

## **Hoopoes engage in strange egg-licking behaviors**

By [Tim Sandle](#) Jan 25, 2015 in [Environment](#)

Hoopoes have a remarkable habit. They cover their eggs with a secretion from their beaks. The secretion is packed with beneficial bacteria, which protects the eggs. A new research study has been looking into this behaviour further.

Top  
News

---

To date, the interesting behavior has only been detected with hoopoes, with no other birds displaying this type of activity. The purpose of the behaviour is to protect the eggs from infections by pathogens. The secretion is formed from the uropygial gland.

The [hoopoe](#) is a colourful bird found across Afro-Eurasia, notable for its distinctive "crown" of feathers. The species is highly distinctive, with a long, thin tapering bill that is black with a fawn base.

In some rather cruel-sounding research, scientists stopped several female hoopoes from impregnating their eggs with the secreted substance. By stopping the activity, the researchers found that the amount of pathogen bacteria found inside the eggs which failed to hatch was higher. This confirmed the experimental hypothesis that the secretion provides a barrier for the entry of pathogens.

[Further analysis](#) confirmed that the secretion contains beneficial bacteria that are capable of producing a protein product called bacteriocin. Bacteriocins are [proteinaceous toxins](#) produced by bacteria to inhibit the growth of similar or closely related bacterial strain(s).

The study also revealed that the higher the concentration of a specific bacterial genus — enterococci — then the greater the chance there is of the eggs remaining pathogen free.

The latest research has been undertaken by University of Granada and the Higher Council of Scientific Research (CSIC), by a research group specialising in 'evolutive ecology.' The findings have been [reported to](#) the *Journal of Animal Ecology*, in a paper called 'Special structures of hoopoe eggshells enhance the adhesion of symbiont-carrying uropygial secretion that increase hatching success.'

[In related research](#), biologists have discovered that preen gland secretion causes hoopoes' eggs to change color, signalling about the health of the mother bird.

More about [Hoopoes](#), [Eggs](#), [Pathogens](#), [Bacteria](#), [Birds](#)

---

More news from



---

Promoted Content From The Web:

- [Comments](#)
- 
-