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Perspective

Natural incubation in poultry

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DESCRIPTION

Brooding occurs when a female bird sits on her eggs in a nest to incubate them. Natural incubation, also known as brooding, is the most straightforward method of hatching a small number of eggs. A broody hen (chicken) will incubate her own or another hen's or duck's eggs. Broody hens may refuse to feed or drink from the eggs.

New chicken breeds (types) may not be good brooders. Placing some white balls or a few hard cooked eggs in the nest for a day or two is a nice way to check the bird's broodiness. Replace the eggs with 10-15 fertile eggs that have been tested if the bird remains in the nest and will not easily leave. Natural incubation is the easiest method for hatching small numbers of eggs, and a broody hen can be utilized to incubate and hatch her own or another bird's eggs. A hen has the ability to incubate 12 to 15 chicken eggs or up to 10 duck eggs. In a nesting box, the broody hen is maintained. Take her out of the nest for 20 minutes every day to feed and water her. If a hen is used to incubate duck eggs, water must be sprinkled on them for the final 14 days of incubation. A hen can also incubate the eggs of turkeys. A female turkey can lay up to 15 eggs, but only 9 turkey eggs can be incubated by a brooding hen.

In some fowl, broodiness is a nuisance and, in some cases, a dangerous concern. Persistent nesting is a behaviour that is usually associated with the termination of egg laying. Broodiness is made up of two parts: incubation and brooding behaviour. The former can only be produced in laying hens, while the latter can be induced in both laying and non-laying hens, as well as males, through forced chick fostering. After 4-5 weeks of sitting on infertile eggs, the desire to incubate fades, and brooding behaviour reduces as the chicks become independent and egg laying restarts. Low levels of plasma luteinizing hormone (LH) and ovarian steroids, as well as high and low levels of plasma prolactin, are linked to incubation and brooding behaviour, respectively. The neuronal network mediating both incubation and brooding behaviors' includes the preoptic region of the hypothalamus (POA). Increased Vasoactive Intestinal Polypeptide (VIP) and decreased gonadotrophin-releasing hormone (GnRH) production from the brain cause high levels of prolactin and low levels of plasma LH in incubation hens, respectively. Changes in the rates of synthesis of these two neuropeptides contribute to changes in their release from the hypothalamus. Dopaminergic input from the POA, which is enhanced by a serotonergic input, stimulates the release of VIP in incubation hens. The synergistic action of oestrogen and progesterone causes incubation behaviour, which is a type of protracted nesting behaviour. Increased prolactin secretion induced by neuronal signals supplied through the brood patch from a clutch of eggs to hypothalamic VIP neurons transforms it into incubation behaviour. Good husbandry aimed at reducing broody behaviour is the most effective way to keep them under control. Pharmacological and immunological treatments can be employed to manage or prevent broodiness, although they are often uneconomical, and some may cause egg production to be delayed. Because broodiness is a polygenic characteristic, quantitative trait loci analysis can be used to find regions of the genome that affect it. Breeding programmes utilizing DNA marker assisted selection are likely to benefit from the identification of markers in, or linked to, these genes that are associated with broody behaviour.

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