. However, the repercussions of the choice of rearing occur after the chicks hatch. There is certainly more research concerning artificial rearing as it is manmade as opposed to organic natural rearing. For that rationale, research demands to be executed with respect to the production of chicks by broody hens. More specifically, what the outcomes are of broody hens on chicks and are those outcomes beneficial. From the works studied, the effects of broody hens on chicks consider the vocalizations, feeding behaviors, social behaviors, and the education involving predators and prey. Regardless of the nature of information the works provide, every work entirely advances the notion that these effects of broody hens on chicks are unequivocally beneficial.

The research displayed in this composition is devised to respond to the inquiry about the effects of broody hens on chicks as well as whether those effects are beneficial or not. The means used to discover the sources required to present this explanation are the FSU Library and Google Scholar. Five of my sources originated from the FSU Library, while one was located through Google Scholar. Four of those five resources are peer-reviewed articles, whereas all six of my sources are scholarly articles. In addition to these assets, I own chickens and have collected first-hand observations of the relationship between broody hens and chicks. As credibility generally comes into question when dealing with references, many of the works I have chosen to utilize were written by authors who have studied extensively in the areas of animal science and animal behavior. Additionally, several of said authors have published supplemental articles about broody hens. In detailing the contents of the six sources, only one source discusses the prolonged effects of broody hens on chicks that advance into adulthood. Two of the six sources consider the general encompassing outcomes of broody hens on chicks, while two other sources review quite the opposite with the repercussions of chicks on broody hens. Lastly, two of the six references examine the factor of food as it relates to the influence of broody hens on chicks. Overall, the many sources provide definitive evidence to justify the favorable nature of broody hens.

In analyzing the outcomes of a broody hens' vocalization and feeding behavior on her chicks, it is essential to understand the concept that vocalizations and feeding behavior are closely associated to one another. The article "Influences of Maternal Care on Chicken Welfare" records the various categories of vocalizations. Those include "roosting calls, maternal cluck calls, and feeding calls" as well as "alarm calls" (Edgar et al. 2016). A "feeding call" occurs when a broody hen vocalizes to indicate that she has found food or to ensure her chicks are near her (Richard-Yris and Wauters 2001). In the smalltime frame of when a broody hen locates food,

her chicks are swiftly moving to accompany her due to her “feeding call”. Through this event, the hen will then demonstrate to her young how to go about consuming this food. By these actions, the broody hen “facilitates the acquisition of adaptive foraging skills and knowledge of palatability by the chicks” (Edgar et al. 2016). A study conducted in the work “Influence of Chicks and Food Quality on Food Calling in Broody Domestic Hens” examines the extent to which adequate nutrition affects the food calling of maternal hens and therefore her chicks. The investigation was comprised of hens being subject to four distinct food types (with one being no food at all, one being material that is inedible, and the other two being edible) and five individual situations regarding her chicks. The study revealed altogether that more “feeding calls” were composed when the most appetizing food was presented and that significantly less “feeding calls” were voiced when food was not introduced or when uneatable food was dispensed (Lunel et al. 1999). A presumption can be drawn from these results. A broody hen will initiate “feeding calls” to not only signal where the food is, but also to explicate to her chicks that the food she discovered is consumable. While the broody hen is indicating to her chicks the location of food, she is also displaying to her chicks which food is edible. The hens teach their young what their “prey” is, whether that is a piece of corn or a worm. With reference to certain feeding behaviors, my own observations currently apply. I have ascertained that broody hens have a substantial impact on the scratching behaviors of their chicks. The motion of scratching transpires when a chicken scrapes or grazes their feet at the ground or surface to uncover food. I personally have brooded chickens without a mother hen and I have also allowed broody hens to rear their own chicks unassisted by me. The differences concerning scratching behaviors between the two groupings are pronounced. The chicks raised by broody hens exhibit scratching behaviors much earlier than chicks raised without a mother hen. The chicks reared by a mother acquire the skill

of scratching from observing then mimicking their mother. The chicks reared without a mother learn scratching behavior when they are in the presence of adult chickens much later in their existence. The earlier chicks learn this important ability the fitter they will be as they will have the opportunity to consume more food through scratching. Altogether, the “feeding calls” and feeding behavior demonstrated by broody hens are advantageous to chicks.

Another vocalization that broody hens display to their chicks are “roosting calls”. Referencing “Influences of Maternal Care on Chicken Welfare”, these calls are used by the broody hen “to attract the chicks to rest underneath the hen, usually just before night time” (Edgar et al. 2016). Until they lose their downy and produce genuine feather, young chicks cannot regulate their own body temperature. Therefore, the “roosting call” is significant for chicks to go ahead underneath their mother or otherwise the chicks will presumably not survive. Comparatively speaking, the warmth beneath a broody hen is certainly safer and healthier for chicks than the warmth from an artificial heating source. With an artificial heating source “behaviours [of the chicks] become unsynchronized and [the] chicks may disturb and direct feather pecks towards resting conspecifics” (Edgar et al. 2016). Overheating is a possible concern when chicks are reared without a mother. For chicks that are overheated, it is difficult to escape the heat of a heating lamp or brooder pad. However, chicks reared by a broody hen can simply withdraw out from under the hen as she does not radiate heat like artificial heating sources do. One more variation of vocalizations emitted by broody hens are “maternal cluck calls”. In the composition titled “Effects of Exposure to Chicks on Maternal Behaviour in Domestic Chickens”, a study was implemented where hens were given two recently hatched chicks each. These hens had not ever been broody before as the study was attempting to induce broodiness in hens. The researchers recorded the various vocalizations the hens expressed. They

discovered that “[m]aternal responses appeared on day 1 in the majority of subjects” (Leboucher and Richard-Yris 1987). These “maternal responses” or “maternal cluck calls” are small noises that broody hens continually utter. The clucks establish a familiarity of the chicks with their mother and are utilized by the mother hen to acquire the attention of her young. As explained by the numerous authors of “Opportunities for visual experience which might allow imprinting in chicks raised by broody hens”, “[c]lucking was usual, so that in almost all emergences [referring to when chicks would come out from under their mothers], chicks were exposed to a stimulus which was conspicuous because of sound as well as movement” (Adam et al. 2000). Essentially, the “maternal cluck calls” are constructive to chicks as they aid in building the bond between the mother and her young and allow a sense of comfort and security to flourish in the chicks.

The last variety of vocalizations voiced by broody hens are “alarm calls”. A broody hen uses this type of call to warn her chicks of any potential danger nearby. These calls are obviously instrumental in a chick’s survival. From my observations, the “alarm call” issued by a rooster is remarkably similar to the one voiced by a broody hen. Both roosters and broody hens seem to keep their eyes on the sky to watch for hawks and other predatory birds as well as on the ground for foxes and other ground predators. Like roosters, broody hens are consistently on alert and are prepared to release the “alarm call” at any sign of danger. When chicks are in the presence of their mother hen, the chicks themselves are not burdened with the fear of predators. Instead, this responsibility is placed on the mother, allowing her young to frolic around free from strife. Therefore, the chicks develop the nature of being less alarmed and tense. Referencing the article “Persistent effect of broody hens on behaviour of chickens”, the findings had discovered “that the behavioral development of chicks was promoted and fearfulness was decreased remarkably by the presence of a broody hen” (Fujino et al. 2015). In the action of initiating “alarm calls”,

broody hens are teaching their chicks what animals are predators and therefore dangerous to them. Not only are the notions of “alarm calls” beneficial to chicks, but the very presence of a broody hen is fruitful. Young chicks do not have the knowledge, expertise, nor the body strength/size to fend off predators. Unlike young chicks, adult chickens, especially protective broody hens, have more of a likelihood of repelling predators. Overall, “alarm calls” are critical in protecting chicks, allowing chicks to develop peacefully, and educating chicks with respect to predators.

In reviewing the knowledge that broody hens are advantageous to chicks, one considers how broody hens effect the social behaviors of their chicks. The study regarding emergence and brood size, “Opportunities for visual experience which might allow imprinting in chicks raised by broody hens”, expresses the social development between a broody hen and her chicks. “When they emerge from under the wings, the mother turns the head to them” so that one of the initial objects a chick visualizes anytime it leaves its mother, is her head (Adam et al. 2000). This action taken by the broody hen reinforces the connection between mother and chick as the chick associates its mother with safety and comfort. As per my own examinations of social behaviors, there is a considerable contrast in the length of time taken to develop social behaviors between chicks nurtured by a broody hen and chicks that were not nurtured by a broody hen. Social behaviors like dust bathing and preening seen in adult chickens are sometimes solitary activities, however in young chicks, I have noticed that chicks tend do these activities in groups or pairs. The chickens that are raised by broody hens participate in these activities much earlier than those that are raised artificially. Therefore, one could conclude that these findings are the result of broody hens teaching their young motions like dust bathing and preening. The act of doing the movements in the presence of other chicks increases the familial bond between chick siblings

and between the chicks and their mother. Dust bathing and preening are essential to the overall health and happiness of chickens. On that account, broody hens are beneficial to chicks in the area of social behaviors as the hens teach these behaviors to their chicks allowing their chicks to thrive and be content.

In investigating the outcomes of maternal care from broody hens on chicks, the chicks unquestionably benefit from the maternal care of a broody hen. The positive outcomes being vocalizations, feeding behaviors, social behaviors, and the education involving predators and prey. The unique relationship, developed through vocalizations, feeding and social behaviors and the educating of food and dangers, between a broody hen and her chicks displays the need for chicks to indeed be reared by a hen as opposed to being reared artificially. This research implies a need for commercial poultry farms to invoke the use of broody hens to rear chicks. Nonetheless, this suggestion would not be plausible on a large scale nor over a prolonged period of time. Therefore, further research concerning either how to artificially produce natural rearing effects or how to improve artificial rearing needs to be accomplished for the health and wellbeing of chickens.

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